



*competition*commission
south africa

DATA SERVICES MARKET INQUIRY FINAL REPORT

NON-CONFIDENTIAL



2 DECEMBER 2019

competition regulation for a growing and inclusive economy





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List of Abbreviations

2G	Second generation mobile systems (technology)	EBITDA	Earnings Before Interest, Tax, Depreciation and Amortization
3G	Third generation mobile systems (technology)	ECA	Electronic Communications Act, 2005 (Act No. 36 of 2005)
4G/LTE	Fourth generation systems (technology)/Long term evolution	ECN	Electronic Communications Network
A4AI	Alliance for Affordable Internet	ECNS	Electronic Communications Network Services
ADSL	Asymmetric digital subscriber line	ECPR	Efficient Component Pricing Rule
ANC	African National Congress	EU	European Union
APN	Access Point Network/Name	FTTB	Fibre-To-The-Business
BRICS	Acronym for the association of five major emerging economies: Brazil, Russia, India, China and South Africa	FTTH	Fibre-To-The-Home
CfS	Call for Submissions	FTTP	Fibre-To-The-Premises
DFA	Dark Fibre Africa	GB	Gigabytes
DG MT	The DG Murray Trust	GDP	Gross Domestic Product
DOC	Department of Communications	GHz	Gigahertz
DSL	Digital subscriber line	GNI	Gross National Income
DTPS	Department of Telecommunications and Postal Services	GSM licence	Global System for Mobile Communications license
DTT	Digital Terrestrial Television	HDS	High Demand Spectrum
EBIT	Earnings Before Interest and Tax	ICASA	Independent Communications Authority of South Africa
		ICT White Paper	National Integrated ICT Policy White Paper

ICT	Information Communications and Technology	OECD	The Organisation for Economic Co-operation and Development
IMT	International Mobile Telecommunications	OOB	out-of-bundle
IoT	Internet of Things	OTTs	Over-the-top services
ISP	Internet Services Provider	PBOs	Public Benefit Organisations
ISPA	Internet Services Providers Association	PPP	Purchasing Power Parity
ITU	International Telecommunication Union	RAMP index	RIA African Mobile Pricing Index
KZN	KwaZulu-Natal	RAN	Radio Access Network
LLU	Local Loop Unbundling	RIA	Research ICT Africa
MB	Megabytes	SADC	Southern African Development Community
MCI	Mobile Connectivity Index	SMS	Short Message Service
MER	Market Exchange Rate	SOE(s)	State-Owned Enterprise(s)
MHz	Megahertz	ToR	Terms of reference
MMA	Media Monitoring Africa	URL	Uniform Resource Locator (URL)
MNO	Mobile Network Operator	USAASA	Universal Service and Access Agency of South Africa
MoC	the Ministry of Communications	WLL	Wireless Local Loop
MTRs	mobile termination rates	WOAN	Wireless Open Access Network
MVNO	Mobile Virtual Network Operator		
NDP	National Development Plan		

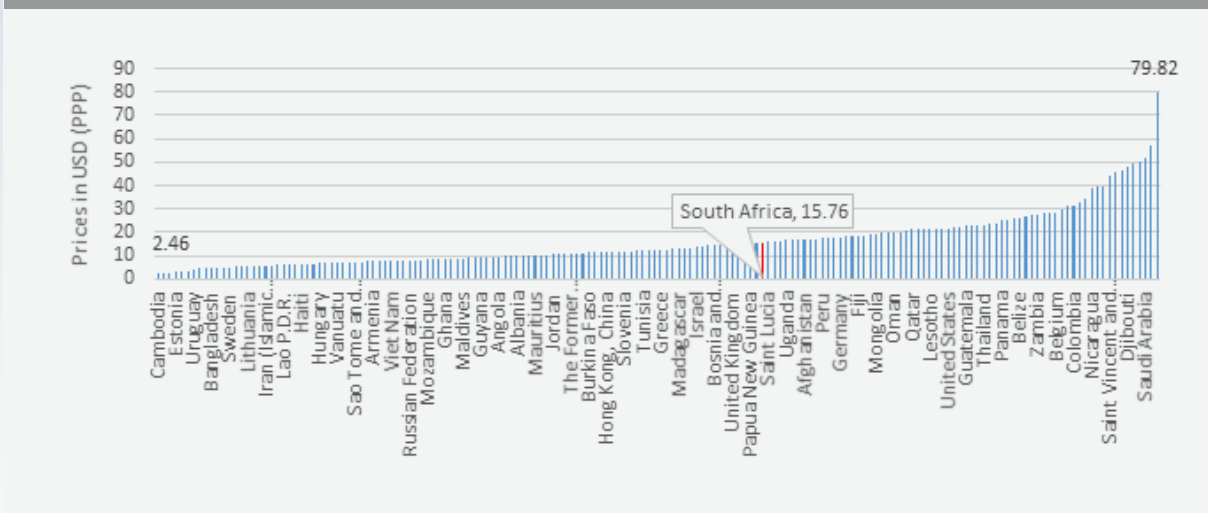




SUMMARY OF FINAL FINDINGS AND RECOMMENDATIONS OF THE DATA SERVICES MARKET INQUIRY

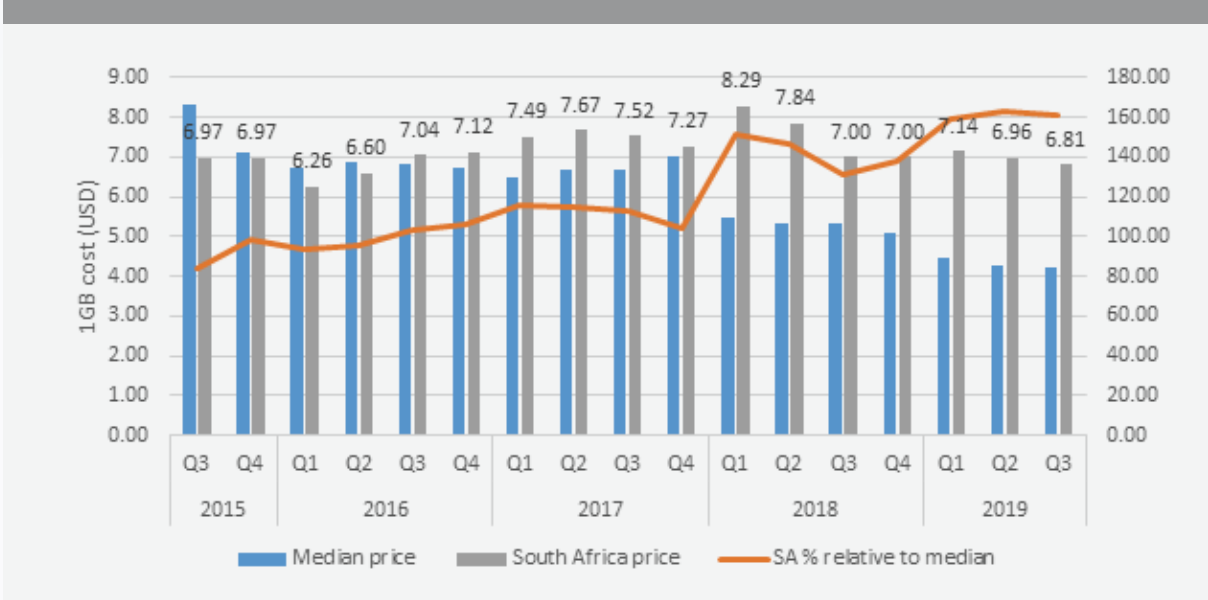
1. The Data Services Market Inquiry (the “Inquiry”) was initiated by the Competition Commission in terms of Section 43B(2) of the Competition Act No. 89 of 1998 (as amended) (“the Act”) in August 2017. The initiation of the Inquiry followed persistent concerns expressed by the public about the high level of data prices and the importance of data affordability for the South African economy and consumers. The purpose of the Inquiry as set out in the terms of reference is *to understand what factors or features of the market(s) and value chain may cause or lead to high prices for data services, and to make recommendations that would result in lower prices for data services.*
 2. Following the initiation, a formal Call for Submissions was published on 20 September 2017. Sixteen submissions were received, including the major operators and consumer rights organisations. The Commission’s Inquiry team also held public hearings in Pretoria from 17 to 19 October 2018 where oral and written submissions were received from 15 stakeholders. The Commission has also requested and received information on services and prices from major operators as well as information from other market players. The Provisional Report of the Inquiry was published on 24 April 2019, outlining the provisional findings and recommendations. Seventeen submissions were received in response to the Provisional Report. Following the submissions, the Inquiry team had further engagements with all the operators as well as other stakeholders. This involved further requests for information or clarity related to their submissions, but also further investigation of the fixed line supply gap which had received limited input in the initial submission and hearings.
 3. This report provides the final findings and recommendations of the Commission.
- ### Benchmarking and profitability analysis confirm South African prices are high
4. The Terms of Reference required that the Inquiry undertake an international benchmarking of South African data prices. Notwithstanding the challenges involved, international price comparison studies do have some probative value by providing a simple and effective cross-check on the general level of advertised prices in a market. Their use has become relatively standard internationally and the Commission was able to draw on an extensive volume of existing benchmarking exercises including that of the International Telecommunication Union (ITU), Tarifica, the Independent Communications Authority of South Africa (ICASA), and Research ICT Africa. Whilst these focus on advertised prices for 30-day bundles and the effective prices, which incorporate free data offers and short-validity bundles but also data expiry, may differ to advertised prices, this is the case for all countries and not just South Africa.
 5. The existing international comparisons on **mobile prepaid data prices** collectively indicate that South Africa currently performs poorly relative to other countries, with prices generally on the more expensive end.
 - 5.1 The ITU data shows that South Africa ranks poorly when compared across a worldwide selection of countries and is considerably more expensive than the

Figure 1: Mobile prepaid data prices in USD (PPP), 500MB (2017)



Source: Adapted from ITU 2018 Measuring the Information Society Report

Figure 2: Comparison of 1GB price for SA against 36 African countries (Q3 2015 to Q3 2019)

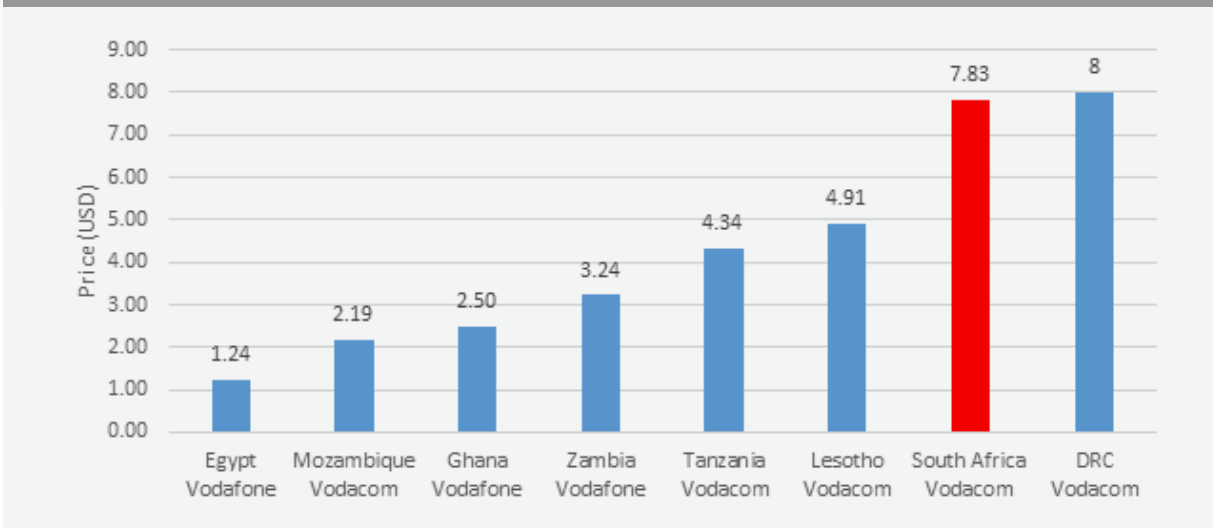


Source: RIA RAMP Index and data submissions to the Commission

cheapest offers. The ITU also finds that South Africa also ranks poorly relative to other African countries as a group. Whilst there is a lag in the release of the data, its findings are relatively consistent year to year and domestic headline prices have not been declining substantially. Furthermore, prices in other markets are also on the decline. The figure above shows the international comparison based on ITU data.

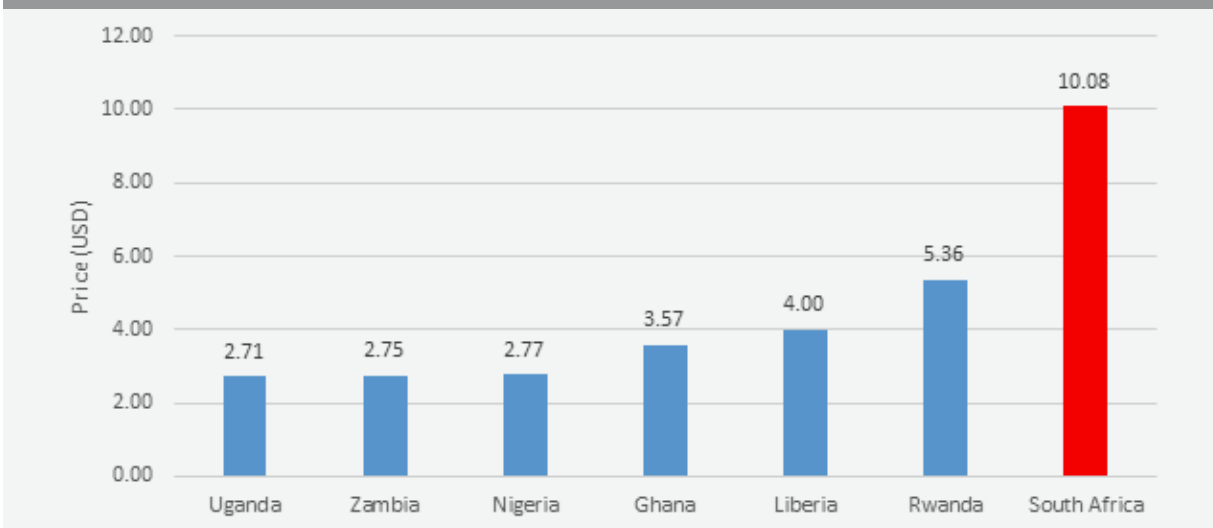
5.2 The more recent Tarifica Global Benchmark Report for Q1 2019 confirms that not much has changed over time. Tarifica looks at usage profiles and examines the cheapest data bundles available for that usage group. For mobile prepaid data-only plans, Tarifica ranks South Africa 22nd out of 25 countries for heavy users and 18th for moderate users. Its light user measure is not meaningful as a large number of the countries do not offer small packages.

Figure 3: Vodacom 1GB tariffs across Africa (2019)



Source: Vodacom and Vodafone websites (updated November 2019)

Figure 4: MTN 1GB retail data tariffs across Africa (2019)



Source: MTN websites (updated November 2019)

- 5.3 Research ICT Africa (RIA) RAMP index data which has prices up to Q3 2019 across 37 African countries, concludes that not only does South Africa perform poorly relative to our continental peers, but this has worsened over time. This result is independent of exchange rate fluctuations and is driven by headline prices declining in other countries but not South Africa.
- 5.4 Furthermore, current comparisons of the prices charged by Vodacom and MTN in other African markets in which they operate also reveal that South African

- prices are higher than most countries by some distance, even in Lesotho where Vodacom is the effective monopoly provider. This is notwithstanding the recent price reductions of Vodacom South Africa which are captured in the figure above.
6. Vodacom and MTN have argued that such comparisons are uninformative because cost and quality differences across countries, including spectrum allocations, may account for the differences in pricing. They have also argued that such comparisons involve headline 30-day tariffs and that effective

prices, including promotions, short-validity bundles and free data, are a better basis for comparison.

6.1 However, despite having detailed cost, quality and effective price information across the different African markets in which they currently operate, the operators have failed to make use of this information to demonstrate that cost and quality factors do account for the price differentials or that South African effective prices are in line with other markets. The failure to do so leads to the obvious conclusion that the results are unhelpful to their case and therefore one can deduce that these factors do not account for the price differentials observed and that South Africa still performs poorly when assessed on effective prices.

6.2 This is confirmed by analysis undertaken by the Commission which finds that there is no strong correlation between many of the factors cited and differentials in costs. This is even the case for factors such as spectrum holdings, where there are countries that are cheaper than South Africa which have also not released the digital dividend spectrum. Indeed, Vodacom's own submissions on the cost impact of the lower spectrum

holding demonstrate that the capital and operational expenditure implications are small relative to the price differentials observed.

6.3 The operating margins and profitability of these two operators across the different countries is further evidence that neither differences in costs nor the use of effective prices changes the conclusion that prices in South Africa are high. The financial statements reflect the actual costs of operations as well as the net revenue generated and therefore capture such factors. For Vodacom, the South African operations have consistently seen materially higher earnings before interest and taxes (EBIT) and earnings before interest, taxes, depreciation and amortisation (EBITDA) margins over time, as well as higher returns on capital employed (ROCE). The latest financial year is no different as reflected in the table below. MTN South Africa's EBITDA margins are only marginally lower than that of Vodacom at 35.1% in FY2018. The MTN comparators include several high profit countries which means these also have higher margins on average.

6.4 Furthermore, applying the price-cost test (as used in excessive pricing investigations) to Vodacom's annual

Table 1: Vodacom financial performance in South Africa and other markets (FY2019)

Country	EBIT margin	EBITDA margin	Capital intensity	Estimated ROCE
Overall Group	26.0%	37.4%	14.4%	23.7%
South Africa	28.4%	38.9%	13.4%	[55% - 60%]
International	17.2%	31.3%	16.9%	[10% - 15%]

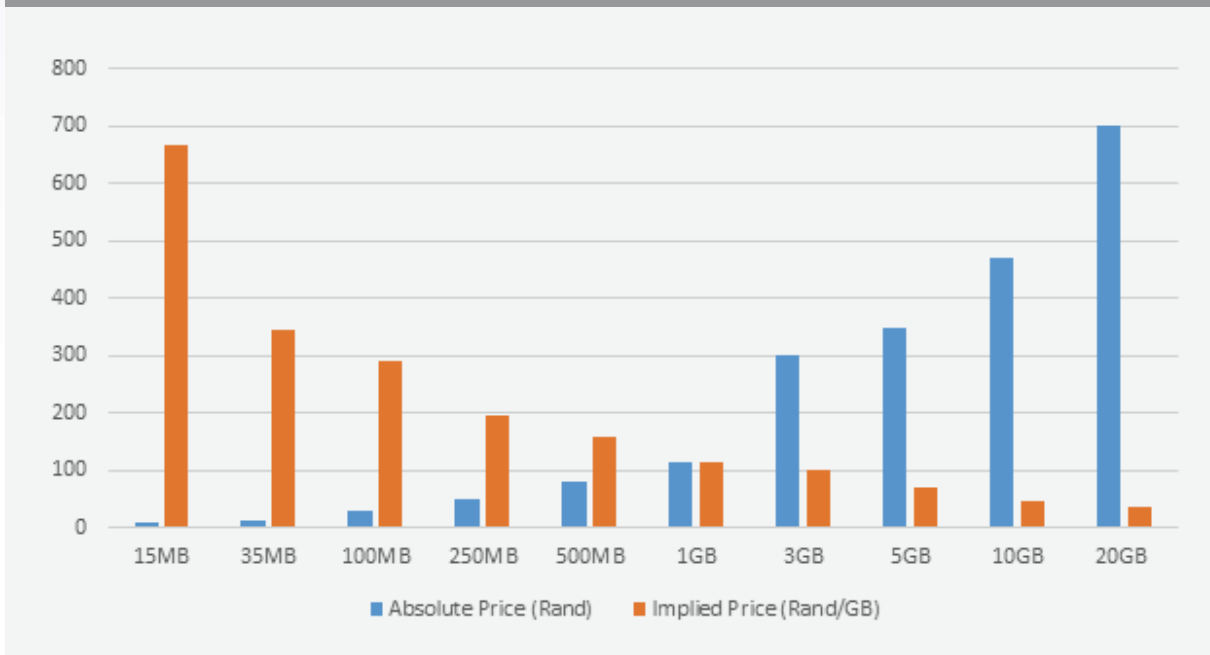
Source: Vodacom Group Annual Report year ended 31 March 2019, Vodacom Pty Ltd Annual Financial Statement for the year ended 31 March 2019 (Confidential); Commission calculations

Table 2: Vodacom South Africa's price-cost mark-ups, FY2014 - FY2019

	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Calculated price-cost mark-up	[20% - 25%]	[20% - 25%]	[15% - 20%]	[20% - 25%]	[20% - 25%]	[15% - 20%]

Sources: Vodacom Pty Ltd Annual Financial statements for years ended 31 March 2015 - 31 March 2019; Commission workings

Figure 5: Example of Vodacom's price discrimination by bundle size (2019)



Source: Own construction based on data collected from Vodacom's website as at November 2019

financial statements for South Africa reveals that its overall mobile operations, inclusive of data and voice, have consistently delivered mark-ups of prices in excess over economic costs (which include a fair return on capital) in the region of [20% - 25%] on average over the past six years. This level of mark-ups is sufficiently high to establish a *prima facie* case of excessive pricing by Vodacom. A similar exercise for MTN reveals lower, albeit positive mark-ups. High levels of profitability and mark-ups are also indicators of market power and a lack of effective competitive constraints on pricing levels.

- As identified in the Provisional Report, South Africa performs a little better on the same international benchmarks for **mobile postpaid data prices** relative to the prepaid data prices, although South Africa is still considerably more expensive than the cheapest countries and is seeing its ranking decline over time. The global ITU sample (2017) ranks South Africa 37th (of 167 countries) worldwide and 12th (of 43 countries) in Africa. Tarifica (Q1 2019) ranks South Africa 19th (of 25 countries) for heavy users and 6th for moderate users. This

finding is indicative of a potential structural problem with retail prices in South Africa, whereby poorer, prepaid consumers are exploited with relatively higher prices than the wealthier postpaid consumers.

Anti-poor retail price structures lacking transparency

- The Provisional Report identified that, consistent with the benchmarking, lower income consumers who purchased smaller data bundles were faced with inexplicably higher costs per megabyte (MB) relative to the consumers who purchased much larger data bundles. This pattern of price discrimination is illustrated in the figure above for Vodacom's 30-day data bundles, which shows that pricing per MB for smaller bundles is multiple times the price per MB of larger bundles even if the absolute cost is lower.
- As the Provisional Report noted, such differences in pricing cannot be explained by cost differences. Those operators that have cited cost differences as a factor have not put up any compelling evidence to support that assertion despite being afforded the opportunity to do so. This leads to the obvious conclusion that cost

differences cannot explain such differences as otherwise the evidence would have been tendered.

10. Rather, the operators have sought to argue that this represents pro-competitive price discrimination which raises overall consumer welfare, and that poor consumers elect to make greater use of short-validity data bundles (hourly, daily and weekly bundles) and URL-restricted bundles (e.g. WhatsApp bundles) which, along with free and promotional data use, result in either the same or lower effective rates per MB as wealthier consumers. They seek to demonstrate this through alternative approaches to identifying poorer consumers, with Vodacom using geolocational data on overnight residency and MTN using average revenue per user (ARPU) data.
11. The Commission does not find any of these arguments compelling and remains of the view that poorer consumers in South Africa are being unduly exploited relative to wealthier consumers. Furthermore, that this outcome is likely to be in part driven by the lack of competition in the mobile data market and the lack of data alternatives for the poor relative to the wealthy, such as fibre to the home (FTTH) and Wi-Fi in the workplace.
12. Firstly, whilst price discrimination can be welfare enhancing, it can also be exploitative. As recognised by the OECD (2016), firms with market power can make use of partitioning strategies to facilitate greater levels of price discrimination in order to raise the overall level of margins and prices above what they would otherwise achieve. Partitioning strategies include taking steps to prevent arbitrage, to distinguish between sophisticated and naïve customers, to distinguish between high volume and low volume purchasers, as well as gathering and analysing data on individual customers' willingness to pay for a product.
13. The pricing behaviour of the dominant operators in South Africa and the outcomes of high profit margins are consistent with such partitioning strategies and exploitative price discrimination.

13.1 The strategy in South Africa for the two dominant operators has been to maintain the high pricing levels of 30-day prepaid data bundles despite headline price reductions by challenger networks. This is in stark contrast to their behaviour in other African markets in which they operate, where there have been reductions in the 30-day prepaid data bundle prices. This indicates that they are more capable of price discrimination strategies in South Africa where they dominate.

13.2 Successful partitioning is also evident from the vast differences in data prices that the operators have been able to charge different subscriber groups. For instance, Vodacom has responded to some of the high volume postpaid data deals of Telkom Mobile with pricing as low as R199 for 20GB (20 gigabytes) anytime data (with 20GB night-time data), and yet it has successfully prevented such deals from 'contaminating' its prepaid side where 1GB persisted at a cost R149 for a number of years even if it came with another GB free (only recently did Vodacom drop the price to R115, with a R99 price available only on the operator app).

13.3 The gathering and analysing of personal data usage in order to make personalised offers also seems to be premised on identifying opportunities to expand revenue per subscriber rather than offer lower prices to more price sensitive subscribers.

13.4 As identified in the Provisional Report, the complexity of pricing structures alone often leads to behavioural biases that are exploited by operators, a common critique of price discrimination in telecommunications markets. Complex pricing structures can discourage consumers researching the best price (incl. across operators), resulting in consumers sticking to what they are familiar with even if it is inferior, or making judgement errors by switching to ultimately inferior options.

For instance, punitive out-of-bundle rates result in a behavioural bias to buying larger bundles than required and the short-validity of other bundles may result in low utilisation such that consumers do not realise the full benefit of data bundles.

14. Secondly, short-validity bundles are clearly inferior options in contrast to monthly data bundles as they only provide access for a short period, and therefore it is no answer to state that poorer consumers can and do turn to these alternatives in search of better value. At best for the operators, all this indicates is that poor consumers must accept receiving an inferior intermittent data service if they wish to pay a similar amount per MB as the wealthy. At worst for the operators, the poor still pay more per MB than the wealthy and on top of that get an inferior, intermittent service. Either way, what is apparent is that on a like-for-like basis, a monthly data service provided to the poor is inexplicably more expensive per MB than to the wealthy.

- 14.1 A monthly data bundle seeks to ensure continued data service availability over the entire month, and at the same price per MB. Short-validity bundles, especially hourly or daily bundles, provide data access for a very brief period only. Furthermore, it is uneconomic to purchase hourly or daily bundles on a continual basis and purchasing four weekly bundles is no cheaper than a monthly bundle. The short-validity also risks lower levels of utilisation as subscribers fail to fully exploit the bundle before it expires.

- 14.2 The evidence provided by the operators does indeed show that poorer consumers have become increasingly reliant on short-validity data bundles and to a far greater extent than wealthy consumers. The numbers are particularly concerning and suggest that the bulk of poor consumers are likely to be in the position where they do not have continual daily access to data services. Data for one operator shows data purchased by lower income

consumers is on average valid for less than a third of a month, a level far lower than wealthier consumers. Alternatively, poor consumers must pay a materially higher price per MB if they wish to have a continual service. The point of an affordable data service to all citizens is that they have continued access to that service at an affordable price.

15. Thirdly, the Provisional Report made use of monthly volume usage as a proxy for poorer consumers and this demonstrated that those purchasing smaller volumes paid materially higher effective prices than those consumers purchasing greater volumes. Whilst criticising this exercise, the operators have not provided compelling evidence themselves that poorer consumers receive any better effective pricing than wealthier consumers even with access to short-validity bundles, URL-restricted bundles and the occasional free or promotional data.

- 15.1 Neither operator ultimately rebutted the exercise undertaken in the Provisional Report. Both Vodacom and MTN instead focused on arguing for alternative proxies for identifying lower income consumers other than volume of data purchased. However, what is self-evident from the evidence provided is that whilst the Commission's proxy is not a perfect delineator of income groups, neither are the other measures proposed by the two large operators. In addition, their delineation still revealed the trend that volume usage is correlated with income which is the Commission's measure.

- 15.2 MTN made use of the same sample as that used by the Commission but sought to argue that ARPU was a better proxy for the income of the subscriber rather than the volume of data used. It also sought to 'clean' the data, after which it claimed to demonstrate the counterintuitive outcome that lower income consumers paid far less per MB than wealthier ones. However, what is apparent is that the result is highly sensitive to this 'cleaning' exercise as well as the weighting used. It also used a period where MTN promoted its service

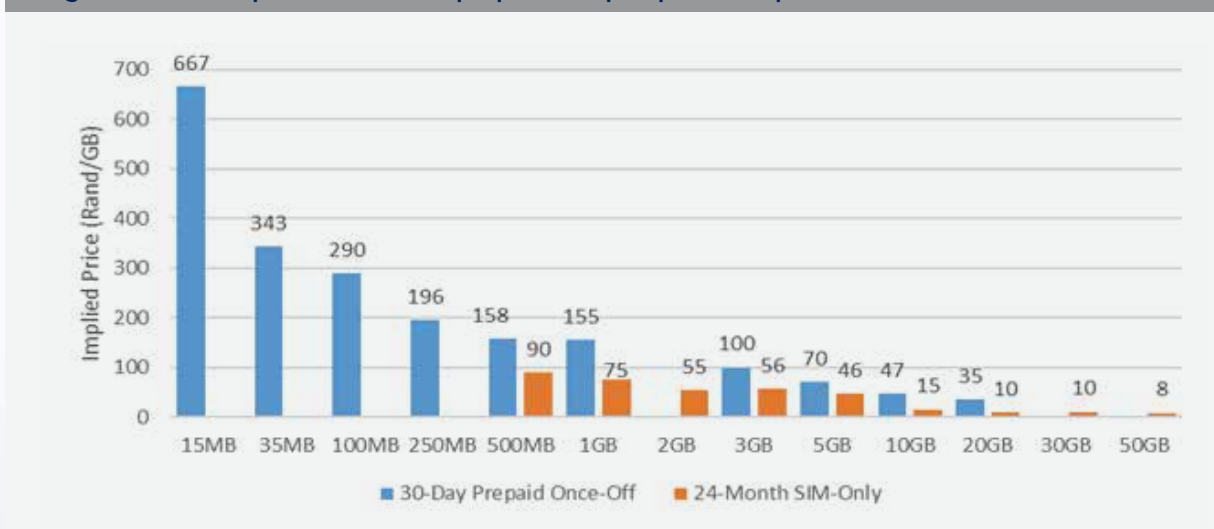
by offering 1GB free data with each SIM, strongly impacting on the results. Using reasonable assumptions that also preserve more of the sample, and simple averages which more accurately reflect the mean, results in the completely reverse (and more intuitive) conclusion, namely that most poorer consumers do indeed spend more per MB than wealthier ones.

15.3 Vodacom sought to do a more complex exercise of using the night-time location of the subscriber as a determinant of their income level based on the average income per suburb from the 2011 census. The Commission team has consistently found anomalies and errors in this exercise which have been acknowledged by Vodacom, and most likely are the result of an ambitious but complex exercise. However, even if the results are accepted at face value, at best they demonstrate that poor consumers historically did far worse than wealthier consumers, and that only very recently this gap may have been eliminated but only through an increased dependency on short-validity bundles. As already discussed, this is cold comfort for the poor.

16. The Commission therefore finds that the current pricing strategies of the two larger operators are anti-poor insofar as lower income consumers who may purchase less data pay inexplicably higher prices than wealthier, larger volume consumers on a like-for-like basis. This is in the context where pricing overall is already high. Poorer consumers are faced with little option but to resort to purchasing short-validity bundles in pursuit of lower prices, but this is no answer as it does not provide them with continual data access at affordable prices.

17. Furthermore, the Commission also finds that the evidence is consistent with larger operators being actively engaged in exploitative price discrimination and partitioning strategies in order to push up margins and prices. These partitioning strategies also work against the poor as it has enabled the operators to engage in far lower pricing to postpaid high-volume data customers in response to the fixed LTE offerings from Telkom Mobile and RAIN, whilst still preserving the prepaid mobile phone data services at much higher prices. These strategies precisely exploit the lack of alternative data services to poorer consumers, at least for lower volume usage levels. The figure below demonstrates this vast disparity between postpaid and prepaid.

Figure 6: Price disparities between prepaid and postpaid data plans on Vodacom



Source: Vodacom's website (November 2019)

18. In addition, the operators benefit from an overly complex pricing structure resulting from price discrimination which reduces pricing transparency in the market and allows them to benefit from consumers making poor decisions around which options are best for them, including which operator to subscribe to. The further shift to personalised pricing in the context of market power and existing exploitative price discrimination is extremely concerning for the Commission.

Price-based competition in mobile markets inadequate

19. Based on the evidence before the Commission, we find that price-based competition is inadequate, the challenger networks of Cell C and Telkom Mobile are unable to effectively constrain the two first-movers, and that Vodacom has substantial market power, with MTN to a lesser degree. There was a consensus in the submissions to the Commission on this point, with the obvious exception of Vodacom and MTN themselves who continued to maintain that the market was competitive.
20. The retail mobile market has remained stubbornly concentrated despite the entry of two challenger networks over time. Vodacom has a share in mobile services more generally, and data services specifically, that exceeds the thresholds used in the Competition Act for a conclusive determination of dominance. MTN has constantly skirted around the threshold level where there is a rebuttable presumption of dominance. These shares have barely changed over time, and even the most recent estimates confirm this scenario with the two incumbents collectively holding at least 70% of data revenue and 80% of total subscriber service revenue.
21. The existence of market power and ineffective competition is also reflected in the profitability of Vodacom and MTN, both in absolute terms and relative to their operations in other markets. As reflected above, Vodacom's South African operations have materially higher margins than its operations elsewhere, and its estimated

price-cost mark-ups are at such high levels that a *prima facie* case of excessive pricing exists. MTN South Africa has marginally lower EBITDA margins relative to Vodacom and consistently positive price-cost mark-ups.

22. The pricing analysis undertaken by the Commission in the Provisional Report and the evidence provided to the Commission since confirm that these two operators are to a large extent able to price independently of the challenger networks, regardless of the recent adjustments in price by Vodacom.

22.1 On headline data prices, Cell C has historically been more aggressive and yet the two larger networks have found it profitable to not follow their pricing downwards. As a result, it seems that Cell C has recently determined that it cannot win sufficient share by lowering prices and has proceeded to raise them back upwards. More recently, it has been the turn of Telkom Mobile to be more aggressive on pricing, dropping headline rates well below its rivals. However, the larger networks, especially Vodacom, have historically not sought to respond with lower headline prices themselves and it is not apparent that Vodacom's recent adjustments to pricing on its 1GB bundle represent a direct response to another operator.

22.2 Whilst the two largest operators claim to respond in other ways, such as short-validity bundles and selective free or promotional data, the Commission has found little evidence of any direct and relatively immediate responses to the price reductions by challenger networks on like-for-like products. In all the cases cited by the dominant operators, the alleged response appears to have no relation to the timing of the competitor's change. The only case where there appears to be a direct response on a like-for-like product is on high usage postpaid data-only bundles offered by Telkom. What is also of interest is that Vodacom did not even mention

- Cell C in its discussion of competitive constraints. The difficulties that Cell C currently faces has clearly impacted on its ability to impose any real constraint on the dominant operators.
- 22.3 The fact that the challenger networks hold a much higher share of actual data traffic relative to their share of data revenue indicates that revenue per GB for the dominant two networks is considerably higher than that of the challenger networks. This evidence demonstrates that short-validity and promotional data, which would be included in the revenue per GB measure, has not been the means of competitive response to challengers' pricing. Rather, this is further confirmatory evidence that the two largest operators have the power to price independently of their competitors.
23. The resilience of the dominant positions lends credence to the submissions which suggest certain market features serve to perpetuate the incumbent positions of Vodacom and MTN, including first mover advantages, and that the failure to regulate these in the past has contributed to this dynamic. The market features which seem to play more of a role are the following:
- 23.1 The larger subscriber base and levels of profitability of the two largest networks provides them with a considerable advantage in rolling out new technologies and services relative to the challenger networks. This is because the large capital expenditure requirements to provide wide coverage of such services and ensure sufficient capacity to maintain high network quality levels can be funded out of retained earnings whilst still providing ongoing shareholder returns. In contrast, the smaller and less profitable subscribers of the challenger networks means they are not able to fund capital expenditure to the same level, in part because they need to do so through shareholder equity or debt funding.
- 23.2 The constant battles Cell C has had with its debt levels and equity refinancing over an extended period are reflective of precisely this challenge for the newer networks. Its current financial woes only serves to highlight this difficulty entrants face. Telkom Mobile has had the benefit of a parent company with other business lines, but it is still having to fund new infrastructure with debt. It too has recently had to go out to the market for financing to fund its mobile business expansion despite showing healthy subscriber growth. This places the smaller networks at a disadvantage in providing the same subscriber coverage and network quality.
- 23.3 The network infrastructure and profitability advantage in turn weakens price-based competition as lower prices from challenger networks do not necessarily get a pronounced subscriber switching response due to network quality differences. This permits the larger networks to be less responsive on price and maintain higher levels of profitability, perpetuating the cycle of higher levels of infrastructure expenditure. It also softens price competition from the challenger networks as aggressive price declines may become financially unsustainable, especially considering the need to still fund investment in infrastructure. Where there is an insufficient subscriber response, lower prices provide less revenue from which to fund capital expenditure. Where lower prices do attract subscribers, the network capacity will be placed under pressure requiring more capital expenditure but also risking the loss of subscribers if network quality degrades. The outcome is that the challenger networks may have to resort to softer price competition in order to protect their financial viability.
- 23.4 The greater scale built through first-mover advantages provide other benefits to the incumbents,

namely a lower unit cost base than the challenger networks. Their coverage advantage coupled with uncompetitive roaming agreements have also provided the ability to be the network of choice in rural and less populous areas. This means that challenger networks are less able to impose a real pricing constraint on the larger networks. The stickiness of more valuable contract customers, more favourable site locations and spectrum assignments are also factors that have played into the hands of first-mover networks historically, albeit that their role or effect may have reduced over time.

24. The findings in the retail market also point towards potential problems in the wholesale markets. This is because later entrants (and retail service providers such as Mobile Virtual Network Operators - MVNOs) generally rely on the wholesale supply of infrastructure and other services from first-mover incumbent operators for the supply of their own services. Whilst this provides an opportunity to provide challenger networks with some of the benefits acquired by the larger networks, the reality is that it is rarely in the interests of the larger networks to provide access, or to do so on fair and reasonable terms, where they have high market shares and market power. This was evident with call termination rates, but is also evident in other areas where there is no current effective regulation. Aside from facilities leasing discussed further below, these areas include national roaming and MVNO arrangements.
25. Wholesale roaming arrangements are necessary for challenger networks to achieve national coverage whilst still rolling out their networks. What matters in the roaming agreement is not just the price of the service, but also the quality in terms of handover arrangements and technology access. Such agreements are subject to negotiation as there exists no economic regulation of roaming. As a result, the outside options of each

party and the degree of dependency on the other will influence the outcomes of these negotiations and whether challenger networks receive a competitive arrangement. The Provisional Report found that historically these agreements have been one-sided in favour of the incumbent operators, with high minimum payments required, high marginal rates, poor roaming quality through lack of seamless handover and denial of roaming for new data service lines.

26. The Commission finds that whilst the latest agreements provide improvements, most especially on the quality of service but also on price, they remain generally unfavourable to the challenger networks, especially those with less bargaining leverage. It is also not evident that the bargaining dynamic has necessarily changed materially, but rather that lower unit costs for data made a downwards revision inevitable.
- 26.1 From a pure bargaining dynamic, Vodacom and MTN are the only networks with national coverage and therefore the only options for those seeking a national roaming arrangement. Whilst Vodacom roams on RAIN for capacity in metro areas, RAIN is not an option for the other challenger networks nor are Cell C and Telkom Mobile options for RAIN. The universal coverage, strong brands and high subscriber numbers of Vodacom and MTN means that these networks are also not reliant on roaming partners to bring customer volumes to reduce unit costs on their networks, or only marginally so. There is therefore clearly an imbalance in dependency.
- 26.2 It is also clear that where there is more leverage for the challenger, it is able to extract a better outcome even if not a great outcome. For instance, as Vodacom required the extra metro capacity from RAIN, it in turn could extract better site access and roaming rates on Vodacom. Similarly, Telkom more broadly has other commercial

interactions with Vodacom which may provide some additional leverage. This confirms the bargaining framework approach to understanding outcomes in the wholesale markets.

- 26.3 However, the Commission found that the new agreements have roaming rates which are frequently above what we could reasonably expect of a wholesale rate when considered relative to the effective rates per GB in the retail market. This indicates that the so-called 'wholesale rate' is not wholesale in nature at all given its level relative to the retail rate. As challenger networks also price more aggressively to win business, it is not surprising therefore that the roaming rates are even higher relative to the effective price per GB on the challenger networks. Our analysis also suggests that effective rates are likely to continue dropping faster than the contracted roaming rates in future. The obvious implication is that this makes aggressive pricing costly for the challenger networks given the additional traffic will be costly relative to the revenue it earns.
27. A further area where wholesale markets have visibly failed is in providing wholesale network access for the purposes of retail competitors in the form of MVNOs. MVNOs have the potential to bring more competition on the retail aspect of the operations only given their reliance on a network provider. This can still be beneficial if they are more efficient than existing networks on the retail services, and even more so if the MVNO has its own core network and only requires access to the radio access network given it can then contest a greater portion of the operating margin. However, to be effective, MVNOs need competitive wholesale access to network providers. As outlined in the Provisional Report, this has simply not been the case in South Africa.
- 27.1 In effect, only one network - Cell C - historically emerged as a supplier of such services. While MTN has

recently provided wholesale access, this has largely been in the form of branded resellers. The two largest incumbents have had no incentive to offer such services as an MVNO is unlikely to capture customers which they themselves are not capable of capturing, whilst Telkom Mobile has not invested in the technical capabilities to offer such services. As a result, the bargaining dynamics do not favour MVNOs getting competitive wholesale access. They have limited viable options other than Cell C, and the Cell C network is not the lowest cost network in any event. As a result, MVNOs are simply not a material feature of the South African market and have remained niche operations designed to provide benefits to support the retention of other customer bases.

- 27.2 The wholesale open access network (WOAN) has therefore been touted as the solution to bring in more service-based competition. The ICT Policy White Paper and the Policy Directive on spectrum from the Department of Telecommunications and Postal Services (DTPS) promote the WOAN, and ICASA's Information Memorandum on spectrum proposes a set aside of spectrum for the WOAN. However, the future of any WOAN is still uncertain as it is still not apparent whether feasible applications will be received and if it will get up and running within a reasonable time frame, and even then whether it will be able to offer competitive rates is uncertain.

A lack of spectrum and cost-based facilities access drives up costs

28. It seems to be common cause that the failure to release high demand spectrum due to delays in digital migration has left mobile operators with both insufficient spectrum and a lack of access to favourable low frequency bands, raising costs unnecessarily. This is because operators need to compensate

for the lack of spectrum through increasing the volume of base stations, raising capital and operational costs. In a similar manner, different frequency bands have different propagation qualities which may impact on the extent of capital expenditure required to service demand in different areas. Low frequency bands are more favourable for less populated areas as fewer base stations are required to achieve coverage, but they are also better at providing indoor coverage even in dense urban areas. Digital migration should free up precisely these lower frequency bands.

29. It was within this context that the Provisional Report called for the urgent licensing of high demand spectrum. Subsequent to the Provisional Report, the Presidency has made it a priority, the Minister of Communications has issued the Policy Directive to ICASA in order to kick-start the process and ICASA has issued an Information Memorandum (IM) outlining possible assignment criteria. The Commission welcomes this development.
30. The Provisional Report also emphasised the need for a focus on a licensing arrangement which promotes affordability and access over revenue generation. To achieve this, the Provisional Report recommended potential pro-competitive assignments which may include spectrum caps on larger operators, asymmetric assignments in favour of smaller players and set asides for new entrants such as the WOAN, in a manner that ensures a prospect of commercial success. It also recommended the use of obligations such as reductions in prices to reflect cost reductions. The Policy Directive also seemed to heed these calls, providing scope for ICASA to incorporate universal access obligations within the licensing process, but also spectrum caps and WOAN set asides. The Commission welcomes these developments too.
31. The final part of the process is the ICASA decision on how to approach the spectrum assignment. The Commission engaged with ICASA on how to approach the IM following the Policy Directive. These submissions are included as an appendix to this report. The ICASA IM has incorporated a number of the recommendations from the Commission, including the imposition of cost-orientated facilities leasing on all licensees of high demand spectrum, the imposition of spectrum caps (albeit that the level is not determined yet), the imposition of social obligations (albeit not specified as yet), avoidance of too burdensome immediate coverage requirements initially to ensure challenger networks can also meet the targets, and regulation of aspects of the WOAN such as non-discrimination. The Commission welcomes these provisional requirements for spectrum licensing and will continue to engage ICASA as the process unfolds. However, ICASA still faces a number of challenges in implementing the IM.
 - 31.1 The first challenge for ICASA is the current financial woes of Cell C which could remove it as a potential bidder for the lots. The implication is that outside of the WOAN set aside, the IM would then effectively offer a relative guarantee of the same spectrum to each of the likely three bidders, with a fourth parcel of Time Division Duplex (TDD) spectrum to one of them. This will not change the market structure, nor will it facilitate competitive bidding outcomes. Addressing this challenge will require ICASA to be flexible in how the lots are determined based on market developments.
 - 31.2 The second challenge is implementing the WOAN assignment in a manner that secures a commercially viable consortium to make the WOAN a competitive force in the market, unless one of the current challenger networks seeks to secure that licence. The Commission engagements with ICASA have provided further recommendations in this regard.
 - 31.3 The final challenge is a policy one, namely of accelerating digital migration such that the spectrum becomes available for actual use.
32. Another large cost driver is that of passive infrastructure, such as base stations and high sites, but also ducts and poles for

fibre backhaul and of course last mile FTTH. The Commission is of the view that efforts to enhance facilities access and sharing can substantially reduce operating costs and ensure the rapid deployment of competing infrastructure, to the potential benefit of lower prices eventually. Indeed, operators have already engaged in mutually beneficial passive infrastructure sharing arrangements amongst each other in order to reduce operating or capital costs. There is also a legislative basis within the Electronic Communications Act (ECA) for regulating facilities access and ICASA has put in place such regulations.

33. However, despite this there remain persistent complaints around gaining access to facilities and doing so on fair commercial terms. In reality commercial models are typically successful where there is mutual benefit from bringing similar infrastructure to the table or agreement as to a mutual investment programme. Where there is inequity in passive infrastructure holdings between operators, there is often a resistance to infrastructure sharing by the incumbent holder of more infrastructure facilities. This is because a denial of access, or strategies that amount to a constructive denial, provides an incumbent with a competitive advantage over a newer rival and such strategic behaviour may also slow the expansion and competitive significance of the new rival. Whilst some operators argue that this may undermine the incentive to invest in new facilities, in reality the leadership position in facilities and other infrastructure is often a result of simply being a first-mover and historic restrictions on entry. This applies both to operators such as Vodacom in mobile facilities, but equally to operators such as Telkom in fixed line facilities.
34. The critique of current regulations is that they fail to address strategic behaviour by incumbents with a hold over a high proportion of facilities, namely that the regulations fail to adequately deal with spurious claims that sharing is technically infeasible (e.g. on base stations) and also do not regulate the price at which sharing

takes place, resulting in cost escalation. For instance, whilst ICASA has confirmed that Telkom's ducts and poles are covered by the facilities leasing arrangements, there appears to be no access to these whatsoever provided to other operators. A further critique is that it is only the facilities of licensed operators that ICASA's regulations cover, and they exclude the poles and infrastructure of municipalities, and the independent tower companies.

35. The Amendment Bill in respect of the ECA seemed to plan on tackling this regulatory vacuum prior to its withdrawal from parliament. In particular, it sought to institute cost-orientated pricing for facilities under a broader wholesale open access regime, the regulatory rules to which ICASA would put in place within 18 months of the Amendment coming into law. However, the withdrawal of the Amendment Bill has left a vacuum in terms of how this will be dealt with going forward. ICASA appears reluctant to determine essential facilities regulations as they argue it provides no guarantee of more rapid access, but there also seems to be little appetite for cost-orientated price regulation of facilities which may require essential facilities being determined.

Addressing the fixed line supply gap for alternative data services

36. The overwhelming focus of initial submissions made to the Commission focused on mobile data services, which is unsurprising given that mobile data coverage is effectively universal and it is the primary means through which most consumers get data services. There were limited submissions on fixed line and alternative infrastructure for delivering data services. Despite this, the Provisional Report highlighted the role of alternative infrastructures for data, including fixed line supply, and the potential role it can play in reducing data prices more generally and to poorer consumers more specifically.
37. A reason for the interest by the Commission is that fixed line supply remains the backbone in the supply of not just household and

- business access, but also public data services such as public Wi-Fi or even community networks. These represent alternative sources of data services, and therefore have the potential to provide cheaper (or even free) data services at different geographic places and/or different points in the day to consumers. This is in part because that infrastructure is frequently cheaper for large data volumes given costs are largely fixed and sunk. There are also FTTH providers which are experimenting with business models for lower income areas.
38. Cheaper prices are important in themselves, but the Commission is also of the view that this infrastructure can be an alternative source of competitive pressure on mobile data services to bring those prices down. This is largely because fixed line services are typically provided through Wi-Fi at the point of use, and hence available for smartphones to connect to. However, such competitive pressure is only likely to occur if these services are far more pervasive (to give more opportunity for off-load), and if they also have reach into poorer communities which currently have no options outside of mobile and are being exploited as a result.
 39. The Commission is of the view that one cannot focus exclusively on trying to fix mobile competition as a solution to high data prices. Insufficient competition amongst mobile operators has been a persistent concern for decades, proving difficult to change effectively through interventions and also dependent on competitor firm performance. The Commission therefore considers that efforts to extend the reach of alternative infrastructure such as fixed line or fixed wireless into poorer areas, even if only in the form of public Wi-Fi, remains an important solution to high data prices now and in the future.
 40. The Provisional Report highlighted some of the commercial barriers to extending such infrastructure to lower income areas. These included the lack of legacy infrastructure in those areas due to the inequity of apartheid service delivery, the high fixed cost nature of providing the service which in turn requires a large fixed monthly revenue model that is ill-suited to poorer households, and lastly the need for high demand for data intensive services along with data-ready devices to make the greater capacity valuable to the homeowner. In addition, submissions highlighted the potential impediment of IP Connect pricing by Telkom Openseve in areas where infrastructure already existed, or future Telkom Openseve rollout areas.
 41. As a result of the Provisional Report's focus, the Commission received more extensive submissions on this alternative infrastructure. The team also actively engaged various stakeholders on their views around the possibilities of developing this infrastructure and the provision of free Wi-Fi. The team also engaged Telkom Openseve on its IP Connect pricing.
 42. In terms of IP Connect, the evidence indicates that there is indeed a *prima facie* case of excessive pricing against Telkom Openseve. In particular:
 - 42.1 FTTH (and previously ADSL) rollout requires a high fixed investment to pass households in an area and the need for at least 40% of those households to take up the service for it to break even. For this reason, there tends to be localised monopolies. The FTTH provider is also an infrastructure provider, and therefore sells the service wholesale to an Internet Service Provider (ISP) which in turn contracts the household for Internet access, adding its own component in the process. The only apparent constraint on this local FTTH wholesale pricing is the need to sign up a high proportion of the houses in the neighbourhood which requires ensuring pricing is attractive.
 - 42.2 However, these localised monopolies still need to get the traffic from the local area to one of the major data centres where it can be passed to the contracting ISP. Most FTTH providers are not vertically integrated and make use of third party open access infrastructure such as Dark Fibre Africa. However, for areas covered by Telkom Openseve, it only provides the option of using the IP Connect product to move the

traffic to the handover points. The local monopoly therefore extends to the backhaul part of the network too.

- 42.3 The Commission team requested Telkom Openserve to provide the costs of providing the IP Connect service. Applying the price-cost mark-up assessment used in excessive pricing investigations, the results for the 2018 financial year as calculated by FTI Consulting on behalf of Telkom were positive and significant. Given Telkom Openserve has benefited from prior state investment and a licensed monopoly position, the Commission is of the view that a *prima facie* case of excessive pricing exists for this level of mark-up. This conclusion is strengthened by the fact that prices for the service have been coming down over time, indicating that mark-ups viewed over a longer period would be found to be even higher.
43. In terms of FTTH infrastructure rollout into lower income areas, the Commission found that there is considerably more backhaul infrastructure that passes low-income areas than initially anticipated. This is further promoted by Broadband Infraco's (BBI) initiative to roll out infrastructure to over 6000 government sites in eight underserved districts in line with its mandate under the SA Connect policy. The impediment at least in urban areas is therefore more around the actual last mile FTTH rollout. Whilst some commercial activity is starting to occur, it faces several key challenges, including:
- 43.1 The pricing, processing and practice of attaching certain conditions to wayleave applications by municipalities can make the deployment of infrastructure economically unfeasible. It seems that many municipalities see this as a form of revenue generation and impose unreasonably high prices for wayleaves (or impose conditions) whilst others are incapable of processing them expeditiously. In some areas this is further complicated by business forums which seek to extract the 30% set aside for local historically disadvantaged businesses.
- 43.2 Identifying revenue models that enable the commercial success of a venture with high fixed costs, without relying on the usual revenue model of high fixed monthly fees is a key challenge. Different operators are experimenting with different models, but until there is a commercial model that works then scalable rollout in low-income areas will remain unlikely. Naturally, that commercial model is made less complicated if the high investment costs can be reduced.
44. In terms of the provision of alternative Wi-Fi and local wireless data network services to lower income and rural communities, the Commission uncovered a host of interesting initiatives which are documented in the report. These include successful free Wi-Fi programmes such as in the City of Tshwane, local Wi-Fi community projects such as Zenzeleni in Mankosi in the Eastern Cape, which provides uncapped Wi-Fi services to a community of around 6,000 people at R25/month, and Wireless Internet Service Providers (WISPs) such as Herotel connecting smaller towns and wealthier rural farming towns using Wi-Fi spectrum for microwave backhaul. In addition, there are increasingly initiatives by online companies such as Google and Facebook to experiment with services in lower income areas.
45. These initiatives provide a number of useful insights into the use of alternative infrastructure in providing data services to rural areas, including:
- 45.1 The range of initiatives indicated that it is possible to provide cheaper data services using alternative infrastructure to that of mobile or FTTH in lower income and rural areas. However, what is needed often is a scalable model that can move beyond one community or municipality.
- 45.2 Data services, unlike voice services where coverage and interconnection is paramount, do not require a national network in order to provide a useful service to the community. Data services simply need to access a backhaul

service to move traffic to an ISP, which in turn provides the peering link to access the entire Internet. This means that driving these forward need not be done through a large national champion, but can be localised in nature (including municipal-based).

- 45.3 The BBI initiative also highlights the fact that government demand can not only bring broadband infrastructure into underserved areas, but also can then be a point for the provision of free Wi-Fi to the local communities in those areas. There is also demand for such services where it can be feasibly rolled out.
- 45.4 The Commission also identified that frequently in rural areas the mobile spectrum is not utilised by an operator due to either existing roaming arrangements on another operator or that the coverage requirements were met by the low frequency spectrum alone. However, this spectrum would be even more cost-effective to provide a local data service than Wi-Fi given the broader coverage and the lower costs of not trying to provide mobility or other mobile services. However, the Commission received submissions that operators were unwilling to provide access to this spectrum.

FINAL RECOMMENDATIONS

46. The Commission has identified a final package of recommendations that provide immediate relief to high data prices, especially for low-income consumers, combined with initiatives to improve mobile price competition and greater infrastructure alternatives to consumers over the medium term. The full implementation of this package of remedies will not only lower prices for all consumers, and particularly the poor, but will lead to greater economic and social inclusion moving forward as the country moves into the digital age. The full implementation of the package of remedies is also essential to provide the necessary building blocks for South Africa to participate fully in the Fourth Industrial Revolution and

take advantage of the opportunities that revolution presents. Participation in the future digital economy requires low data prices to support a broader consumer and industrial demand required to make digital platforms and solutions commercially viable. It also requires competitive mobile and fibre infrastructure markets to ensure prices remain low as investment and development of new technologies, such as 5G, are rolled out.

47. Note that where we refer to DTSP, this should also be interpreted as also referring to its future successor, the Department of Communications and Digital Technologies, once the merger with the Department of Communications is completed.

Immediate relief on data pricing

48. Access to affordable data is of paramount importance for economic and social inclusion and thus mobile pricing must be addressed. The programme for immediate relief on mobile data pricing includes the following recommendations on the **level and structure of pricing**:
- 48.1 Notwithstanding the most recent price reductions, Vodacom and MTN must independently reach agreement with the Commission on substantial and immediate reductions on tariff levels, especially prepaid monthly bundles, within two months of the release of the report. The preliminary evidence suggests that there is scope for price reductions in the region of 30% to 50%.
- 48.2 Vodacom and MTN must independently reach agreement with the Commission within two months on a reduction in the headline prices of all sub-500MB 30-day prepaid data bundles to reflect the same cost per MB as the 500MB 30-day bundle, or cost-based differences where such cost differences have been quantified, as well as the cessation of partitioning strategies that contribute to anti-poor pricing and/or inferior service outcomes. Given their collective market position, adjustments to their prices should impact on market-wide pricing.

- 48.3 Vodacom and MTN must independently reach agreement with the Commission to cease ongoing partitioning and price discrimination strategies that may facilitate greater exploitation of market power and anti-poor pricing.
- 48.4 All mobile operators must reach agreement with the Commission within three months to offer all prepaid subscribers a lifeline package of daily free data to ensure all citizens have data access on a continual basis, regardless of income levels. This agreement must then be given formal legislative or regulatory effect within six months. This may include the ICASA End-User and Subscriber Charter Regulations, spectrum licensing conditions or planned amendments to the ECA. The precise level of lifeline data and any annual adjustments should be determined in consultation with industry, ICASA and relevant experts. The Commission is of the view that it should be sufficient to ensure each citizen's participation in the online economy and society.
- 48.5 All mobile operators must reach agreement with the Commission within three months on a consistent industry-wide approach to the zero-rating of content from public benefit organisations and educational institutions to ensure broad application. This agreement should then be given formal regulatory status through the ICASA End-User and Subscriber Service Charter within six months of the report. The starting point for such a list of zero-rated sites should be the existing collective list of zero-rated content in this category from all operators, but that process should seek to establish clear principles and criteria to be applied as well as an application process for those Public Benefit Organisations (PBOs) and educational institutions that seek zero-rating. These criteria should expressly include greater zero-rated access to content in African languages.
- 48.6 All mobile operators must reach agreement with the Commission within three months to inform each subscriber, on a monthly basis, of the effective price for all data consumed by the customer. This agreement should be given formal regulatory status in the ICASA End-User and Subscriber Service Charter within six months of this report.
- 48.7 Telkom Openserve must reach agreement with the Commission on substantial reductions in the price of IP Connect to remove excessive pricing concerns within two months.
49. With respect to the above recommendations on the level and structure of pricing, should an operator fail to reach the required agreements with the Commission within the specified timeframes, the Commission will proceed to prosecution under the appropriate sections of the Act. The Commission will also institute ongoing monitoring of pricing levels and profitability into the future until the market becomes more competitive.
50. The other aspect to more immediate relief concerns the assignment of high demand spectrum. In this respect the process has moved in parallel with the Commission. The recommendations in the Provisional Report to accelerate the process and focus on affordable access rather than revenue generation have been acted upon by DTSP in its release of the Policy Directive. The Commission made further submissions to ICASA on how to approach assignment in the context of the Policy Directive, most of which have also been acted upon and reflected in the Information Memorandum. These are all welcome developments.
51. The Commission will continue to engage with the ICASA spectrum assignment process in line with the principles contained in the submissions on the IM process. These include:
- 51.1 In the licensing of the WOAN, to ensure a commercially viable consortium secures the license, to ensure it has cost-orientated access to facilities and

national roaming, to provide a spectrum fee holiday, and to build in appropriate regulatory oversight which includes at a minimum non-discrimination, but potentially more if an existing operator is licensed.

- 51.2 In the licensing of the remaining spectrum, to ensure imposition of spectrum caps on the two largest operators, to ensure wholesale open access at cost-orientated prices to their facilities, to ensure social obligations including a lifeline data package to all South Africans, and to ensure any cost reductions are passed through to price reductions.

Intermediate programme to enhance price-based competition

52. The intermediate programme is focused on enhancing price-based mobile competition through wholesale market interventions and promoting the development of alternative infrastructure to provide data services in lower income areas and smaller secondary cities and towns nationally.
53. In terms of **enhancing price-based competition** in the mobile industry, the Commission recommends the following action at the wholesale level of the industry to improve the terms of wholesale access and reduce infrastructure costs.
- 53.1 Legislative changes must be made to facilitate cost-based access to facilities. Such legislative changes should set pricing standards for different types of facilities, such as cost plus a fair return for essential facilities but a less stringent standard for non-essential facilities. The Commission also recommends that ICASA undertake the process of defining essential facilities as a basis for regulating such facilities at cost plus a fair return. The objective would be to have legislation and regulations in place within the next eighteen months.
- 53.2 Vodacom and MTN must reach agreement with the Commission within six months to ensure that their national

roaming agreements with other networks are priced, at a minimum, at wholesale rates which reflect a reasonable discount on their own effective retail rates as measured by the average revenue per GB, with provision for annual downward revisions to reflect reductions in their own effective retail rates over time. If no such agreement is reached, the Commission will proceed to prosecution in respect of excessive pricing and/or exclusionary conduct. Ultimately the minimum pricing standards for national roaming should be incorporated into the amendments to legislation with powers for ICASA to regulate roaming agreements.

- 53.3 With respect to MVNOs, all mobile operators must reach agreement with the Commission to ensure that the wholesale rate reflects a discount on the prevailing effective retail rate. If no such agreement is reached, the Commission will consider prosecution. Ultimately the minimum pricing standards for MVNOs and wholesale access should be incorporated into the amendments to legislation with powers for ICASA to regulate such agreements.
- 53.4 Vodacom and MTN must reach agreement with the Commission to institute accounting separation for their wholesale network infrastructure, including the radio access network (RAN) and core network within the next year. In addition, the Commission also recommends that ICASA re-institutes the regulatory accounting reporting requirements for Vodacom, MTN and Telkom Openserve within the next six months.
54. The Commission also recommends DTPS immediately start the process of policy and legislative reforms to incorporate the legislative changes identified above, support the ongoing regulatory function of ICASA as well as the rapid rollout of infrastructure. This should occur through a process of amendments to the ECA which had already been initiated by DTPS prior to

the last national election. An amendment to the ECA should be fast-tracked over the next twelve months and, in addition to other contemplated changes, the Commission recommends that the amendments incorporate the following changes:

- 54.1 A complete review of section 67 of the ECA to ensure that the preconditions for regulatory action are proportionate to the type of regulatory action and that ICASA can regulate on the basis of findings by the Commission, other relevant regulators or courts;
 - 54.2 Provide for the regulation of national roaming and MVNO agreements by ICASA;
 - 54.3 Provide clear principles for access and price regulation for the leasing of different types of facilities; and
 - 54.4 Progress the rapid infrastructure deployment strategy contained in the previous ECA Amendment Bill. These should facilitate greater ease in acquiring wayleaves and the use of municipal infrastructure such as poles for aerial deployment. These legislative changes should also incorporate appropriate restrictions on municipal charges and conditions for granting such wayleaves.
55. The **development of alternative infrastructure** to provide data services in lower income areas and smaller secondary cities and towns nationally will provide off-load opportunities from the mobile networks to free public Wi-Fi or even simply lower priced subscription Wi-Fi services. It will also provide an additional point of competitive pressure on mobile prices if there is a more pervasive presence. Whilst this is naturally occurring in wealthier areas, there are barriers to investment in poorer areas. The Commission recommends the following:
- 55.1 That national government consider providing investment incentives to FTTH providers for network rollout in low-income areas. These may take the form of tax breaks or financial support from the Universal Service and Access Agency of South Africa (USASA) based on competitive bidding around the least subsidy required. Government should also consider complementing these initiatives with contracts to provide services to government buildings in the vicinity to add base demand for any infrastructure provider. Such contracts may also be linked to rollout commitments.
 - 55.2 That government at all levels actively promote the development of free public Wi-Fi in low-income areas, including government buildings, commuter points (e.g. train stations, taxi ranks) and public spaces (e.g. parks, shopping areas, government service offices) as well as the creation and entry of community networks. The ultimate objective should be for each municipality to provide free and affordable Wi-Fi services in such public areas within the boundaries of the municipality
 - 55.3 That ICASA consider models and regulatory changes to allow at least non-profit community networks, and possibly small commercial enterprises to access licensed spectrum not used by mobile operators in rural areas in a similar manner to television white space.
 - 55.4 That a single government department or agency be designated as responsible for driving these initiatives across the different departments and levels of government. That department or agency should establish a technical or advisory committee of experts to assist it in capacity-building, advising and growing both the more urban Wi-Fi projects and the community networks envisaged above.

1. INTRODUCTION

56. The Data Services Market Inquiry (“the Inquiry”) was initiated by the Competition Commission (“the Commission”) in terms of Section 43B(2) of the Competition Act No. 89 of 1998 (as amended) (“the Act”) in August 2017. The initiation of the Inquiry followed concerns expressed by the Minister of Economic Development (“the Minister”) about the high level of data prices and the importance of data affordability for the South African economy and consumers¹. Having considered the request of the Minister, the Commission initiated the market inquiry as *“it has reason to believe that there are features of the sector that prevent, distort or restrict competition within the sector, and/or to achieve the purposes of the Act.”*²
57. A “market inquiry” is defined by the Act as *“a formal inquiry in respect of the general state of competition in a market for particular goods or services, without necessarily referring to the conduct or activities of any particular names firm”*³. Thus, the Inquiry in this instance considers the market for data services, but is not limited to any specific firm or conduct.
58. The overall objective of the Inquiry, as defined by the Terms of Reference released on 18 August 2017⁴, is to understand the cause of high data prices in South Africa and make recommendations to address pricing. Recommendations may include both recommendations for changes to legislation and regulatory changes.
59. Data is becoming a more important part of the telecommunications industry and the lives of people in South Africa. Access to affordable data services is key for the economic inclusion of individuals and small businesses alike. When considering the changing environment and the future impact of the fourth industrial revolution, addressing the affordability of data becomes critical.
60. Following a formal Call for Submissions published on 20 September 2017⁵, and public hearings held from 17 to 19 October 2018, the provisional findings and recommendations report for the Inquiry (“Provisional Report”) was released for further comment on 24 April 2019. It contains further relevant details on the background to the Inquiry and other aspects to the extent that the reader wishes to understand further the context for this report.
61. Following the release of the Provisional Report, the Commission received a number of submissions⁶. The Commission has reviewed every submission in detail and

1 Government Gazette No. 41054, 18 August 2017, para. 2.3 (available on: <http://www.compcom.co.za/data-market-inquiry/>)

2 Government Gazette No. 41054, 18 August 2017, para. 2.3

3 Competition Act of South Africa, Section 43A

4 Government Gazette No. 41054, 18 August 2017

5 Competition Commission Data Services Market Inquiry, Call for Submissions, 20 September 2017 (available on: <http://www.compcom.co.za/data-market-inquiry/>)

6 The Commissions received submissions from 16 stakeholders: ICASA; Vodacom; MTN; Telkom; Cell C; Broadband Infraco; MWEB; Afrihost; Research ICT Africa; amandla.mobi; Right2know; SOS Coalition; MMA; DG Murray Trust; Walter Brown; Ewan Sutherland

- consulted further with stakeholders where required. The Commission has also held a number of further consultations on certain aspects identified in the Provisional Report⁷.
62. Based on this, the Commission has considered whether and to what extent each of its findings and recommendations from the Provisional Report should change, and how so. This report represents the **final findings and recommendations for the Inquiry**. Thus this report represents the completion of the Inquiry in terms of Section 43B(6) read with Section 43C.
63. This report sets this out, and is structured as follows:
- 63.1 Firstly, we present a broad overview of the provision of data services in South Africa, considering the supply and use of data services, the value chain, the broad economic principles that one needs to consider and be aware of, and the policy, legislative and regulatory environment in which our recommendations would exist.
 - 63.2 Secondly, we consider submissions regarding our findings with respect to the international price comparisons and the level of prices in the Provisional Report.
 - 63.3 Thirdly, we consider further submissions and information gathered regarding our provisional findings that the level of retail competition in the market is insufficient and could be improved.
 - 63.4 Fourthly, we consider the submissions around the key aspect of the structure of pricing and the extent to which pricing practices can be described as ‘anti-poor’ as found in the Provisional Report as well as related submissions dealing with the pricing of devices and the economic importance of data.
 - 63.5 Fifthly, we consider submissions around the issue of key cost drivers for data prices, including both the availability and assignment of spectrum and the nature and terms of facilities access.
 - 63.6 Sixthly, we consider the submissions around the level and importance of competition at the wholesale level of the market, focusing specifically on MVNOs and roaming contracts between operators.
 - 63.7 Seventhly, we consider submissions regarding our findings on the fixed line supply gap in data services as well as the additional areas of analysis identified in the Provisional Report.
 - 63.8 Finally, we consider submissions on our provisional recommendations, and conclude on our final recommendations.

⁷ This included the recommendations regarding alternative infrastructure as well as the IP Connect product of Openserve

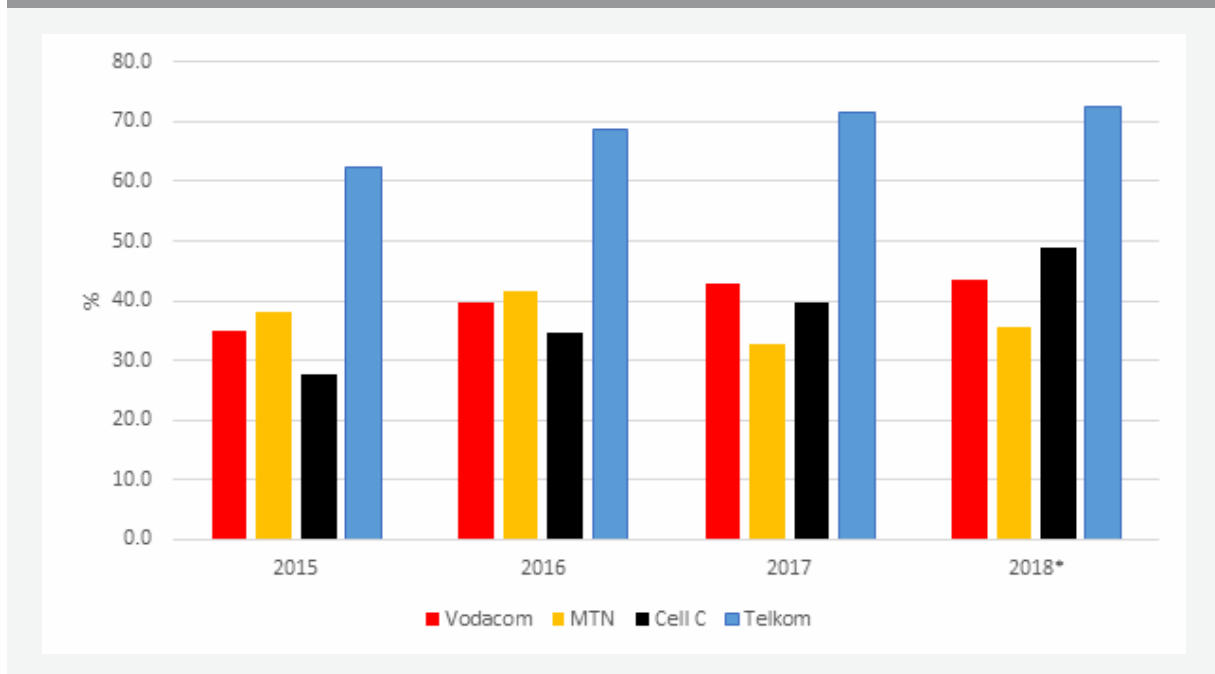
2. OVERVIEW OF THE PROVISION OF DATA SERVICES

64. Data refers to the transmission of information in a digital format where volumes are measured in units such as Gigabytes (GB) and Megabytes (MB). Data allows consumers to access content on the internet, use Over-the-Top services, communicate via email, and stream or download videos and other content amongst other activities. Data services refers to the provision of such data to consumers whether business or residential, on fixed lines such as fibre or asymmetric digital subscriber line (ADSL)⁸ or via mobile technology. Data services

are increasingly being used in machine-to-machine communications in what is called the Internet of things (IoT), which is one of the foundations to the fourth industrial revolution (4IR). Data pricing will similarly impact on this development in South Africa.

65. Data is becoming a more important part of the telecommunications industry and mobile telecommunications in particular. This is reflected in the following figure which shows the percentage of mobile service revenue (voice, short message services (SMS) and data together) that is accounted for by data

Figure 7: Data contribution to operator service revenue (2015-2018*)



Source: Operators' Annual Financial Statements, Integrated Reports, Financial statements and Results presentations.
Notes: Results for Vodacom and Telkom as per financial year, where the 2018 data is updated as per 31 March 2019. For MTN and Cell C, data is reported as at 31 December for each respective year.

8 Government Gazette Notice No. 42597, 26 July 2019, para. 2.1.5

as per Mobile Network Operators' (MNOs)⁹ financial statements and results. It shows that the proportion of revenue accounted for by data has generally been increasing and in some cases data accounts for the majority of service revenue.

2.1 SUPPLY, ACCESS AND USE OF DATA SERVICES

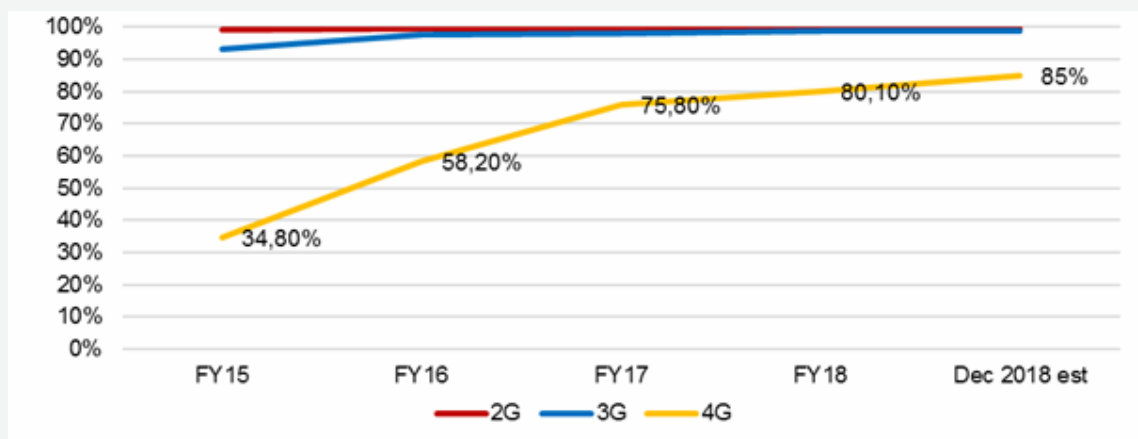
66. Since their launch in the early 1990s, mobile networks have grown to become the main vehicle for internet access in the country. Mobile coverage in South Africa is almost universal.

66.1 Technically, almost everyone in South Africa is able to access mobile communication services. As illustrated in Figure 8 below, almost 100% of the population fell within Vodacom's second generation (2G) and third generation (3G) networks (systems) as at the end of 2018. Coverage of the fourth-generation networks (4G), also known as the Long-

Term Evolution (LTE) was estimated at 85%.¹⁰ MTN also covered almost 100% of the population with its 2G and 3G networks¹¹ while in October 2019, 4G coverage reached 95% of the country's population.¹² LTE, or 4G, coverage is also expected to be well over 90% for Vodacom currently. Although Cell C and Telkom Mobile do not have national coverage with their own networks, they are able to offer nation-wide coverage through roaming on the networks of Vodacom and/or MTN.

66.2 However, coverage does not automatically translate to access, as consumers still need to afford the devices to access the network and affordable data prices to translate this into demand. In order for end-users to access data services they need 'smartphones' which are capable of gaining access to data services and the internet. It is reported that 20.4 million people used smartphones in South Africa in 2018, representing roughly

Figure 8: Vodacom national coverage by technology layer (Jan 2015-Dec 2018)



Source: Vodacom's slide presentation for the public hearings, slide 6¹³

9 Government Gazette Notice No. 42597, 26 July 2019, para. 2.1.5

10 Vodacom's estimate during the proceedings of the public hearings held on 17-19 October 2018. See Day 2 transcripts, p.16, line 21-22

11 MTN's submission dated 18 October 2018 (Non-Confidential)

12 MyBroadband (10 October 2019) MTN reaches 95% 4G coverage in South Africa. Available at: <https://mybroadband.co.za/news/telecoms/322842-mtn-reaches-95-4g-coverage-in-south-africa.html>

13 The figure of 85% in December 2018 was estimated by Vodacom during the course of the public hearing. See Day 2 transcripts, p.10, line 4-5, and p.16, line 21-22

36% of the population¹⁴. According to the Independent Communications Authority of South Africa (ICASA)'s latest State of ICT Sector report, smartphone penetration in the country increased from 43.5% in 2016 to 81.7% in 2018.¹⁵ Internet usage figures nationally show that 56.9% (39.6% in rural areas) of households in the country use mobile phones to access the internet.¹⁶ Low access levels despite universal mobile coverage are also discernible in subscription figures.

- 66.3 Thus while almost all South Africans fall within the coverage of the largest networks, and the vast majority of South Africa access mobile telecommunications services, the level of access to data services on mobile platforms is relatively limited. This is likely for two reasons, a lack of access to smartphones (probably due to low-income levels), and a lack of affordability with respect to data prices. Given the extensive supply in terms of coverage by the operators, it is clear that there is a demand gap for mobile data services.
67. In contrast, fixed line supply is extremely limited, with approximately 7.5 million subscriptions at the retail level in 2018.¹⁷
- 67.1 Total fixed broadband subscriptions spiked from just over 3 million in 2017 to over 7.5 million in 2018. This increase was driven by the jump in ADSL and fibre-to-the-premises (FTTP). According to the 2017 General Household Survey, only 10.6% of South African households had access to the Internet at home. At

a provincial level, Western Cape (25.7%) and Gauteng (16.5%) had the highest percentage of households who have access to the internet at home. For the two predominately rural provinces, Limpopo and Eastern Cape, access to the internet at home was 2.2% and 3.5% respectively. The spike in the number of subscriptions, mainly driven by fibre deployments in more affluent urban areas, means that fixed line access has increased.

- 67.2 Fibre has been quick to challenge ADSL as the major means of fixed line access but despite the accelerated growth in fibre rollout, penetration remains low. Fibre grew from 3% of total fixed-line subscriptions in 2015 to 9% in 2017.¹⁸ This grew to more than 20% in 2018¹⁹. It is understood that the increased penetration of fixed infrastructure is skewed towards urban areas.^{20 21}
- 67.3 Other forms of fixed internet connection available to end-users include free Wi-Fi at public hotspots and public facilities such as schools and libraries. People who are employed may also get access to broadband Internet and Wi-Fi at their workplace. Internet cafes are also another platform for internet access for people who are willing to and able to purchase these services. Some restaurants also provide free-public Wi-Fi to their patrons. Fixed line access through these platforms remains extremely limited and skewed towards wealthier urban areas.²²

14 Statista (2019) Number of smartphone users in South Africa from 2014 to 2023 (in millions)* [Online]. Available at: <https://www.statista.com/statistics/488376/forecast-of-smartphone-users-in-south-africa/>. [Accessed on 17 March 2019]

15 ICASA (31 March 2018) 3rd report on the state of the ICT sector in South Africa. [Online], Available at: <https://www.icasa.org.za/uploads/files/State-of-ICT-Sector-Report-March-2018.pdf>. [Last viewed on 18 March 2018]

16 Statistics South Africa (21 June 2018) General Household Survey 2017. [Online]. Available at: <http://www.statssa.gov.za/publications/P0318/P03182017.pdf>. [Accessed on 17 March 2018]

17 ICASA (28 March 2019) The state of ICT sector report in South Africa. See page 33

18 ICASA's (26 March 2018). The state of ICT sector in South Africa. See graph 21

19 ICASA (28 March 2019) The state of ICT sector report in South Africa. See page 33

20 DTSP's presentation at the public hearings held on 17-19 October 2018. See Day 3 transcripts, p.81; line 3-4

21 Internet Solutions' presentation at the public hearings held on 17-19 October 2018. See day 3 transcripts, p.31; line 16-18

22 Statistics South Africa (21 June 2018) General Household Survey 2017. [Online]. Available at: <http://www.statssa.gov.za/publications/P0318/P03182017.pdf>. [Accessed on 17 March 2018]

2.2 THE VALUE CHAIN

68. Figure 9 below depicts the structure of the South African telecommunications industry in the form of a value chain. As shown in the figure, there are three broad layers in the telecommunications value chain and therefore also the provision of retail data services, namely the infrastructure layer, the wholesale layer and the retail layer.

68.1 **Infrastructure layer.** The upstream layer comprises the network infrastructure owned by network operators. The networks of various operators are interconnected, allowing users of one network to access content from, or to communicate with, users of other networks. The infrastructure starts with international fibre infrastructure, wherein submarine fibre cables connect different countries and continents. These cables land at landing stations located in coastal areas. These are then connected to national fibre infrastructure which connects major population centres such as cities and towns. Metropolitan fibre networks then provide connection between local sites within major population areas. The ultimate connection between users and the network infrastructure, known as local or last mile connectivity, may either be by fixed or wireless means. Communication services, namely voice, SMS and data run in the network infrastructure.

68.2 **Wholesale layer.** The middle layer comprises the wholesale of network services. This refers to network access granted to service providers who do not own any network infrastructure or have limited network infrastructure. Mobile operators in South Africa are vertically integrated and do not typically separate their wholesale and retail services. However, operators such as Cell C and Telkom Mobile, who

have limited geographical coverage, acquire roaming services from larger operators such as Vodacom and MTN at wholesale terms. Other ways in which mobile wholesale services are provided include Mobile Virtual Network (MVNO) access, reverse billed APN (Access Point Network) and potentially radio access network (RAN) sharing.²³ Fixed line operators provide internet services providers (ISPs) with access to the fixed networks to enable them to sell communication services to end-users by means of copper, ADSL, or fibre.

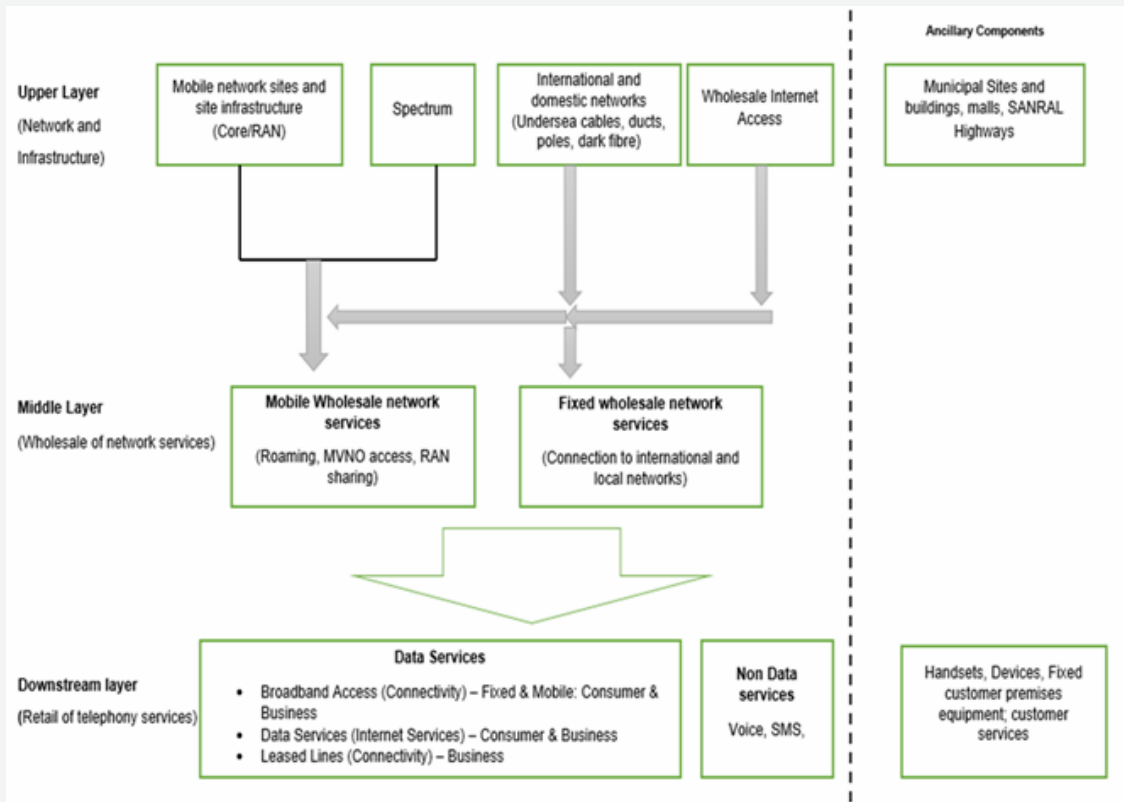
68.3 **Retail layer.** The downstream (retail) layer deals with the retail of communication services to consumers or businesses. The mobile operators are vertically integrated, and they sell communications services directly to end-users. MVNOs, through the networks of their hosts, also sell mobile communication services to end-users. Fixed line services are provided to end-users (both enterprise and residential customers) through copper and fibre.

69. In conducting a market inquiry, the Commission has no requirement to engage in a formal market definition assessment such as that required in order to assess a firm's dominance under Section 7 of the Act. In identifying markets, the Commission recognises that the ICASA recently engaged in an extensive Priority Markets Inquiry in which it sought to determine the broad markets within the value chain and engaged operators extensively for input in this regard.²⁴ The Commission has no reason to differ with ICASA's conclusions, especially as few differences existed between ICASA and operators in any event. We reflect below the broad markets within the value chain relevant to the provision of both mobile and fixed data services.

23 Sharing of active elements of the RAN is not permitted by the current regulatory framework in South Africa. See ICASA's findings document, p.19

24 ICASA Priority Markets Discussion Document, p.ii, paragraph 2

Figure 9: Telecommunications sector Value Chain



Source: Own construction partially based on submissions from Telkom, MTN, Vodacom, and the Electronic Communications Network (ECN)

69.1 In terms of mobile data the following markets play a role in the ultimate retail pricing observed:

- 69.1.1 Retail market R1 - Retail supply of mobile services,
- 69.1.2 Wholesale market W1 - Wholesale supply of mobile termination services,
- 69.1.3 New wholesale market W3 - Wholesale supply of mobile services, which includes MVNO access, national roaming, passive RAN sharing and active RAN sharing,
- 69.1.4 Upstream market U2 - National Transmission services,
- 69.1.5 Upstream market U3 - Metropolitan connectivity,
- 69.1.6 Upstream market U4 - Fixed access services.

69.2 In terms of fixed data the following markets play a role in the ultimate retail pricing observed:

- 69.2.1 Retail market R3 - Retail supply of access to the internet from fixed connections,
- 69.2.2 Wholesale market W6 - Wholesale supply of asymmetric broadband origination,
- 69.2.3 Wholesale market W7 - Wholesale supply of internet connectivity,
- 69.2.4 Upstream market U2 - National Transmission services,
- 69.2.5 Upstream market U3 - Metropolitan connectivity, and
- 69.2.6 Upstream market U4 - Fixed access services.

70. Appendix A of the Provisional Report provides a detailed description of the telecommunications services value chain and the identification of markets by ICASA. To the extent that any differences in views between ICASA and other stakeholders are relevant, or to the extent that we identify or assess narrower markets within the broader definitions of ICASA, these aspects are addressed at the relevant point.

2.3 BROAD ECONOMIC CHARACTERISTICS OF TELECOMMUNICATIONS SERVICES

71. The telecommunications market has become a major facilitator of economic growth and participation, where countries strive for competitive outcomes in the market so as to maximise the potential for lower prices, expanded services and increased innovation.²⁵ This section serves to provide a broad overview of the economic characteristics in telecommunications markets as well as the main competition issues that typically arise in these markets as a result of its characteristics.

72. Historically, telecommunications markets were treated as natural monopolies in which the state-owned enterprises (“SOEs”) were regulated as public utilities and received state support through regulation which enabled their monopoly status.²⁶ It is generally advantageous to have an early presence in a market, setting oneself up as an incumbent with an established customer base. A first mover advantage could thereby also impose switching costs on consumers or alternate suppliers as they would incur costs

related to number porting and fixed contract terms. The majority of economic studies find empirical support for the existence of first mover advantages which enable pioneering firms to set prices above competitive levels and thus gain excessive profits.

73. There exists both economies of scope and scale in telecommunications markets as the high fixed costs can be split across different products and increased volumes of any given product. High barriers to entry and expansion are observed due to a number of market factors including high (and sunk) fixed costs, regulation, strategic behaviour by incumbents, and sticky switching behaviour²⁷ which can prevent a market from achieving competitive outcomes.²⁸ Economies of scale increase barriers to entry and expansion as potential entrants or smaller competitors need to attract sufficient scale in order to reduce average unit costs and be competitive with the incumbent operator.

74. Telecommunications markets have traditionally been dominated by firms that are vertically integrated, where these firms are involved in more than one stage of value chain (e.g. the upstream and the downstream), further limiting the scope for competition and entry.²⁹ At the various levels of the value chain, there also exist important operational interdependencies between firms and competitors. The provision of an operator’s voice service, for example, is reliant on other operators’ services such as roaming and access to infrastructure. Network effects are also characteristic of telecommunications markets where *“the value of a service to an individual customer depends on the number of other customers who use the service”*³⁰.

25 CCRED (2016) Competition, barriers to entry and inclusive growth: Telecommunications Sector Study. Working paper 2/2016 p. 1
 26 However, state ownership of the fixed line incumbent limits the independence of markets regulation, see Waverman, L., & Koutrompis, P. (2011) Benchmarking Telecommunications Regulation, Telecommunications, Policy, 35
 27 Jamison, M. (2012) Methods for Increasing Competition in Telecommunications Markets. Public Utility Research Center, University of Florida
 28 Jamison, M. (2012) Methods for Increasing Competition in Telecommunications Markets. Public Utility Research Center, University of Florida; Mondliwa, P (2016) Barriers to entry in telecoms. CCRED Policy Brief
 29 Jamison, M. (2012) Methods for Increasing Competition in Telecommunications Markets. Public Utility Research Center, University of Florida., p.30
 30 Jamison, M. (2012) Methods for Increasing Competition in Telecommunications Markets. Public Utility Research Center, University of Florida, p.10

75. Highly differentiated product offerings are typically found in telecommunications markets as service providers compete for market share by providing differentiated products in the form of varying network capabilities, handsets and various service bundles³¹ that satisfy a variety of consumer needs. Telecommunications markets are also dynamic as they are constantly changing, particularly in terms of innovation and technology.

76. As a result of the aforementioned features of telecommunications, there are common competition issues which arise in these markets, namely barriers to entry and expansion, market concentration and market conduct concerns.

76.1 In terms of barriers to entry, there are absolute barriers that legally deny market entry and often relate to regulations in the market such as licencing. Structural barriers arise from market conditions that entail high and sunk costs, network effects and an incumbent's control of the means of production e.g. a scarce resource.³² Barriers to entry also result from economies of scale and strategic advantages, which occur due to an incumbent's first mover advantage over potential entrants and small rivals.³³ For instance, a first mover is most likely able to secure access to the best mobile sites.

76.2 Telecommunications markets are often highly concentrated,³⁴ which typically

tends to oligopolistic competition, particularly in the upstream markets.³⁵ In most instances, telecommunication markets display market shares that are asymmetrically distributed in favour of incumbents due to their first mover advantage.³⁶ High and unchanging market share rankings in telecoms often signal that these markets are characterised by firms having a degree of market power.³⁷

76.3 Competition issues arise around market conduct when firms use their market power³⁸ to distort competition in their favour, generally taking the form of an "abuse of market power" or an "abuse of dominance".³⁹ Given the features of telecommunications markets, market conduct that is potentially exclusionary and anti-competitive includes outright refusals to deal such as denying access to infrastructure and roaming services; constructive refusals to deal such as providing access to infrastructure on unfair and discriminatory terms; predatory pricing, cross-subsidisation or margin squeeze; coordination; and excessive pricing.⁴⁰

77. Due to the characteristics of telecommunications services and the related competition issues, there are often market failures in these markets, particularly due to the existence of market power, which results in sub-optimal market outcomes.⁴¹ As a result of the potential for market failure

31 New Zealand Commerce Commission (2016) Competition in the fixed and mobile telecommunications markets, p.3
 32 ICN (2006) ICN Merger Guidelines Workbook- Prepared for the Fifth Annual ICN Conference. p.55
 33 ICN (2006) ICN Merger Guidelines Workbook- Prepared for the Fifth Annual ICN Conference. p.56
 34 New Zealand Commerce Commission, (2006) "A Review of Cellular Mobile Market Entry Issues", 10 October 2006. p.15; ACCC (2018, p.5); Lee and Lee (2006); Kovecevic et al., (2016)
 35 Kovacevic, D., Krajnovic, A., & Sain. (2016) "Market Analysis of the Telecommunications Market - The Case of Croatia". Information Technology, p.161-175
 36 Muck, J & Heimeshoff, U (2012) First-mover Advantages in Mobile Telecommunications: Evidence from OECD countries. Discussion Paper No.71: 1-41
 37 The ICN (2006) notes that market shares among market participants that varies considerably over a relatively short time period might be suggestive of a competitive situation where no firm has market power; conversely, the persistence of a more rigid pattern over a period of time may be indicative of a situation of market power, p.34
 38 The Competition Act, no.89 of 1998 defines the "market power" as "the power of a firm to control prices, or to exclude competition or to behave an appreciable extent independently of its competitors, customers or suppliers"
 39 Section 7 of the Competition Act, no.89 of 1998 notes that a firm with market power is dominant
 40 Jamison, M. (2012) Methods for Increasing Competition in Telecommunications Markets. Public Utility Research Center, University of Florida, p. 36-47
 41 CPB Netherlands Bureau for Economic Policy Analysis (2005) Do market failures hamper the perspectives of broadband? No 102, p. 40

and the importance of telecommunications to consumers and businesses, it has been considered by governments as an important area for regulation in order to ensure that the principle of fair competition is upheld in the public interest. The prevalence of market failures and the need for regulation also appears to be a concern in South Africa given the policy, legislative and regulatory environment for the sector. We consider this in the following section. Further detail on the economic characteristics of the telecommunications sector is also provided in Appendix B of the Provisional Report.

2.4 POLICY, LEGISLATIVE AND REGULATORY ENVIRONMENT

78. Given that the telecommunications sector is commonly regulated – and South Africa is no exception – an important element for the Commission to consider is the policy, legislative and regulatory environment in which the telecommunications sector operates. The South African Government has implemented various policies and development plans in which it emphasises key policy objectives and goals for the Information and Communication and Technology (ICT) sector. In order to achieve the country’s socio-economic development goals, core ICT policies are adopted with the aim to support the Government’s vision of “robust, reliable, affordable and secure ICT services”⁴². The sector’s key policy objectives focus mainly on the provision of high-speed and affordable broadband access via the efficient use of underlying infrastructure, which will contribute to economic growth.⁴³
79. The National Development Plan (NDP), as a long-term development plan for South

Africa, focuses both on affordability and access goals with respect to broadband services. National access to broadband services at competitive prices is emphasised throughout the NDP and its stated goal by 2030 is to “...make high-speed broadband internet universally available at competitive prices”⁴⁴ (our emphasis). To take forward the spirit of the NDP, South Africa adopted a national broadband policy in 2010 called SA Connect. Broadly, the policy’s main objective is to achieve nationally available and affordable broadband for all the country’s users.⁴⁵ SA Connect highlights the context of high communication costs in South Africa and includes targets for broadband affordability such as every South African having access to broadband services at 2.5% or less of the average monthly income.⁴⁶

80. As a central policy framework for the economy’s transformation into an inclusive digital society, the National Integrated ICT Policy White Paper (“ICT White Paper”) largely focuses on improving infrastructure access and the avoidance of infrastructure duplication, improving competition (particularly in the ‘services market’⁴⁷), and the inclusion of all South Africans in the digital economy.⁴⁸ The ICT White Paper was published in October 2016 and has been approved by Cabinet. It outlines sector policies required to achieve its policy goals, the primary one being the creation of a national wholesale open access network (WOAN) using all high-demand spectrum. Further initiatives within the ICT White Paper include the creation of an open access environment that provides access to essential facilities, infrastructure sharing and rapid infrastructure deployment.⁴⁹

42 DTPS.gov.za (2018) Constitutional Mandates, [Online] Available at: https://www.dtps.gov.za/index.php?option=com_content&view=article&id=12&Itemid=165 [Accessed 18 June 2018]

43 ICASA (16 February 2018) Discussion document. Appendix 2: Government Policy Objectives. Government Gazette No. 41446

44 National Planning Commission (2011) National Development Plan 2030: Our Future- make it work! (“NDP”), p.34

45 DOC (20 November 2013) SA Connect: creating opportunities, ensuring inclusion- SA Broadband policy, p.3

46 DOC (20 November 2013) SA Connect: creating opportunities, ensuring inclusion- SA Broadband policy, p.12

47 This refers to the lowest of the three layers in the value chain described above i.e. the retail layer

48 DTPS (3 October 2016) National Integrated ICT Policy White Paper. Pretoria

49 DTPS (3 October 2016) National Integrated ICT Policy White Paper. Pretoria

81. In terms of the sector's current legislation, the Electronic Communications Act 36 of 2005 ("the ECA") is the primary legislation governing the electronic communications sector in South Africa. The primary object of the Act is "to provide for the regulation of electronic communications in the Republic in the public interest".⁵⁰ The ECA and the Electronic Communications Amendment Act 1 of 2014 cover the main areas of licensing, access, infrastructure rights, spectrum frequency management and assignment, markets and competition. The Act, as amended, served to refine licensing issues, to make further provision towards ensuring effective competition and to remove regulatory bottlenecks in the sector. The Act establishes the mandate for ICASA, as the industry regulator, to regulate sectoral licensing and it contains separate chapters for electronic communications networks, for the laying of fixed-line network infrastructure and for radio frequency spectrum where ICASA's assignment and management responsibilities are outlined.
82. Changes in the sector are being driven by a progressive policy environment, as well as imminent legislative and regulatory interventions which are likely to have significant implications for the sector. The current legislative initiative from the Department of Telecommunications and Postal Services ("DTPS") is to amend the ECA in line with the ICT White Paper. The latest draft of the Electronic Communications Amendment Bill ("Amendment Bill"), published on 31 August 2018⁵¹ and tabled in Parliament on 19 September 2018, thus represents a translation of the White paper provisions into legislation. Although the Amendment Bill was recently withdrawn from Parliament (detailed further in Appendix C of the Provisional Report), a revised form of the Amendment Bill is expected to return to Parliament in the coming months. The Amendment Bill was a substantial, sector-altering piece of legislation that aimed to address a number of issues identified in the ICT Policy White Paper and included provisions for a WOAN⁵², the assignment and use of spectrum, rapid deployment, and obligations to provide open access to electronic communication facilities at the wholesale level.⁵³
83. Established and governed by the ICASA Act 13 of 2000⁵⁴, as amended⁵⁵, ICASA is the independent communications regulator. ICASA, as an entity that currently reports to the Ministry of Communications (MoC), is responsible for (amongst others) issuing licenses to telecommunications and broadcasting service providers, enforcing regulatory compliance and managing the effective use of radio frequency spectrum.⁵⁶
84. ICASA has enacted to regulate the mobile termination rates (MTRs) or interconnections rates that carriers charge for terminating or completing calls on each other's network.⁵⁷ Within its focus on reducing the cost of data, ICASA has also published its amended End-User and Subscriber Service Charter Regulations on 7 May 2018.⁵⁸ Under the new regulations, implemented from 28 February 2019, service providers are prohibited from charging subscribers for out-of-bundle (OOB) data usage without prior subscriber consent. The regulations also require all licensees to provide an option to consumers to roll over unused data and to provide consumers with the option to transfer data to another subscriber on

50 The Electronic Communications Act 36 of 2005. Government Gazette No. 28743. 18 April 2006

51 Electronic Communications Amendment Bill. Government Gazette No. 41880, 31 August 2018

52 Electronic Communications Amendment Bill. Government Gazette No. 41880, 31 August 2018. Chapter 3A

53 Electronic Communications Amendment Bill. Government Gazette No. 41880, 31 August 2018. Chapter 8

54 The ICASA Act 13 of 2000

55 The ICASA Amendment Act 2 of 2014, Government Gazette No. 37537, 7 April 2014

56 Independent Communications Authority of South Africa. 2017. Our Mandate- Policy Mandate. [Online]. Available at: <https://www.icasa.org.za/pages/our-mandate> [Accessed on 18 June 2018]

57 Amendment of the Call Termination Regulations. Government Gazette No 41943 (Notice 489 of 2018). 28 September 2018

58 The End-User and Subscriber Services Charter Amendment Regulations, Notice 233 of Government Gazette 41613. 7 May 2018

the same network.⁵⁹ Operators have since implemented changes regarding the roll-over of data.

85. In addition to the aforementioned initiatives currently underway, we note that regulatory interventions for the sector are ongoing – as this report is published, ICASA is conducting a market review into the mobile broadband market and the Minister of Communications released the “Policy On High Demand Spectrum And Policy Direction On The Licensing Of A Wireless Open Access Network” (“Policy Directive”) in the Government Gazette on 26 July 2019⁶⁰. ICASA must give effect to the Policy Directive, which is critical to the future trajectory of the market. It includes a change to policy on high demand spectrum which is to supersede the White Paper to the extent that this differs with respect to the assignment of high demand spectrum⁶¹. It also includes a direction to the Independent Communications Authority of South Africa (“ICASA”) on the licensing of the Wireless Open Access Network (“WOAN”). Moreover, the policy directive goes further and identifies factors that should or must be considered in the licensing process for both the WOAN and other licensees. ICASA has recently released a draft information memorandum which sets out its view of the the licensing process. The Commission has provided input to ICASA on this process.
86. In a progressive and rapidly changing policy, legislative and regulatory environment, it is important that recommendations flowing from the Inquiry take into account both the environment and the key developments therein. The recommendations of the Inquiry must be made within the constraints of this environment, but can also assist in directing or shaping new and imminent developments such as the finalisation of the Amendment Bill and the process of assigning the currently unassigned spectrum.

87. Further details regarding the sector’s policy, legislative and regulatory environment are provided in Appendix C of the Provisional Report.

2.5 APPROACH TO THE ANALYSIS AND REPORT

88. The assessment of submissions as contained in this report are laid out in a similar manner to the Provisional Report. After providing an overview of the price discrimination practices observed in the market and the dynamics behind those practices, the first step in the analysis, given the premise of the Inquiry being that data prices in South Africa may be unreasonably high and that the ToR calls for the benchmarking of price in South Africa against other countries, is to understand how data prices in South Africa compare to other countries and also how prices compare across different categories of customers, and in particular poorer consumers.
89. As with the Provisional Report, the report then turns its attention to what factors or features of the mobile market and value chain may cause or lead to high prices for data services. These are again organised into two broad areas, namely cost and competition factors:
- 89.1 High prices may be caused by **cost factors driven by regulatory or competition failure**. Operators, regardless of their market position, will seek to at least recover their costs, and these costs may be influenced by the competitive or regulatory environment. For instance, regulatory failure to provide access to key resources such as spectrum may result in unnecessarily high costs for all operators. Similarly, costs may also be unnecessarily high for some operators due to a competition failure at a wholesale level, and a failure to regulate such markets.

59 ICASA website. [Online]. Available at: <https://icasa.org.za/live.flowroot4.flowsa.net/news/2018/announcement-of-final-end-user-and-ser-vice-subscriber-charter-regulations>. [Last viewed 09 April 2019]

60 Government Gazette Notice No. 42597, 26 July 2019

61 Government Gazette Notice No. 42597, 26 July 2019, para.2.1.5

- 89.2 High prices may also be caused by **hindrances to effective competition**, regardless of the cost level. Where competition is inadequate or non-existent, firms have more market power and a greater ability to increase prices above the competitive level. Competition concerns may arise in a range of ways - from the particular market structure or from specific advantages to certain firms that cannot be matched by rivals. The state of competition, as shown in the ToR, is a necessary avenue of assessment. However, it is important to note that a market inquiry simply seeks to establish what may be hindering more effective competition, and to remedy that, rather than seek to establish dominance and a substantial lessening of competition which are the domain of abuse cases.
90. Once an understanding of what factors may be negatively affecting price levels is reached, the report turns to the provisional recommendations made in the Provisional Report and the specific submissions thereon. Recommendations encompass the types of interventions that might serve to enhance competition or reduce costs, to the ultimate benefit of lower prices. Following the consideration of, and findings on, the factors that may be leading to higher prices and the consideration of submissions on the provisional recommendations, this report concludes with its final recommendations.
91. As in the Provisional Report, we note again that the identification of issues and the direction of Inquiry has been informed by the extensive and very useful submissions received by the Commission. Some aspects of the ToR have not been developed extensively where there have been no submissions on that aspect (or the submissions received do not identify concerns), and any other documents or research gathered by the Commission team does not suggest any concerns. A complete summary of all the submissions received and considered in the formation of the Provisional Report, organised by issue, is

contained in Appendix D of the Provisional Report. We do not repeat those submissions here given how they informed the findings of the Provisional Report itself.



3. INTERNATIONAL PRICE COMPARISONS AND THE LEVEL OF PRICES

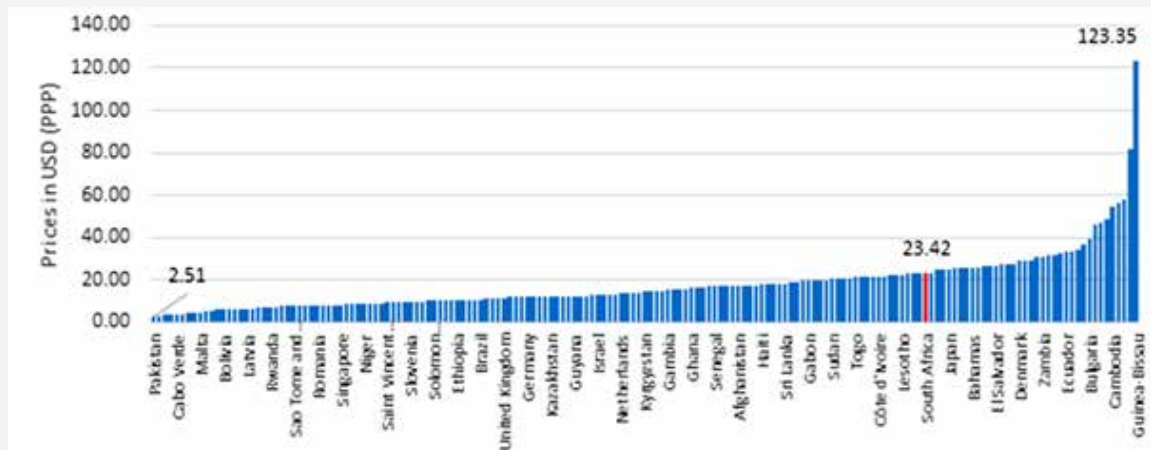
92. This part of the Commission's analysis covers the comparison of South African data services prices against those of other countries. In doing so it provides a perspective on whether data prices are high relative to other countries.
93. This section starts with a summary of the findings of the Provisional Report. After the release of the Provisional Report, the Commission received a number of submissions regarding the evidence presented in its Section 3 and the findings thereof. The following section (Section 3.2) provides a summary of these submissions, focusing in particular on those submissions opposing any of the provisional findings. We then detail the Commission's response to these submissions. Finally, we conclude the section with an overview of our final findings.
94. Overall, what this section shows is that even after correcting for errors made in the analysis in the Provisional Report, updating the analysis with new data, and taking account of submissions, the conclusions are if anything stronger than before: South Africa's prices are higher than many countries, worsening over time relative to other countries, and certainly not low enough relative to other countries such that a further examination of the local market is not justified. Given that the major mobile operators have operations in other African countries and yet have not produced any compelling evidence to the contrary is telling.
95. Notwithstanding this, we emphasise that regardless of what the international price

comparisons reveal, it is essentially common cause between the Commission and the operators that data prices are higher than they ought to be in South Africa. All operators identify spectrum constraints as resulting in increased costs and therefore affecting pricing. While some stakeholders also point to competition and other concerns, the debate appears to be what is causing prices to be too high rather than whether prices are too high at all.

3.1 SUMMARY OF PROVISIONAL FINDINGS

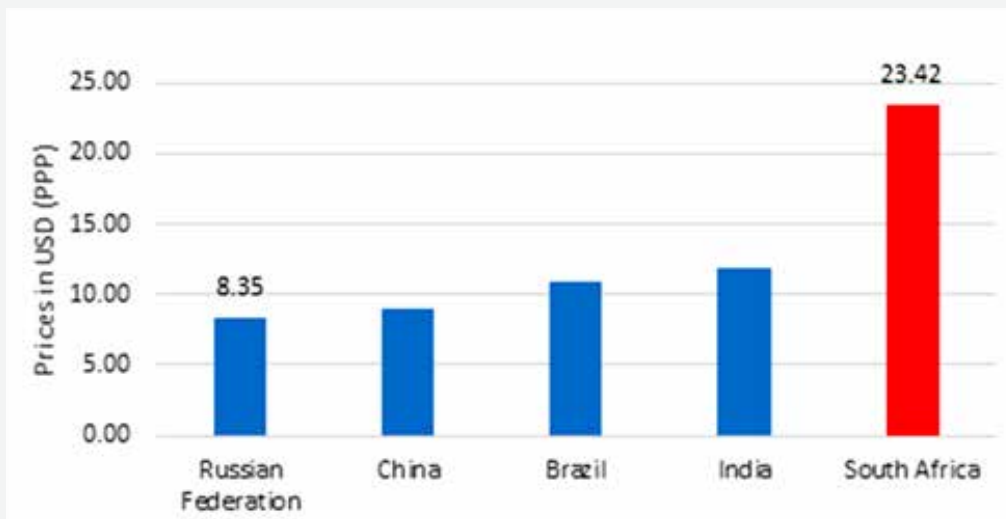
96. The ToR for this Inquiry required the Commission to undertake an international benchmarking of South African data prices. In conducting the benchmarking exercise, the Commission considered existing market research covering the comparison of South Africa's mobile prepaid data prices relative to other countries (across the globe, BRICS and African country groupings). Based on the studies considered, the Commission concluded that South Africa's prepaid data prices perform poorly, as its prices often rank among the more expensive countries.
97. One of the notable studies or sources of data considered by the Commission in the Provisional Report was that of the ITU, which showed that prices in South Africa compare poorly against international benchmarks. Figure 4 of the Provisional Report which we reproduce as Figure 10 below, showed that South Africa ranks poorly compared to a worldwide selection of countries and is considerably higher than the cheapest of the countries. In the Provisional Report,

Figure 10: Replica of Figure 4 of the Provisional Report - Mobile prepaid data prices in USD (PPP), 500MB (2016)



Source: adapted from ITU ICT 2017 Prices report

Figure 11: Replica of Figure 5 of the Provisional Report - Mobile prepaid data prices for BRICS in USD (PPP), 500MB (2016)



Source: adapted from ITU ICT 2017 Prices report

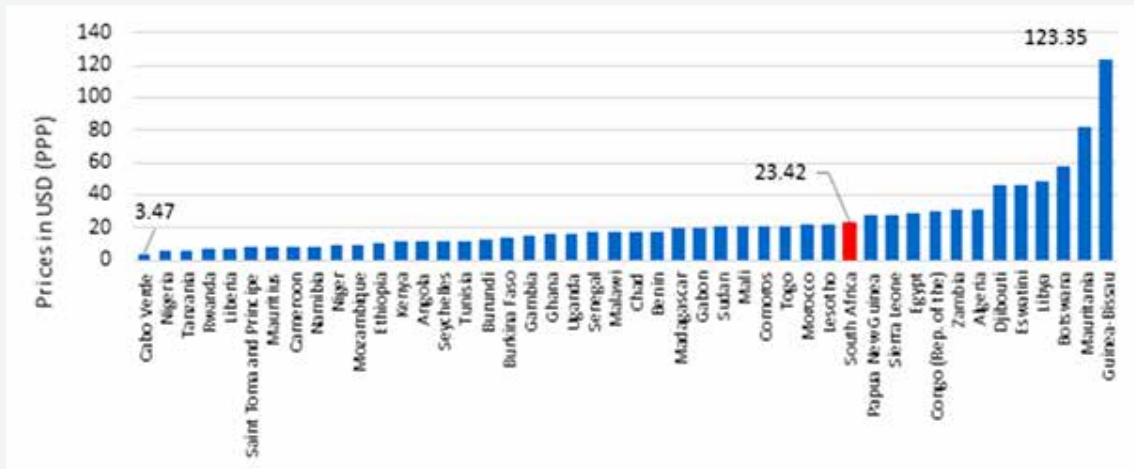
the Commission stated that South Africa’s prepaid 500MB data bundle ranked as the 131st cheapest out of 169 countries and was 833% more expensive than Pakistan, which was the cheapest country in the benchmark pool.

Figure 5 of the Provisional Report which we reproduce here as Figure 11 for ease of reference. The Commission noted that the price in South Africa was 180% more expensive than the cheapest price from the BRICS countries, offered by Russia.

98. In the Provisional Report, the Commission also showed that South Africa’s price for the 500MB bundle was the highest in 2016 amongst the BRICS countries as shown in

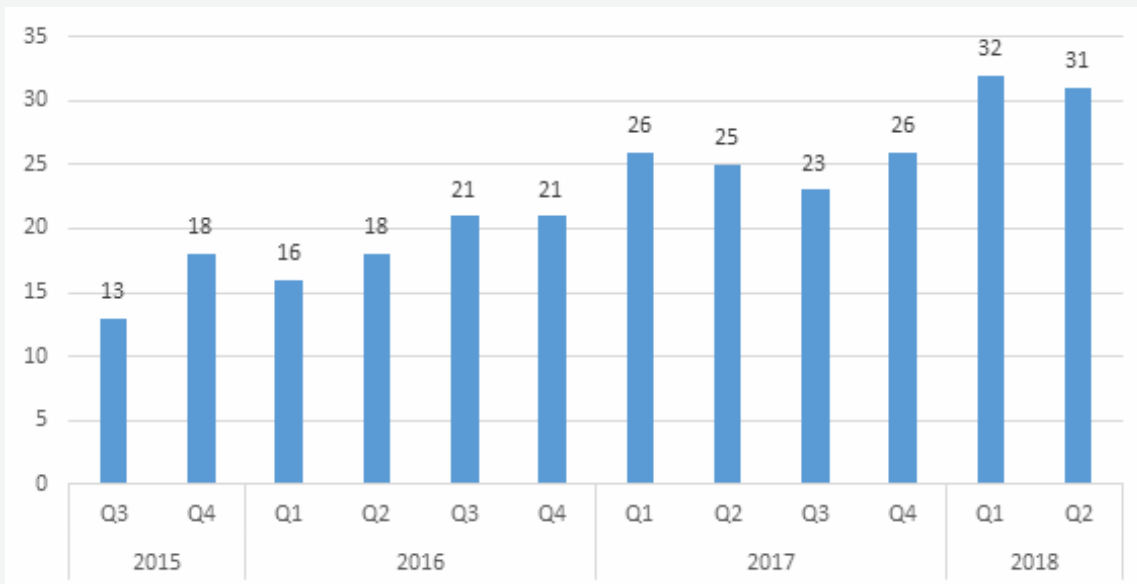
99. The Commission further showed, using ITU data, that South Africa also did not fare favourably when benchmarked against other African counties. Figure 6 of the

Figure 12: Replica of Figure 6 of the Provisional Report - Mobile prepaid data prices for African countries in USD (PPP), 500MB (2016)



Source: adapted from ITU ICT 2017 Prices report

Figure 13: Replica of Figure 18 of the Provisional Report - SA rank for 1GB price against 41 African countries (Q3 2015 - Q2 2018)



Source: RIA RAMP Index and data submissions to the Commission (2019)

Provisional Report, reproduced as Figure 12 above, showed that the price of a 500MB bundle in South Africa ranked 34th out of 45 African countries.

100. Among others, the Provisional Report further considered studies by Research ICT Africa and Tarifica (Global Benchmarking Reports), which along with the ITU data presented above, are updated for the latest available

data and presented in Section 3.3 below. In the Provisional Report, the Commission recognised that the benchmarking data from Research ICT Africa indicated that South Africa performed increasingly poorly relative to other African countries, shown in the figure above, as its 1GB data prices ranked among the more expensive countries in the RAMP index with the gap

Table 3: Replica of Table 3 of the Provisional Report - Prices for MTN prepaid data bundles across countries (USD) (2017)

COUNTRY	500MB	1GB	2GB
South Africa	7.84	11.95	19.42
Botswana	N/A	12.53	19.33
Ghana	2.22	4.43	7.10
Ivory Coast	1.69	3.37	6.33
Liberia	N/A	N/A	0.04
Nigeria	N/A	3.15	5.04
Rwanda	N/A	2.32	N/A
Uganda	5.56	8.34	N/A
Zambia	1.69	3.41	6.75
Afghanistan	N/A	4.32	5.76
Benin	N/A	7.17	10.76
Cyprus	N/A	18.88	27.15
Iran	N/A	0.14	0.23

Source: adapted from ICASA Bi-annual Tariff report 2017

widening over time as prices fell faster in other African countries.⁶²

101. Furthermore, the Commission presented data from research done by ICASA, which showed that Vodacom and MTN price higher in South Africa than in other territories in which they operate. With respect to Vodacom, this data indicated that Vodacom prices higher in South Africa than the other territories it or its parent (Vodafone) operates in.⁶³ Similarly, MTN priced its data bundles higher in South Africa in 2017 than in most of the other countries where it operates, as shown in Table 3 of the Provisional Report which we replicate above as Table 3.

102. The Commission noted the challenges that come with benchmarking exercises, but held that benchmarking studies do have some probative value by providing a simple and effective cross-check on the general advertised prices across countries. These are very commonly used and provide an indication of whether there could be issues in a particular country based on the price differences observed.

3.2 SUBMISSIONS IN RESPECT OF PROVISIONAL FINDINGS

103. The Commission received various submissions regarding the evidence presented in Section 3 of the Provisional Report. Many submissions from stakeholders, like SOS and MMA, supported the Commission's findings. However, a number of submissions criticising the Commission's analysis and findings were also received, primarily from operators. The essence of these submissions can be summarised under the following themes (and are expanded on in more detail further below and responded to in Section 3.3 below):

103.1 Firstly, operators, specifically Vodacom, MTN and Telkom, argue that the benchmarking evidence is so flawed that it cannot be used to justify the Commission's findings and recommendations on competition.

103.2 Secondly, the operators submit that in various instances, the Commission has

62 DSMI Provisional Findings and Recommendations Report, 24 April 2019, p.54, Figure 18

63 This is shown in Figure 10 of the Provisional Report, p. 47

- relied on old (dated) benchmarking exercises and has not correctly drawn and presented data from certain sources.
- 103.3 Thirdly, the operators argue that the Commission has not considered the impact of cost drivers, quality of service and other non-price factors when interpreting the evidence from the international benchmarking.
- 103.4 Fourthly, the operators argue that the Commission has relied on benchmarking evidence that excludes a large portion of the market, as shorter-validity or smaller-sized data bundles are excluded, as well as promotional offers.
- 103.5 Fifthly, the operators submit that the Commission has overlooked relevant benchmarking indices and measures, which they view as more closely capturing the affordability of mobile services.
104. The specific submissions in support of the Commission's provisional findings regarding the international price comparisons and the level of prices are as follows:
- 104.1 While recognising the challenges with price benchmarking (e.g. by its very nature, benchmarking data will likely be outdated by a year or two), which it notes the Commission itself recognised, as well as the criticism levelled by some commentators, SOS agreed with the general overall conclusion of the benchmarking section of the report that mobile prepaid prices show that South Africa performs relatively poorly.⁶⁴
- 104.2 MMA considers the benchmarking exercise undertaken by the commission important for two reasons.⁶⁵ Firstly,
- MMA states that the assessment "provided revealing information for the significant asymmetry in pricing"⁶⁶ between South Africa and other countries which causes prejudice to South African consumers. Secondly, MMA states that the Commission's exercise led to the disclosure of 'a raft of information' that offers insight into 'pricing structures' and reveals the need for more transparency and readily available and comparable pricing information that consumers can use to hold service providers to account.⁶⁷
105. A number of additional comments were received where criticisms or alternative views were expressed. Outside of comments by operators (listed above), the following submissions were received:
- 105.1 Afrihost submits that [redacted]. Hence, Afrihost's opinion is that "[redacted]"⁶⁸ in order to introduce cost-oriented solutions.
- 105.2 ICASA submits that the title of Figure 10 from the Provisional Report which is based on ICASA's bi-annual tariff report, mistakenly refers to Vodacom's tariffs across Africa rather than "International Footprint Prices for 1GB Data Bundles".⁶⁹
- 105.3 Sutherland, in his personal capacity, criticised the Commission's benchmarking exercise for revealing "little that ICASA should not have known."⁷⁰ Sutherland suggested that the benchmarking exercises missed non-pricing data such as spectrum assignments (dates, bands and operator allocation - at least for SADC and BRICS), spectrum costs (initial and annual licence fees, sales and value-added taxes), Herfindahl-Hirschman

64 SOS submission, 14 June 2019, p.7

65 MMA's submission, 14 June 2019, p. 9-10

66 MMA's submission, 14 June 2019, p. 9

67 MMA's submission, 14 June 2019, p.10

68 Afrihost's submission, 14 June 2019, p. 5 (Confidential)

69 ICASA response to Provisional Findings Report of DSMI, 26 June 2019, p.6

70 Ewan Sutherland's submission, p.6

Index (HHI) for markets, rules for sharing masts and towers, and network investments by operators.⁷¹ He appears to suggest that such factors might be contributing to differences in the costs of providing data services and should have been incorporated in the assessment of price levels.

106. As noted above, a number of criticisms were received from the operators in response to the Commission's findings regarding international price comparisons and the level of prices. These operator submissions are presented by theme below.

The use of benchmarking evidence to justify conclusions and recommendations on competition

107. Vodacom, MTN and Telkom argue that the international price benchmarking exercises referred to by the Commission in the Provisional Report are unreliable and cannot be used as a basis to conclude that the market is uncompetitive. Moreover, they argue that it is inappropriate to use such benchmark studies to justify the recommendations and remedies in the Provisional Report.

- 107.1 Vodacom appears to suggest that the Commission uses the results from its international benchmarking to conclude on the state of competition in the market. When referring to the benchmarking assessment in the Provisional Report not accounting for spectrum scarcity in South Africa and non-price or cost factors, Vodacom states that the Commission *"is not in a position to conclude whether prices are above or below expectation in South Africa and indeed, **whether relative price levels in South Africa are driven***

by an alleged lack of competition in the market or exogenous factors" (emphasis added).⁷²

- 107.2 Vodacom further states that the price benchmarking evidence is used by the Commission *"as the basis for much of its report"* and that it should not be used (according to Vodacom) to justify intrusive remedies particularly given the uncertainty with benchmarking evidence.⁷³
- 107.3 MTN argues that the Provisional Report *"essentially uses price benchmarks as a proxy for the state of competition within a particular market"*.⁷⁴ MTN states that the Commission has drawn strong conclusions based on the Provisional Report's benchmarking results and has used this to justify its recommendations, which MTN views as far-reaching and intrusive.⁷⁵ According to MTN, the Commission has both placed reliance on and drawn conclusions from unreliable international benchmarking evidence due to the studies not accounting for cost factors across countries, non-price dimensions and having regard only to headline prices.⁷⁶
- 107.4 Telkom also raises a similar question when it states that it *"is unclear whether the conclusions drawn in the DSMI's provisional report from this evidence have played a prominent role in any of the provisional recommendations it makes, particularly relating to retail prices"*⁷⁷, and argues that *"it would not be prudent to place any weight on any of the benchmarking studies ... for the purposes of reaching definitive conclusions"*.⁷⁸

71 Ewan Sutherland's submission, p.6

72 Vodacom response to DSMI Provisional Findings Report. 14 June 2019, p.16 (Non-Confidential)

73 Vodacom response to DSMI Provisional Findings Report. 14 June 2019. p.70 (Non-Confidential)

74 MTN response to DSMI Provisional Report. 14 June 2019, p. 7 (Non-Confidential)

75 MTN response to DSMI Provisional Report. 14 June 2019, p. 12 (Non-Confidential)

76 MTN response to DSMI Provisional Report. 14 June 2019, p. 11, 14 (Non-Confidential)

77 Telkom submission to DSMI Provisional Report. 14 June 2019, p. 14, para.24 (Non-Confidential)

78 Telkom submission to DSMI Provisional Report. 14 June 2019, p. 14, para.24 (Non-Confidential)

The use of old and/or incorrect data in the assessment

108. In its response to the Provisional Report, Vodacom states that the data used in the benchmarking analysis is outdated, is incorrect, or is based on incorrect factual assumptions.⁷⁹ Additionally, Vodacom states that price benchmarking evidence is misinterpreted in the Provisional Report. In this regard, Vodacom claims⁸⁰ that the Commission has misinterpreted ICASA's benchmarking results, as the Provisional Report describes South Africa's data prices as "expensive compared to other countries".⁸¹ Vodacom refers to ICASA's interpretation of its benchmarking evidence where it holds that South Africa's performance is generally viewed as not the cheapest country nor the most expensive. Vodacom also submits that the Commission's interpretation of ICASA's benchmarking evidence is inaccurate in that the Commission's view of South Africa's data prices as expensive is not evidenced in ICASA's report nor is it interpreted as such by ICASA.⁸²

109. Similar views are held by MTN⁸³ and Telkom,⁸⁴ who also provide objections to the benchmarking studies used in the Provisional Report. Vodacom notes that the Provisional Report contains an extraction error in its Figure 6 as the ITU graph incorrectly showed South Africa's price of 500MB prepaid data as USD 23.42 (PPP) instead of the correct price of USD 16.61 (PPP).⁸⁵

110. Vodacom also criticised the Commission for relying on 'only two' data bundles (1GB and 500MB 30-day bundles) for its international price benchmark exercise, ignoring short-validity, URL-specific, promotions, personalised, free and contract offers.⁸⁶ Vodacom argues that the two bundles relied on by the Commission [3<] are as such a misleading proxy for the overall level of prices in the country.⁸⁷

A lack of consideration of cost drivers, quality of service and other non-price factors

111. Vodacom,⁸⁸ MTN⁸⁹ and Telkom⁹⁰ note that, while the Commission has acknowledged the significance of cost drivers and other non-price factors that differ between countries, it is submitted that the Commission has failed to account for the impact of these factors when interpreting the international benchmarking evidence.

112. MTN notes that there exist varying confounding factors between countries which influence the cost of service, including the country geography, population density, spectrum access and population size, amongst others.⁹¹ Additionally, the operators note that non-price factors, such as network quality, speed and coverage are not accounted for in the benchmark studies,⁹² and these aspects are important to consumers and differ greatly between countries and over time.⁹³

113. In terms of South Africa specifically, Vodacom focuses primarily on the impact of a lack of spectrum but also mentions a low population

79 Vodacom response to DSMI Provisional Findings Report. 14 June 2019, p..7 (Non-Confidential)

80 Vodacom response to DSMI Provisional Findings Report. 14 June 2019, p. 86 (Non-Confidential)

81 DSMI Provisional Report, 24 April 2019, p. 9, para 5.3

82 Vodacom response to DSMI Provisional Findings Report. 14 June 2019, p.86 (Non-Confidential)

83 MTN response to the DSMI Provisional Report. 14 June 2019, p. 5, para 1.9 (Non-Confidential)

84 Telkom response to DSMIs Provisional Findings Report. 14 June 2019, p.10 - 14 (Non-Confidential)

85 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p. 18 (Non-Confidential)

86 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.18 (Non-Confidential)

87 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.70 (Confidential)

88 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.75 (Non-confidential)

89 MTN response to DSMI Provisional Report. 14 June 2019. Page 7, para 2.5 (Non-Confidential)

90 Telkom response to DSMIs Provisional Findings Report. 14 June 2019, p.12, para 20.3.3 (Non-Confidential)

91 MTN response to DSMI Provisional Report. 14 June 2019, p. 7, para. 2.5 (Non-Confidential)

92 MTN response to DSMI Provisional Report. 14 June 2019, p. 9 (Non-Confidential)

93 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.80 (Non-Confidential)

density in South Africa.⁹⁴ Vodacom then goes further to point to what it refers to as ‘non-price outcomes’ in South Africa (speed, coverage, latency) where it holds that South Africa performs well, particularly against other African countries⁹⁵. Vodacom then goes further to state that despite the cost drivers and the positive non-price outcomes, the benchmarking evidence still shows that South Africa’s performance is “middle of the range”⁹⁶, implying South Africa is in fact a stronger performer than what the benchmarking evidence suggests. MTN also appears to focus on the impact of a lack of spectrum on costs. MTN argues that Vodacom and MTN account for most of the network infrastructure investment while having access to less spectrum than their global peers. This has meant they have had to make large investments in infrastructure, which has resulted in “higher costs and prices than would otherwise have been enjoyed”.⁹⁷

114. Submissions to the Commission point to a number of non-price factors which, it is submitted, ought to have been factored into the Commission’s benchmarking analysis in the Provisional Report. The essence of these submissions is that these factors may ultimately explain the differences in prices, mainly through increasing costs but also potentially through an impact on demand. The implication of this, at least for MTN and Vodacom, is that international price differences do not necessarily point to competition issues in the South African market, but are seemingly more likely explained by these non-price factors.

Reliance on benchmarking evidence that excludes a large part of the market

115. The operators state that the Commission does not analyse shorter-validity data bundles or focus enough on smaller-sized data bundles and excludes tariffs with promotional offers. The result of this, according to Vodacom, is that the Commission excludes a large portion of the market as the included benchmark evidence only represents a small part of the market in South Africa.⁹⁸ Vodacom views the Commission’s argument that a particular tariff (the 1GB or 500MB) could represent the overall level of mobile data prices in a certain country as misleading and an assumption without evidence.⁹⁹

116. The operators also argue that the Commission’s use of only headline prices is inappropriate¹⁰⁰ as these prices “... are a poor proxy for the overall state of competition in the mobile data market”¹⁰¹ and would not capture data consumption, out-of-bundle rate reductions, and the take-up of personalised promotional offers.¹⁰² The operators argue that instead of headline prices, ‘effective prices’ are more appropriate and should be used in price comparisons as effective prices account for these aforementioned factors.¹⁰³

Omission of relevant benchmarking indices and measures

117. The operators submit that the Provisional Report’s assessment is lacking due to the Commission having ignored evidence relating to what it describes as affordability measures, which consider the ratio of price to GDP (or GNI) per capita for a country.¹⁰⁴

94 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.78 (Non-Confidential)
 95 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.80-81 (Non-Confidential)
 96 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.86 (Non-Confidential)
 97 MTN response to DSMI Provisional Report. 14 June 2019, p. 58, para. 5.23.11 (Non-Confidential)
 98 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p. 72-74 (Non-Confidential)
 99 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p. 17 (Non-Confidential)
 100 MTN response to DSMI Provisional Report. 14 June 2019, p.12 (Non-Confidential)
 101 MTN response to DSMI Provisional Report. 14 June 2019, p.9 (Non-Confidential)
 102 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.140 (Non-Confidential)
 103 MTN response to DSMI Provisional Report. 14 June 2019, p.41., para 4.40 (Non-Confidential)
 104 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.88 (Non-Confidential); MTN response to the DSMI Provisional Report. 14 June 2019, p.12

Vodacom points to the use of the word 'affordability' in the ToR as a basis for this view.¹⁰⁵ In this regard, the operators do not agree with the Commission's approach of looking only at data prices, arguing that a measure that considers prices as a percentage of GNI per capita more closely reflects the affordability of mobile services within the considered countries.¹⁰⁶ Vodacom also points to the country's connectivity targets (such as SA Connect) being framed in terms of prices as a percentage of income levels.¹⁰⁷ MTN highlights South Africa's strong performance in terms of various affordability measures and indices, as per their Table 2.¹⁰⁸

118. MTN also provides comparisons of South Africa's performance based on other benchmark indices (most of which were already submitted in its presentation at the Data Inquiry Public Hearings)¹⁰⁹ which it sees as more relevant, and which depict South Africa's relative performance as more favourable than in the Provisional Report. MTN views these indices as relevant in that they capture the overall ICT and broadband performance of a country. In Table 1 of its submission, MTN include three indices¹¹⁰ with South Africa's score, and the country's ranking against 3 comparator groupings or jurisdictions, namely SADC, Africa and the BRICS countries.¹¹¹

3.3 COMMISSION'S RESPONSE

119. This subsection comprises the Commission's response given the submissions made to the Commission. In brief, we find the following, which is expanded on in more detail below:

119.1 Firstly, the role of international price comparisons in the Provisional Report has been misinterpreted by

the operators. While Vodacom and MTN have argued that international benchmarking evidence cannot be used to conclude findings on competition, the Commission, however, did not rely on this to reach findings on competition and instead uses the evidence fairly to conclude that the pricing relative to other countries warrants further investigation of the causes behind pricing outcomes in South Africa. We do, however, note the results of the international price comparisons are consistent with the finding that there is insufficient competition in the market.

119.2 Secondly, the operators' submissions regarding incorrect data and alleged misrepresentation of evidence do not affect our conclusions. Once correcting the ITU data used in the Provisional Report, it is clear that South Africa's prepaid data prices are still poor when compared to other countries. In line with the overall benchmarking picture, the Commission still finds South Africa's data prices to be relatively high.

119.3 Thirdly, the operators have criticised the Commission for using old and/or outdated data. Besides recognising that benchmarking evidence can generally suffer from a reporting lag, the Commission provides an update of the benchmark evidence (from ITU, RIA, Tarifica and operator site research) which shows that this does not alter conclusions as South Africa's relative pricing performance experiences no significant change. If anything, the evidence shows that South Africa's relative position has deteriorated.

119.4 Fourthly, certain benchmark evidence referred to by operators and not

105 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.19 (Non-Confidential)

106 Vodacom written submission to Provisional Findings Report of DSMI. 14 June 2019, p.19; MTN response to the DSMI Provisional Report. 14 June 2019, p.12, para 2.14

107 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.88 (Non-Confidential)

108 MTN response to the DSMI Provisional Report. 14 June 2019, p.14 (Non-Confidential)

109 MTN presentation at the Data Inquiry Public Hearings. 18 October 2018. Slide 8-9

110 The ICT Development Index, the Inclusive Internet Index and the Mobile Connectivity Index

111 MTN response to the DSMI Provisional Report. 14 June 2019, p. 13-14 (Non-Confidential)

presented in the Provisional Report has been rightfully excluded as the Commission has explained its concerns with indices that are, for instance, capturing overall ICT performance (and broad measures of affordability) and not providing insights into data prices specifically as per the Inquiry's ToR.

119.5 Fifthly, the operators criticised the benchmarking assessment as it failed to account for the differences in cost, quality and other non-price factors in South Africa relative to other countries. However, despite having operations in other African countries against which such cost differences could be explored, the operators themselves largely fail to present evidence that these non-price factors would explain South Africa's higher relative data prices. The failure to do so results in a logical deduction that the evidence did not support their case. Furthermore, the Commission's analysis of these various cited factors (including spectrum, network quality, population density) shows that there is no clear or consistent relationship between these factors and pricing outcomes that inform benchmark performance.

119.6 Sixthly, the operators have failed to adequately address the insights from the RIA data in the Provisional Report which showed that South Africa performed increasingly poorly relative to other African countries over time as well as the Commission's observation that South Africa's increasingly poor performance is unlikely to have been caused by various non-price factors. The Commission, nonetheless, addresses the minimal operator submissions regarding these insights, and concludes that overall the evidence still points to a deterioration in performance and a competition concern in the South African market.

119.7 Seventhly (and finally), the Commission responds to the operators' argument

that the benchmarking evidence (with a focus on two data bundles, 500MB and 1GB) is only reflective of a small portion of the market. The Commission disagrees with the operators by explaining that the different bundles show a clear relation to one another and therefore account for more of the market than data traffic might suggest. Additionally, these bundle sizes account for the greatest proportion of consumption. In terms of benchmarking effective prices, the Commission also notes that the operators have failed to provide any benchmark analysis based on effective prices (as they have argued for) despite being able to access such information for their other operations in Africa and abroad (and potentially also further territories across the globe under Vodafone). Again, the logical deduction must be that the evidence did not support their case. Moreover, effective prices themselves are complex and misleading in that they represent revenue and volumes across various types of customers and types of tariffs.

The role of international price comparisons in Provisional Report misinterpreted

120. As shown above, Vodacom and MTN have questioned the veracity of the international price benchmarking evidence and the Commission's assessment thereof, arguing that it cannot be used to make findings on competition, or recommendations. However, it is clear that the Provisional Report does not rely on the benchmarking evidence as a primary basis for any finding on competition, nor has it been used to justify or underpin the recommendations in the report. As such the submissions of Vodacom and MTN in this respect are without merit and rely on a misinterpretation of the report.

121. While the ToR for the Inquiry identifies the benchmarking of South African prices against other countries as one objective of

the Inquiry¹¹², the purpose of the Inquiry, as defined in the ToR, does not in any way rely on such an exercise or any outcome of such an exercise. In the introduction of Section 3 of the Provisional Report (“International Price Comparisons and the Level of Prices”), the Commission states that the section considers *“the question of pricing ... and to what extent pricing outcomes in South Africa are higher than other countries.”*¹¹³ In respect of this exercise, the Provisional Report states the following in paragraph 85:

*“Such an exercise is useful in that it may suggest, dependant on the extent to which local pricing outcomes are higher than other countries, that there exist concerns at some point along the value chain. Lower relative prices may suggest that there are fewer, if any, concerns in the market for data services. As pointed to above, higher relative prices may suggest **competition concerns or cost concerns**. Higher prices may also suggest inherent cost differences between countries such as differences in geography, population density, or other input costs”*¹¹⁴ (emphasis added).

122. Thus it is clear from the quotation above that the Commission acknowledges in the Provisional Report that any difference in pricing between South Africa and other countries can indicate *both competition or cost concerns*. This is in agreement with all original submissions, including from operators, where it was noted that cost or competition issues could drive benchmark results.¹¹⁵ To this point, Vodacom itself quotes the Commission’s view that *“higher relative prices may suggest competition concerns or cost concerns”*.¹¹⁶
123. As acknowledged by operators and other stakeholders in their submissions, the Provisional Report recognises the limitations

of benchmarking exercises, but holds that such exercises do have some value in assessing the level of prices in a country (for a number of reasons listed in the Provisional Report). The Provisional Report states that *“(n)otwithstanding the challenges involved, international price comparison studies do have some probative value by providing a simple and effective crosscheck on the general level of advertised prices in a market.”*¹¹⁷ As stated in the Provisional Report, a review of benchmark studies simply provides *“a reasonable view of how mobile and fixed data prices compare across operators, countries and regions as well as over time”*.¹¹⁸

124. Importantly, due to the recognised limitations of the benchmarking evidence used and assessed by the Commission in Section 3 of the Provisional Report, it is not used to conclude on the precise reasons for South Africa’s performance on data prices relative to other countries. However, the evidence is fairly used to conclude that pricing relative to other countries justifies further investigation of the precise causes or factors driving pricing outcomes in South Africa and whether there is any cause for concerns. This is clear from the following paragraph:

*“More broadly, the analysis presented in this section is consistent with the position of the ToR in that there is reason to believe that there may be specific factors or features of the markets in South Africa that result in prices for data being higher than they ought to be. **Thus a more detailed consideration of the market(s) for data in South Africa is both justified and necessary, hence the work of the Inquiry and the assessment of this report more broadly.**”*

125. For the sake of the clarity, and what should be evident from the structure of the Provisional

112 Government Gazette No. 41054, 18 August 2017, para. 3.3.2- 3.3.3

113 DSMI Provisional Findings and Recommendations. 24 April 2019, para. 84

114 DSMI Provisional Findings and Recommendations. 24 April 2019, para. 85

115 Frontier Economics (30 November 2017) *Assessing key outcomes in the market for mobile data services in South Africa* p. 16; MTN submission (Non-confidential version) dated 27 November 2017, p.5, para 1.13

116 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.75 (Non-Confidential)

117 DSMI Provisional Findings and Recommendations. 24 April 2019, p.8, para. 4

118 DSMI Provisional Findings and Recommendations. 24 April 2019, p.32, para. 86

Report and the quotation above, Section 3 primarily shows that a more detailed assessment of specific cost factors (Section 5) and competition (Section 6) was both necessary and prudent. Beyond this, the only instance where the evidence on international price comparisons is referred to is in the findings to Section 6 (Mobile Competition) where it is stated that price benchmark exercises are often based on the cheapest headline prices, which in South Africa's case are below that of MTN and Vodacom. While the evidence on international pricing comparisons, including the updated evidence presented below, is certainly *consistent* with the findings on competition in Section 6 of the Provisional Report and Section 4 below, it is not the basis for these findings. Even the provisional recommendation on price reductions uses effective prices as the benchmark for reductions, not any international comparator.

126. Furthermore, and notwithstanding the above, the Commission is of the view that the benchmarking assessment in Section 3 was not necessary for the assessment conducted by the Commission in terms of the Inquiry, nor was it necessary to reach the conclusions and recommendation in the Provisional Report and in this report.
127. Lastly, the Commission notes that despite the objections raised in the submissions of MTN and Vodacom, all four operators have pointed to factors that have led to prices being higher than they ought to be. Telkom and Cell C point to competition concerns, and all four operators point to the impact on costs of unassigned spectrum. In pointing to factors that raise costs in South Africa, Vodacom and MTN must agree that prices are higher than they ought to be and therefore any dispute with respect to the conclusion that prices are too high in South Africa is simply untenable.

Submissions regarding incorrect data and alleged misrepresentation of evidence do not affect conclusions

128. For the international price comparisons, the Provisional Report includes the mobile prepaid handset-based broadband prices from the International Telecommunication Union (ITU)'s ICT Prices 2017 report (based on 2016 data). As noted in the Provisional Report, the ITU collects the mobile broadband prices of the least expensive plans with a data allowance of 500MB per month and a 30-day validity period.¹¹⁹ The Commission acknowledges that the Provisional Report's representation of the ITU data suffers from an extraction error.¹²⁰ The affected figures are restated below with the correctly extracted data.
129. The corrected version of Figure 4 in the Provisional Report (see Figure 14) shows that South Africa's 500MB price of USD 16.61 ranks it 94th out of the 169 countries for which PPP dollar prices were available¹²¹. The top-ranked country for 500MB prepaid data is Cambodia with USD 2.51 (PPP), whereas Guinea-Bissau ranks as the most expensive country with USD 123.35 (PPP). The ranking for South Africa is thus better than what is represented in the Provisional Report, but is still poor on overall ranking and on a comparative basis, with South Africa's cheapest 500MB price still around 561% more expensive than the cheapest offer in Cambodia.
130. When comparing the ITU pricing data for the BRICS countries, the figure below shows that after correcting for the previous report's error,¹²² South Africa still ranks as the highest price in 2016 for 500MB prepaid data (in PPP\$ terms) at USD 16.61. This price is around 111% more expensive than the cheapest BRICS price offered in China at USD 7.85 (PPP) and approximately 47%

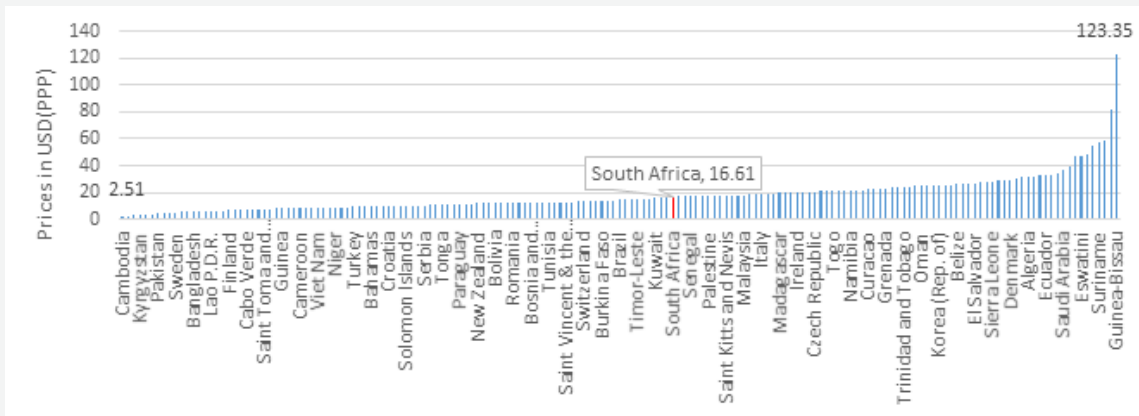
119 ITU (2017) *ICT Prices 2017 report*. [Online]. Available at: https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2017/IP_B2017_E.pdf [Accessed on 23 August 2017]

120 Data Services Market Inquiry Provisional Findings and Recommendations. 24 April 2019. Page 39 - 40

121 The Provisional Report's figure 4 incorrectly showed South Africa's price for 500MB prepaid data as USD 23.42 (PPP) at a ranking of 131 out of 169 countries, instead of USD 16.61 (PPP) at a ranking of 94

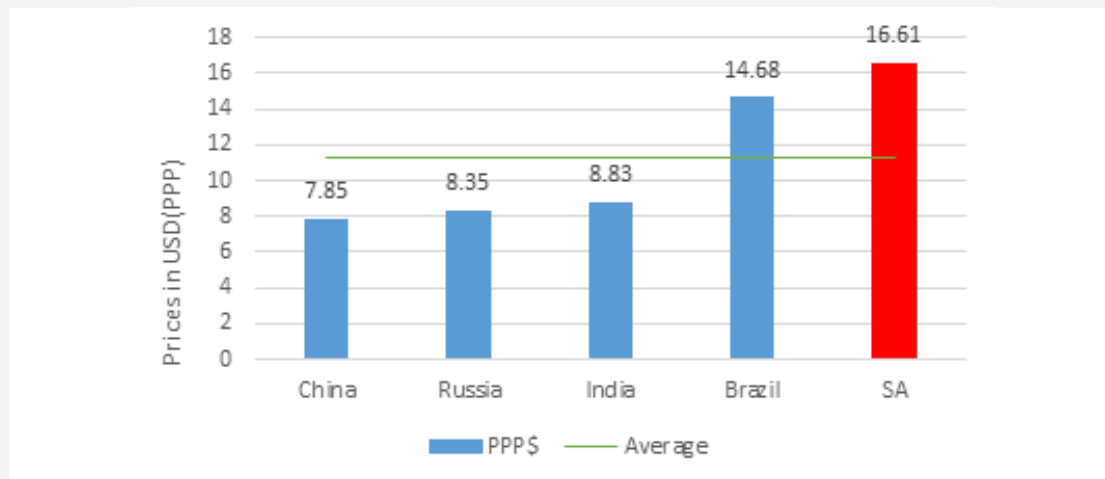
122 The Provisional Report's figure 5 incorrectly showed South Africa's price for 500MB prepaid data as USD 23.42 (PPP) instead of USD 16.61 (PPP)

Figure 14: Mobile prepaid data prices in USD (PPP), 500MB (2016)



Source: adapted from ITU ICT 2017 Prices report

Figure 15: Mobile prepaid data prices for BRICS in USD (PPP), 500MB (2016)



Source: adapted from ITU ICT 2017 Prices report

higher than the average BRICS price of USD 11.26 (PPP).

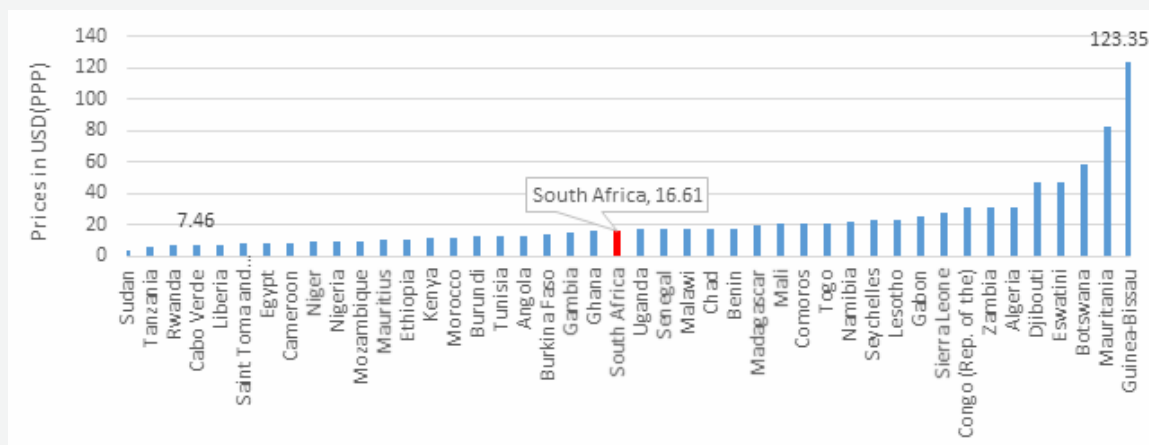
131. The ICT 2017 Prices report shows that for the African countries, South Africa's corrected 500MB data price of USD 16.61 (PPP) ranks it 22nd of the 44 African countries - a more favourable ranking than presented in the Provisional Report but still poor given the comparative set¹²³. South Africa's price is

around 378% higher than the cheapest African country in the sample (in PPP\$ terms) which is Sudan with USD 3.47 (PPP)¹²⁴.

132. The data from the ICT 2017 Prices report, once corrected for previous errors, shows South Africa's ranking as improved relative to the global sample of countries and the African countries, while its BRICS ranking at the time does not change once adjusted for

123 The Provisional Report's figure 6 incorrectly showed South Africa's ranking as 34th cheapest of 45 African countries
 124 South Africa's previous incorrect price of USD23.42 (PPP) was 574.9% more expensive than the cheapest country.

Figure 16: Mobile prepaid data prices in Africa in USD (PPP), 500MB (2016)



Source: adapted from ITU ICT 2017 Prices report

errors (as South Africa at the time still ranks last for its 500MB price). Although it is clear that South Africa's ranking in broad terms across the various comparator samples is better than what is represented in the Provisional Report, South Africa's price is still far from being considered one of the cheaper countries for prepaid mobile data as shown in the figures above. Furthermore, across the different comparator groups, South Africa's 500MB price for 2016 continues to represent a significantly more expensive price than the cheapest country per group. Therefore, the Commission's view is that the corrections to the presentations of the ITU data do not affect the Commission's conclusions on the ITU data.

133. As discussed above, Vodacom also claims that the Commission has misinterpreted the results from ICASA's benchmarking report by describing South Africa's data prices as "expensive compared to other countries".¹²⁵ The Commission makes this reference in the Provisional Report's summary of its findings and recommendations in line with the overall picture from the benchmarking section which shows that South Africa's prices are high. In ICASA's BRICS and SADC country comparisons, South Africa's rank is neither

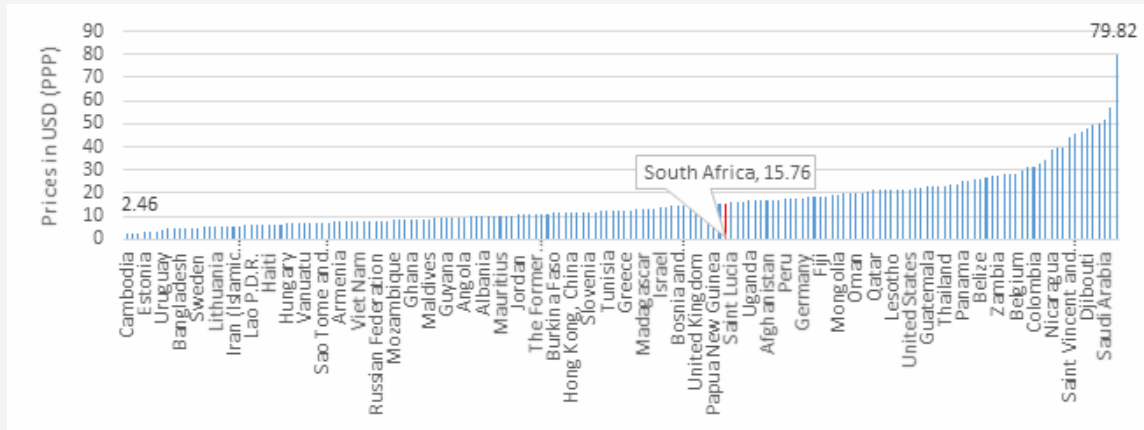
favourable nor unfavourable, although it's actual prepaid data prices (for 500MB, 1GB and 1GB) are considerably more expensive relative to the cheapest offers from either the BRICS or SADC countries. South Africa's average 1GB price, for example, ranks it 7th place of the 14 SADC countries included, while its price of USD 9.04 is 600% more expensive than the cheapest country's (the DRC) average price of USD 1.29.

Updated benchmarking evidence does not alter conclusions

134. A general criticism levelled at the Provisional Report's analysis is that the assessment of international prices relative to South Africa relied on old and/or outdated data. As SOS notes above, benchmarking evidence will always be at least one or two years old,¹²⁶ however for completeness we provide an update of the assessment in the Provisional Report. In addition, RIA and Tarifica data are updated for 2019, and we do a current comparison of pricing by the operators across countries. These are therefore up to date and still paint the same picture as the older data, namely South Africa performs poorly on comparators for prepaid data. However, the newer data also shows that

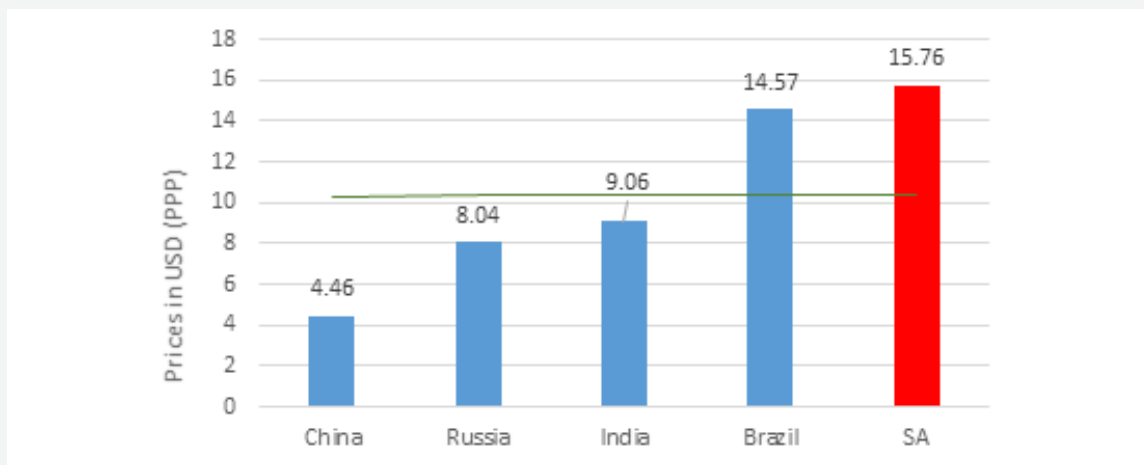
125 DSMI- Provisional Findings and Recommendations, p.9, para 5.3
 126 SOS submission, 14 June 2019, p.7

Figure 17: Mobile prepaid data prices in USD (PPP), 500MB (2017)



Source: adapted from ITU 2018 Measuring the Information Society Report

Figure 18: Mobile prepaid data prices for BRICS in USD (PPP), 500MB (2017)



Source: adapted from ITU 2018 Measuring the Information Society Report

this relative performance is deteriorating over time rather than improving as claimed by the mobile operators.

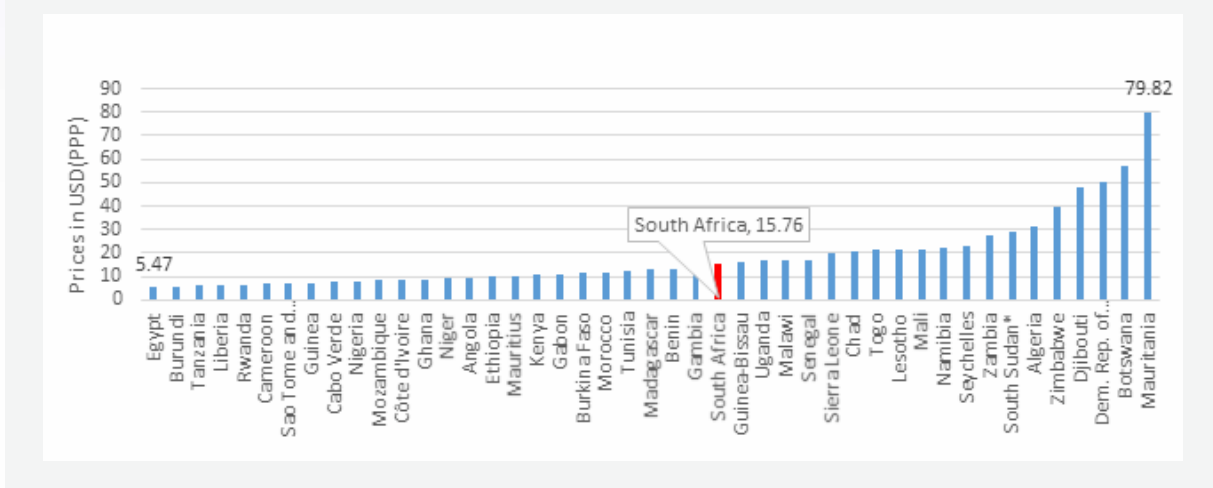
135. This subsection includes the updated pricing data from the ITU, the latest available data prices for African countries from RIA, the latest Tarifica user package comparisons and an updated look at Vodacom and MTN's South African prices as well as their prices charged in South Africa relative to their other African operations.

ITU data update

136. Here we update our assessment of the data collected by the ITU. The Provisional Report relied on pricing data contained in ITU's 2017 ICT Prices report (which refers to 2016 data). We have performed the same assessments but reflecting the latest available mobile prepaid, postpaid and fixed data prices as published in the ITU 2018 Measuring the Information Society Report (which refers to 2017 data).¹²⁷ This section on the updated

127 ITU (2018) *Measuring the Information Society Report (MSIR)*. Volume 1. [Online]. Available at: <https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misir2018/MISR-2018-Vol-1-E.pdf> [Accessed on 3 April 2019]

Figure 19: Mobile prepaid data prices in Africa in USD (PPP), 500MB (2017)



Source: adapted from ITU 2018 Measuring the Information Society Report

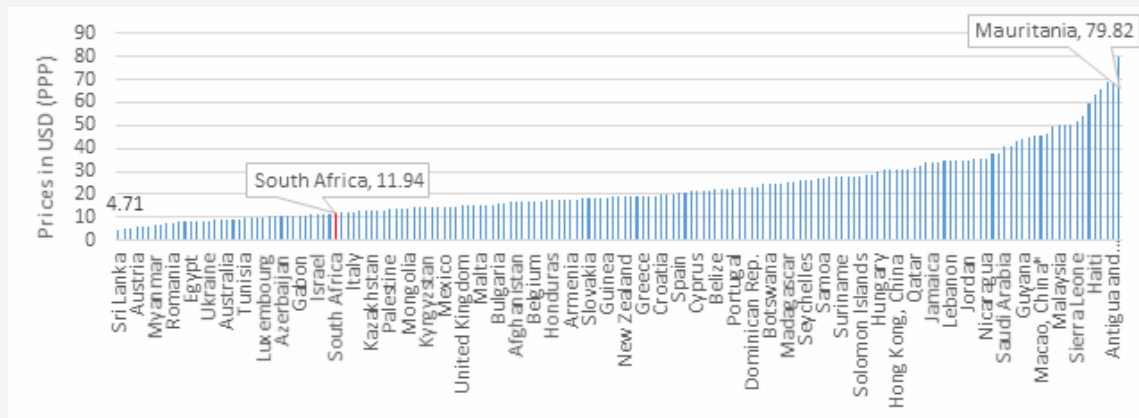
ITU prices shows that the overall picture of South Africa remains largely unchanged compared to the 2016 data.

137. The latest ITU prices for 500MB prepaid data show that South Africa's price of USD 15.76 (PPP) ranks it 102nd of the 168 countries for which PPP dollar values are available. Even though the 500MB data price in South Africa has decreased slightly from the previous 2016 ITU data, from USD 16.61 (PPP), its ranking weakened from 94th place previously (out of 169 countries) to 102nd place in 2017. This is because prices in most countries are on continual decline.
138. When considering only the countries common to both samples (162 countries), South Africa's ranking has fallen from 93rd in 2016 to 99th in 2017.
139. The latest ITU pricing data for the BRICS countries (see Figure 18 above) again shows South Africa's 500MB prepaid data price as the most expensive, around 253% more expensive than the cheapest BRICS price of USD 4.46 (PPP) offered in China and well above the average BRICS price of USD 10.38 (PPP).
140. In terms of the ITU mobile prepaid data prices for the African countries within the global sample of 2017 USD prices (PPP), the latest prices show South Africa ranked

26th of the 45 African countries that have PPP dollar values. This too indicates a slight deterioration in ranking from the 2016 data where South Africa ranked 22nd of 44 countries. At the very least these updated figures show that, firstly, South Africa is still not amongst the best performers and, secondly, that its performance relative to other countries appears to have deteriorated from 2016 to 2017.

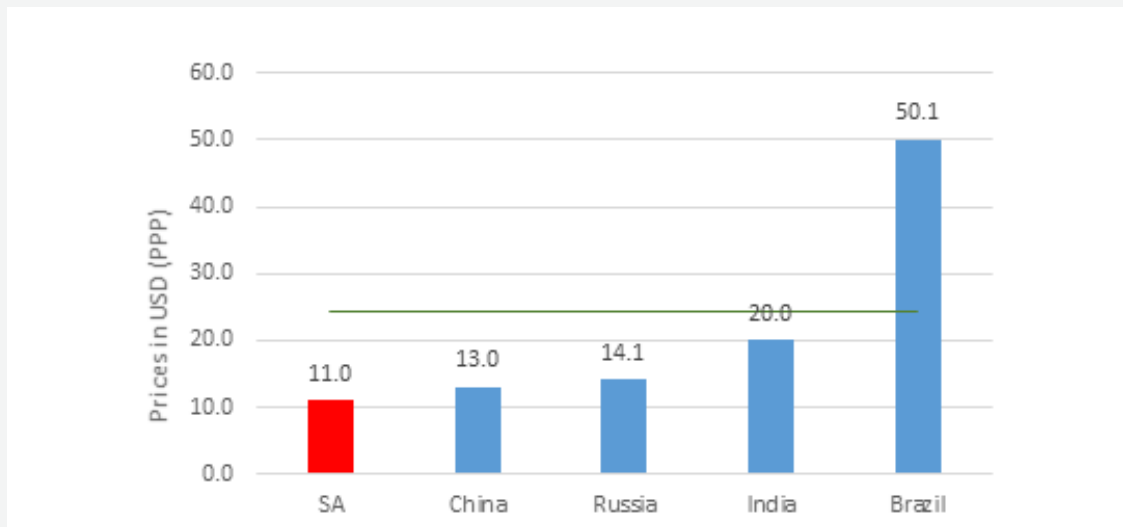
141. When considering only the African countries common to both samples (40 countries), South Africa's ranking has fallen from 21st in 2016 to 24th in 2017.
142. As recognised in the Provisional Report, the ITU's most recent price data for 1GB mobile **postpaid** data-only prices also shows that South Africa performs better in this category than for prepaid compared to other countries, and this result holds for the updated 2017 data. As recognised in the Provisional Report, this finding raises concerns that poorer prepaid consumers are relatively more exploited in South Africa. This is shown for the global comparator group (shown in Figure 20 below), the BRICS group (in Figure 21 below) and the African country group (in Figure 22 below).
 - 142.1 For the global sample, South Africa's ranking has fallen from 32nd place out of 169 countries to 37th out of

Figure 20: Mobile postpaid data prices in USD (PPP), 1GB (2017)



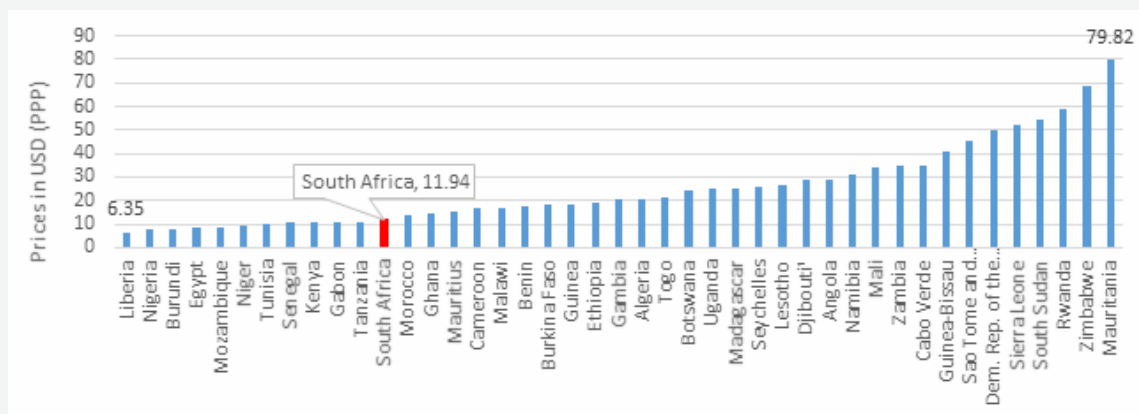
Source: adapted from ITU 2018 Measuring the Information Society Report

Figure 21: Mobile postpaid data prices for BRICS in USD (PPP), 1GB (2017)



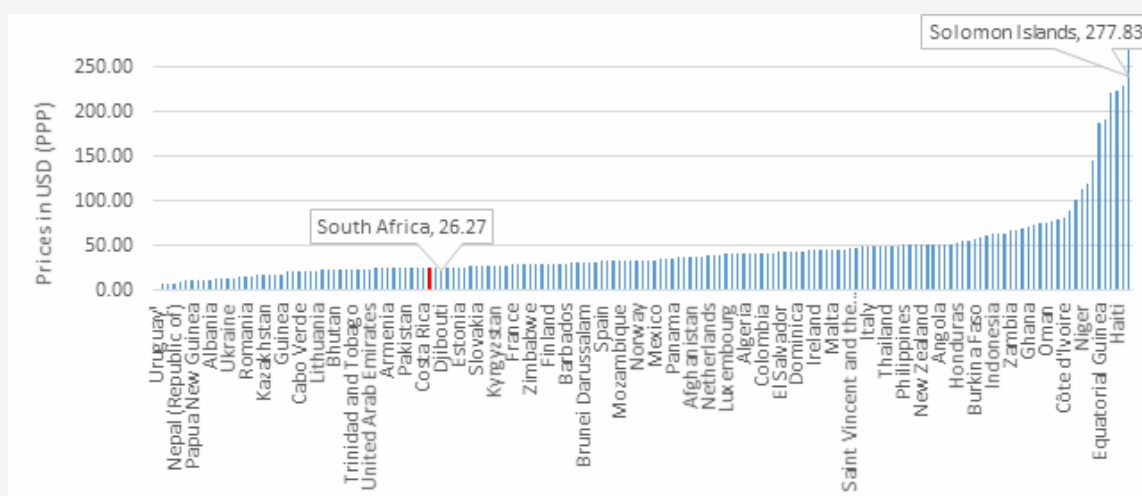
Source: adapted from ITU 2018 Measuring the Information Society Report

Figure 22: Mobile postpaid data prices for African countries in USD (PPP), 1GB (2017)



Source: adapted from ITU 2018 Measuring the Information Society Report

Figure 23: Fixed data prices in USD (PPP), minimum 1GB data cap per month (2017)



Source: adapted from ITU 2018 Measuring the Information Society Report

- 167 countries. For the 161 countries common to both samples, South Africa's ranking has fallen from 32nd in 2016 to 36th in 2017.
- 142.2 For the BRICS countries, South Africa has remained the best priced out of the five countries.
- 142.3 For the African countries, South Africa's ranking has fallen from 7th place out of 45 countries in 2016 to 12th out of 43 countries in 2017. For the 41 African countries common to both samples, South Africa's ranking has fallen from 7th place in 2016 to 12th place in 2017.
143. The latest prices for fixed data,¹²⁸ from the 2018 Measuring the Information Society Report, show South Africa's fixed data price of USD 26.27 (PPP) as ranking 47th out of the 165 countries that have PPP dollar values, which is a significant improvement from its previous 112th rank (of 172 countries) in 2016. The price itself has also decreased from USD

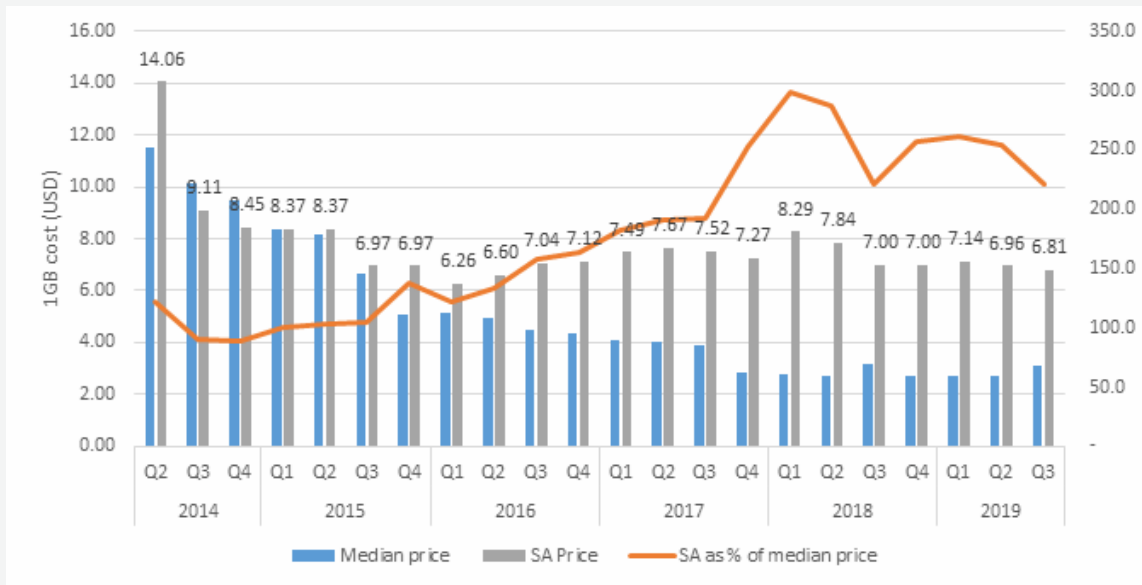
45.13 (PPP) to USD 26.27 (PPP) for 1GB fixed data at 1.0 Mbit/s. Again, both the previous 2016 ITU price data and the 2017 data (in Figure 23 above) show the relatively stronger benchmark performance for South Africa's fixed data prices compared to its mobile data prices (particularly its prepaid data prices).

RIA data update

144. The RIA research presented in the Provisional Report as well as the updated data and figures shown here both highlight the same general picture for South Africa's data prices in that prepaid mobile data prices in South Africa are still high when compared to other African countries and South Africa has performed increasingly poorly relative to other African countries.
145. The 13 and 42 country comparisons¹²⁹ from the Provisional Report using RIA RAMP index data have been updated up until Q3 2019 (in Figure 24 and Figure 26 respectively below), although the sample sizes have been

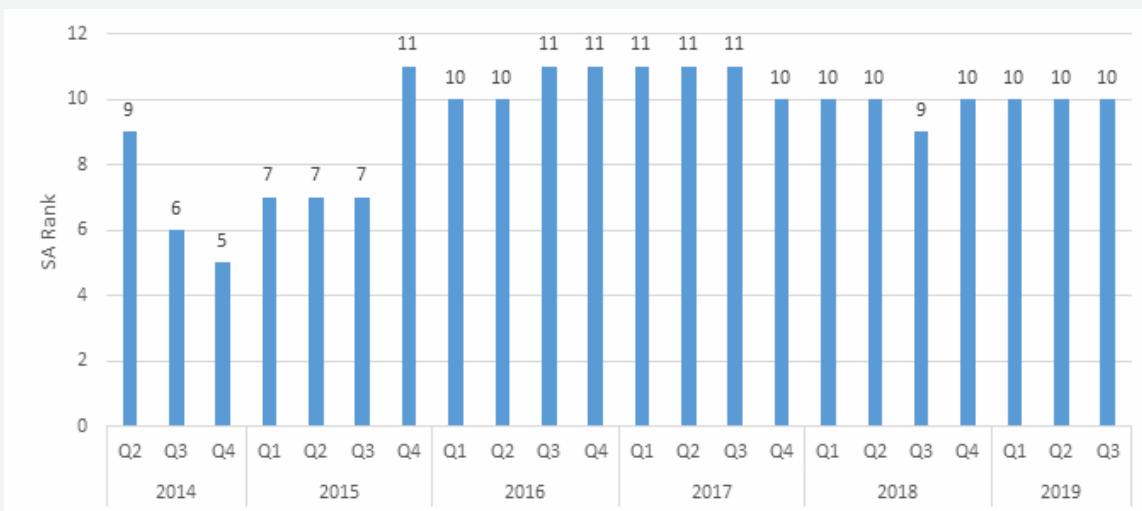
128 The ITU fixed broadband sub-basket refers to the monthly price for an entry-level fixed-broadband plan with a minimum monthly data allowance of 1GB for a minimum advertised download speed of 256 kilobits per second
 129 This is an update of Figure 15 and Figure 17 in the Provisional Report

Figure 24: Comparison of 1GB price for SA against 11 African countries (Q2 2014 to Q3 2019)



Source: RIA RAMP Index and data submissions to the Commission (2019)

Figure 25: SA rank for 1GB price against 11 African countries (Q2 2014 to Q3 2019)



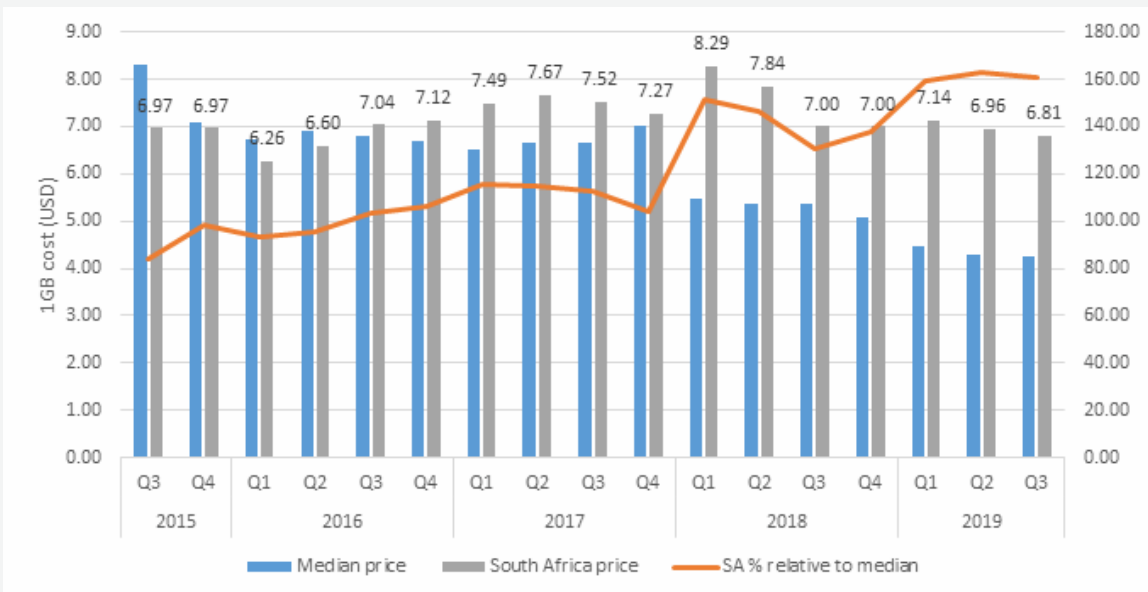
Source: RIA RAMP Index and data submissions to the Commission (2019)

adjusted to account for missing data.¹³⁰ Both country comparisons show that South Africa's 1GB prepaid data prices have generally been poorer than most African country prices in these samples. Although the figures show that the actual USD price for a 1GB prepaid

bundle in South Africa decreased in Q2 and Q3 of 2018, as well as in Q2 and Q3 of 2019, the figures still show that overall South Africa has performed increasingly poorly over time relative to other countries when looking at its prices as a percentage of the median price.

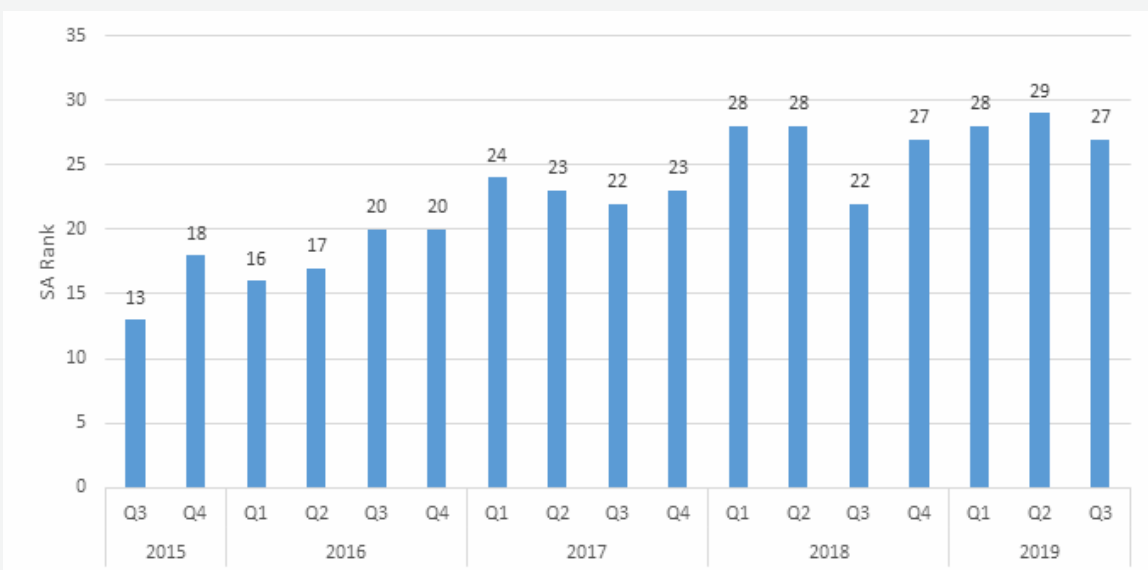
130 The 13 country comparison has been updated to reflect the 12 African countries for which data is available across the period Q2 2014 - Q3 2019 and the 42 country comparison now reflects 37 countries to account for missing country price data for the period Q3 2015 to Q3 2019

Figure 26: Comparison of 1GB price for SA against 36 African countries (Q3 2015 to Q3 2019)



Source: RIA RAMP Index and data submissions to the Commission (2019)

Figure 27: SA rank for 1GB price against 36 African countries (Q3 2015 to Q3 2019)



Source: RIA RAMP Index and data submissions to the Commission (2019)

146. South Africa’s ranking over time, as seen in Figure 25 above,¹³¹ shows a slight improvement in Q3 of 2018. In Q4 2018, South Africa’s ranking dropped back to 10th

out of the 12 countries where it remains. The ranking for South Africa against the larger sample of 36 other African countries (see Figure 27 above)¹³² shows an initial

131 This is an update of Figure 16 in the Provisional Report using updated RIA data

132 This is an update for Figure 18 in the Provisional Report

improvement in Q3 2018, after which the rank generally weakens in the subsequent quarters, with the latest ranking for South Africa at 27th cheapest of the 37 African countries.

147. Overall, once updating for the most recent RIA RAMP Index data (as reflected in the figures above), the historical comparison of South Africa's 1GB prepaid data prices against other African countries still shows a poor relative performance and one which has worsened over time.

Tarifica data update

148. This section briefly covers an update of the data from Tarifica presented in the Provisional Report, although a deeper examination of the data based on communication with Tarifica itself shows that the results, particularly for its 'light-user' profiles, have little value for the purpose of this assessment.

149. Tarifica publishes a quarterly Global Benchmark Report that illustrates the relative pricing of mobile services worldwide and here we look at the updated report for Q1 2019 on consumer mobile tariffs.¹³³ As before, the report shows the cost of mobile services, both prepaid and postpaid, for various consumer classes from major MNOs in 25 countries and 82 major operators. Tarifica's research includes country rankings for mobile prepaid and postpaid plans combining voice, SMS and data, as well as data-only rankings. All prices are converted to US dollars¹³⁴, after which the results are adjusted to account for cost of living differences by using PPP.¹³⁵

150. The latest available Tarifica data shows that South Africa ranks 15th overall in the

prepaid mobile plans for Q1 2019 out of the limited sample of 25 countries, where the overall ranking is based on an average performance score across consumer profiles. This represents a slight improvement from 17th place for Q2 2017. Tarifica's latest benchmark study shows, as seen in the table below, that South Africa's performance in the mobile prepaid data-only category has shown improvement since Q2 2017, but considerably so for light data-only users as it ranked 6th out of 25 countries in Q1 2019 from 14th place in Q2 2017.¹³⁶ For moderate data-only users, there was a slight improvement from 20th place in Q2 2017 to 18th place in Q1 2019, and heavy users stayed the same at 22nd place out of 25 countries. Within the prepaid plan categories, Tarifica's research appears to show that data-heavy consumer profiles in South Africa fair worse than light users, relative to other countries.

151. However, this observation of better performance for light users (and even moderate users) for South Africa must be treated with caution, or even discarded entirely. It is evident that many of the countries that outperform South Africa in terms of the overall ranking - often developed countries - have worse rankings for light users compared to heavy users. For example, countries such as the United Kingdom, United States, Australia, France and Germany rank better than South Africa on the overall ranking but fare relatively worse for the light user profile. As noted in the Provisional Report, this frequently illustrates that there is a lack of smaller bundle sizes in these countries given the lower price and affordability of larger bundles¹³⁷. As such, a larger bundle must be used when calculating the costs for a light-user profile in these countries.

133 Tarifica (2019) *Global Benchmark Report- Study of Consumer Mobile Tariffs Q1 2019*. Submitted on 24 July 2019

134 This conversion is based on the average currency conversion rate between the United States and the selected country throughout the fourth quarter of 2018

135 Tarifica (2019) *Global Benchmark Report- Study of Consumer Mobile Tariffs Q1 2019*. Submitted on 24 July 2019, p.4

136 For Tarifica's 'data-only' user profiles, a light user is described as using 250MB on 3G or better speeds, a moderate user uses 1GB also on 3G or better speeds and a heavy user uses 4GB on 4G service.

137 We previously noted that an examination of selected 2017 Tarifica pricing data showed that some of the countries that outperformed South Africa overall, while ranking worse than South Africa for light users and better for heavy users, did not offer 500MB 'data-only' offers, which would suggest these rankings were due to the lack of availability of comparable data offer sizes across countries rather than intrinsic performance (Provisional Report, footnote 176)

Table 4: Tarifica overall rankings of mobile prepaid data-only plans (PPP) (Q1 2019)

Ranking	Country	Average Performance	Light User (data only)	Moderate User (data only)	Heavy User (data only)
1st	India	1.78	4	2	1
2nd	Pakistan	4.22	3	1	2
3rd	Turkey	4.33	11	6	3
4th	Sweden	4.56	1	5	8
5th	United Kingdom	5.89	13	10	9
6th	Kenya	6.78	2	4	6
7th	Brazil	7.00	10	7	4
8th	Nigeria	8.44	5	3	10
9th	Australia	9.11	15	15	5
10th	Germany	9.67	7	8	14
11th	Mexico	10.44	17	13	18
12th	Singapore	12.00	8	9	11
13th	United States	13.80	21	20	16
14th	France	13.89	20	19	15
15th	South Africa	14.44	6	18	22
16th	Malaysia	15.10	16	12	7
17th	Thailand	17.22	18	16	13
18th	Qatar	17.67	22	22	19
19th	Oman	18.11	12	17	24
20th	South Korea	18.56	9	14	20
21st	Bahrain	20.78	24	23	17
22nd	Spain	20.78	14	11	12
23rd	Saudi Arabia	20.80	23	21	23
24th	Kuwait	22.33	25	24	21
25th	United Arab Emirates	22.44	19	25	25

Source: adapted from Tarifica Global Benchmark Report, Q1 2019

152. Following submissions received, we confirmed with Tarifica that many of the countries that performed worse than South Africa on the light-user profile in fact have no data bundles of less than 500MB and in some cases some operators used in the calculations had no bundles of less than 1GB. For the Q1 2019 Global Benchmarking Report, of the 19 countries that ranked worse than South Africa for the light-user profile for prepaid data-only plans, 10 countries had no data plans of less than 500MB. Hence the moderate- and heavy-

user profiles are a fairer indicator of overall performance.

153. When looking at Tarifica's latest results regarding the relative pricing of postpaid data-only services, as seen in the table below, South Africa also ranks 15th overall in the postpaid mobile data only plans for Q1 2019 out of the 25 countries.¹³⁸ This is a marginal improvement from 16th place for Q2 2017.

138 The overall rank is based on an average performance score across offers with a mixture of prepaid voice/SMS/data, offers with prepaid voice/SMS, and offers with prepaid data only

Table 5: Tarifica overall rankings of mobile postpaid data-only plans (Q1 2019)

Ranking	Country	Average Performance	Light User (data only)	Moderate User (data only)	Heavy User (data only)
1st	Turkey	1.89	3	1	1
2nd	Pakistan	2.33	1	2	3
3rd	United Kingdom	4.00	5	4	5
4th	India	5.56	7	5	2
5th	France	5.78	9	7	6
6th	Brazil	6.11	10	8	12
7th	Sweden	6.50	12	9	7
8th	Australia	9.22	13	11	4
9th	Germany	9.40	6	10	8
10th	Mexico	9.70	8	15	18
11th	Singapore	11.10	16	14	13
12th	Nigeria	13.00	NA	NA	25
13th	Kenya	13.67	4	3	11
14th	South Korea	14.00	11	16	23
15th	South Africa	14.40	2	6	19
16th	Spain	14.44	15	13	15
17th	United States	15.00	21	19	17
18th	Malaysia	15.11	18	17	10
19th	Thailand	15.56	14	12	9
20th	Qatar	18.30	17	18	16
20th	Bahrain	20.67	23	20	14
22nd	Saudi Arabia	20.70	20	21	20
23rd	Oman	21.56	24	23	24
24th	United Arab Emirates	21.60	19	22	22
25th	Kuwait	22.60	25	24	21

Source: adapted from Tarifica Global Benchmark Report, Q1 2019

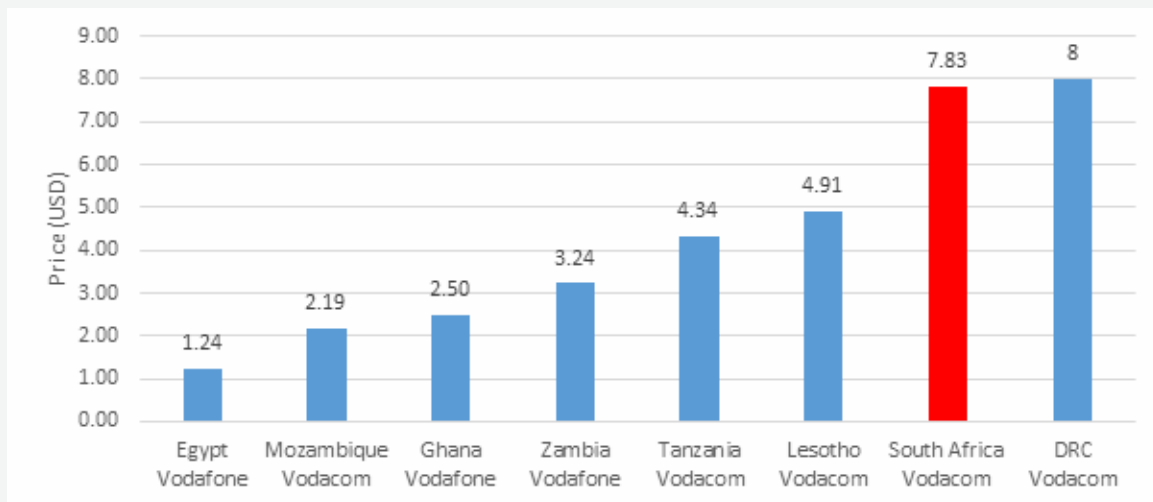
154. For Tarifica's postpaid *data-only* user profiles,¹³⁹ South Africa again performs better when it comes to what Tarifica defines as 'light users', ranking 2nd best for postpaid light data-only users, 6th best for moderate data-only users and 19th best for heavy data-only users. South Africa's ranking for light users mirrored that of Q2 2017 at 2nd place, and its ranking for moderate users improved slightly from 7th place in Q2 2017. South Africa's heavy user ranking deteriorated from 14th place previously in Q2 2017. However, we note again (as for the prepaid

data above) that South Africa's performance in terms of the light-user profile should be viewed with caution and in the postpaid area, the moderate-user profiles would also be affected by the same issue.

155. Overall, based on their more recent pricing data from the Q1 2019 report, Tarifica notes that postpaid 'data-only' plans for South Africa performed better than the prepaid data-only market, although this observation is also severely compromised by the lack of appropriately sized bundles and plans in other countries.

139 For Tarifica's 'data-only' postpaid user profiles, a light user uses 500MB on 3G or better speeds, a moderate user uses 2GB on 3G or better speeds and a heavy user uses 8GB on 4G

Figure 28: Vodacom 1GB data costs across Africa (2019)



Source: Vodacom and Vodafone websites (updated November 2019)

Note: Countries included here have a Vodacom mobile service offering where 1GB 30-day tariffs are available (Zambia, Tanzania, Lesotho and South Africa) or based on the cheapest method for a consumer to have 1GB of data over a month based on available bundle sizes and validities. For instance, DRC's figure is calculated from four weekly 275MB bundles priced at 200 units where units represent USD cents; Egypt from a 1.1GB bundle; Ghana two 450MB plus two 80MB; Mozambique from three 200MB and one 400MB bundle). Vodafone Zambia lost its license around September 2019 hence their website is defunct – we used April data as it is the latest record at our disposal. Countries not shown here (but included in the Provisional Report), include Vodacom Nigeria, Vodafone Albania, and Vodafone Angola. These countries are excluded due to Vodacom submitting it does not have a mobile service provider in Nigeria, Albania not being part of Africa, and Vodacom Angola is excluded due to Vodacom submitting it is not directly present in the market but through a partner agreement with Movitel

156. Taking into account the concerns regarding the availability of appropriate data bundles and plans in other countries in Tarifica's limited 25-country sample, it is not clear that there has been any improvement for South Africa in the Q1 2019 results relative to the Q2 2017 results. The heavy user ranking for prepaid has not changed and for postpaid it has deteriorated. The moderate-user and light-user rankings in prepaid, and the postpaid moderate-user ranking, have all improved marginally, while the light-user profile for postpaid has shown a greater degree of improvement, although it is not clear how much this has been driven by changing plans. Therefore, in reviewing this evidence, it is not clear that any real improvements in relative performance have taken place.

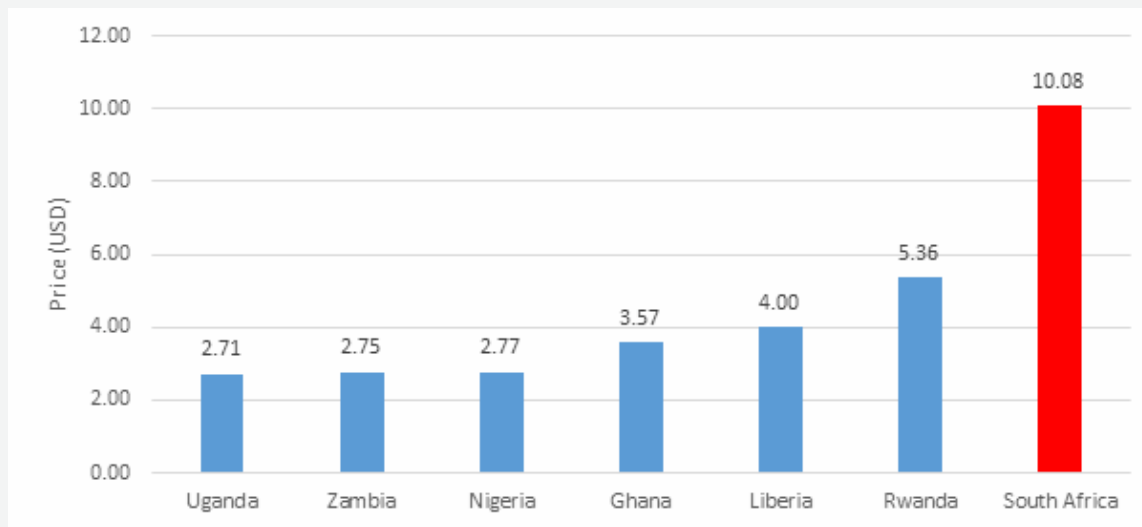
Operators' operations in Africa

157. Despite the operators' arguments (particularly from Vodacom and MTN) regarding the unreliability of the benchmarking results and the errors in

comparing their prices from operations in different African countries, when looking at more recent and relevant price data it seems evident that Vodacom and MTN still compare poorly against their other businesses in African countries.

158. While the analysis of Vodacom and MTN in South Africa against their operations in other countries reported on in the Provisional Report was conducted by ICASA, the Commission has performed checks on the most recent pricing levels where available to provide an updated view of the analysis. In terms of the data prices across Vodacom's African operations, the figure above shows that the price (in USD) charged in South Africa for 1GB of data is noticeably higher and more expensive than all the other African countries but the DRC. The price for 1GB in South Africa, at USD 7.83, is over six times the 1GB price of USD1.24 available in Egypt and more three and a half times more expensive than in neighbouring Mozambique.

Figure 29: MTN 1GB data costs across Africa (2019)



Source: MTN websites (updated November 2019)

Note: Countries included here have an MTN mobile service offering where 1GB tariffs are available or based on the cheapest method for a consumer to have 1GB of data over a month based on available bundle sizes and validities. For instance, the price for Liberia is that of two bi-monthly 819.7MB bundles; Uganda's figure is calculated from four 300MB bundles; For Ghana and Rwanda we used the 2GB and 5GB bundles respectively. For Zambia, the price indicated is for April 2019 as new data was not available on MTN's website at the time of publication

159. When conducting similar desktop research for MTN's pricing across its African operations, and across different bundle sizes where available, the same findings hold as in Vodacom's case - where MTN's data prices charged in South Africa are significantly higher than its prices charged in other African countries. The figure above, showing the MTN data prices for the 1GB bundle size, clearly indicate that the data prices (in USD) in South Africa are substantially higher than the prices in available comparator countries in Africa for the 1GB bundle. Additionally, as seen with Vodacom, the operator's price for data in South Africa is also markedly more expensive than the cheapest 1GB MTN price.

160. Furthermore, when comparing the 2019 prices for 1GB mobile data to earlier prices across its African operations from 2017,¹⁴⁰ the Figure 30 and Figure 31 show

that both Vodacom South Africa and MTN South Africa have historically offered the most expensive 1GB price relative to their other African operations and their relative positions, in terms of 1GB prices,¹⁴¹ have not changed substantially.

Operators' headline prices largely unchanged

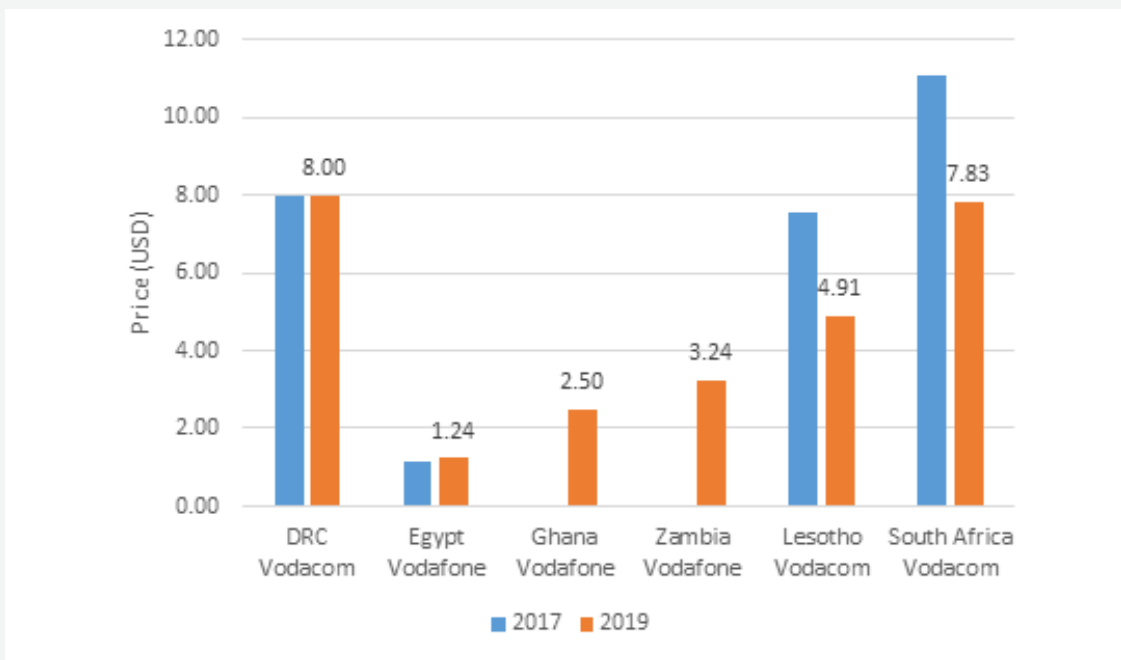
161. While Vodacom and MTN have argued that the Commission's assessment relied on outdated data (and by implication rendering the assessment obsolete), it is important to note that headline prices for the larger two operators have shown little overall movement in the last few years, and thus one would not expect any improvement in South Africa's pricing performance relative to other countries being driven by them. When comparing South Africa's prices for the 1GB data bundle across various validity periods¹⁴² in 2017 to the more recent prices

140 Q3 and Q4 2017 prices taken from ICASA's Bi-annual Tariff report 2017, where no prices are available for Vodafone Ghana or Zambia in ICASA's report

141 MTN Liberia's 2017 1GB price has been converted from the available price for 2GB from ICASA's Bi-annual Tariff report 2017.

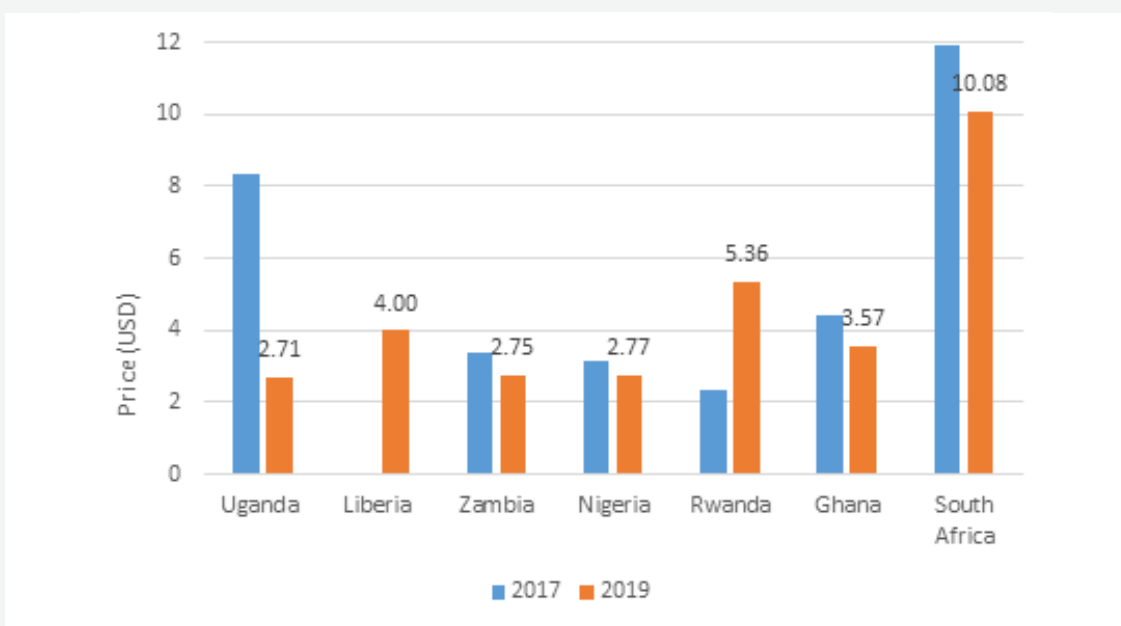
142 Data submitted by Tarifica to the Commission

Figure 30: Vodacom 1GB retail data tariffs across Africa (2017 vs 2019)



Source: ICASA Bi-annual Tariff report 2017 and desktop research as per Figure 28

Figure 31: MTN 1GB retail data tariffs across Africa (2017 vs 2019)



Source: ICASA Bi-annual Tariff report 2017 and desktop research as per Figure 29

(as of 18 November 2019), the tables below show that both Vodacom and MTN's mobile data pricing in South Africa has not changed much over time, at least not for the better. For example, a standard once-off 30-day 1GB bundle from Vodacom (see Table 6 below) remained at R149 for a long period of time, and only dropped recently (towards the end of 2019) to R115 while the 30-day 1GB bundle purchased through its app store is priced at R99.¹⁴³ Vodacom still maintains the price of R149 for the 1GB when purchased as a recurring bundle.¹⁴⁴ Although Vodacom recently dropped the prices of two of its sub-1GB data bundles namely the 500MB (from R100 to R79) and the 250MB (from R63 to R49), the prices of its smallest data bundles, i.e. 100MB and smaller, remain unchanged. For Vodacom, the table below indicates that changes for other data bundles are due to a marginal increase in headline prices. For example, a 14-day 1GB data bundle that used to cost R99 in 2017 now costs R100 in 2019, and similarly a 7-day 1GB bundle has increased marginally from R79 to R80 in 2019.

Table 6: Vodacom South Africa 1GB data prices per validity period (2017 and 2019)

Validity (days)	2017	2019
30	R149	R115 ¹⁴⁵
14	R99	R100
7	R79	R80

Source: Tarifica data and desktop research (as of 18 November 2019¹⁴⁶).

162. Similarly, the table below shows MTN South Africa's older data prices from 2017, compared to its more recent prices. A similar observation for Vodacom holds for MTN. While the 1GB 30-day bundle has decreased slightly to the same level as Vodacom's previous price, prices for the shorter-validity 1GB bundles have increased.

Table 7: MTN South Africa 1GB data prices per validity period (2017 and 2019)

Validity (days)	2017	2019
30	R160	R149
14	R89	R110
7	R65	R70

Source: Tarifica data and desktop research (as of 18 November 2019¹⁴⁷).

163. This data indicates that the headline prices for the 1GB data bundles from Vodacom and MTN have not changed to any significant degree since 2017 (although Vodacom introduced price cuts towards the end of 2019), even when looking at the headline prices for the shorter validity 1GB bundles. Thus, the submissions around the age of data used in the benchmarking analyses referred to by the Commission seem largely irrelevant. With headline prices generally remaining static in South Africa, South Africa's performance relative to other countries is only likely to worsen when one considers more recent international price benchmarking data.

164. What this section does show is that the more recent internal price comparison data re-emphasises the Commission's initial findings as it shows South Africa's data price performance has remained poor since the earlier reported data and has often deteriorated relative to other countries, as shown by the analysis of ITU data above.

Omitted benchmark evidence rightfully excluded

165. As indicated above, MTN has referred to a number of indices not used by the Commission in its assessment of international prices. MTN's Table 2 in its submission regarding the Provisional Report lists a number of indices which may be

143 Available on: <https://www.vodacom.co.za/vodacom/shopping/data/prepaid-data>. [Accessed: 18/11/2019]
 144 Available on: <https://www.vodacom.co.za/vodacom/shopping/data/prepaid-data>. [Accessed: 18/11/2019]
 145 The price is R99 on the Vodacom App and remains R149 on the pre-paid recurring plan
 146 Available on: <https://www.vodacom.co.za/vodacom/shopping/data/prepaid-data>. [Accessed: 18/11/2019]
 147 Available on: <https://www.mtn.co.za/Pages/MTNDataBundle.aspx>. [Accessed: 18/11/2019]

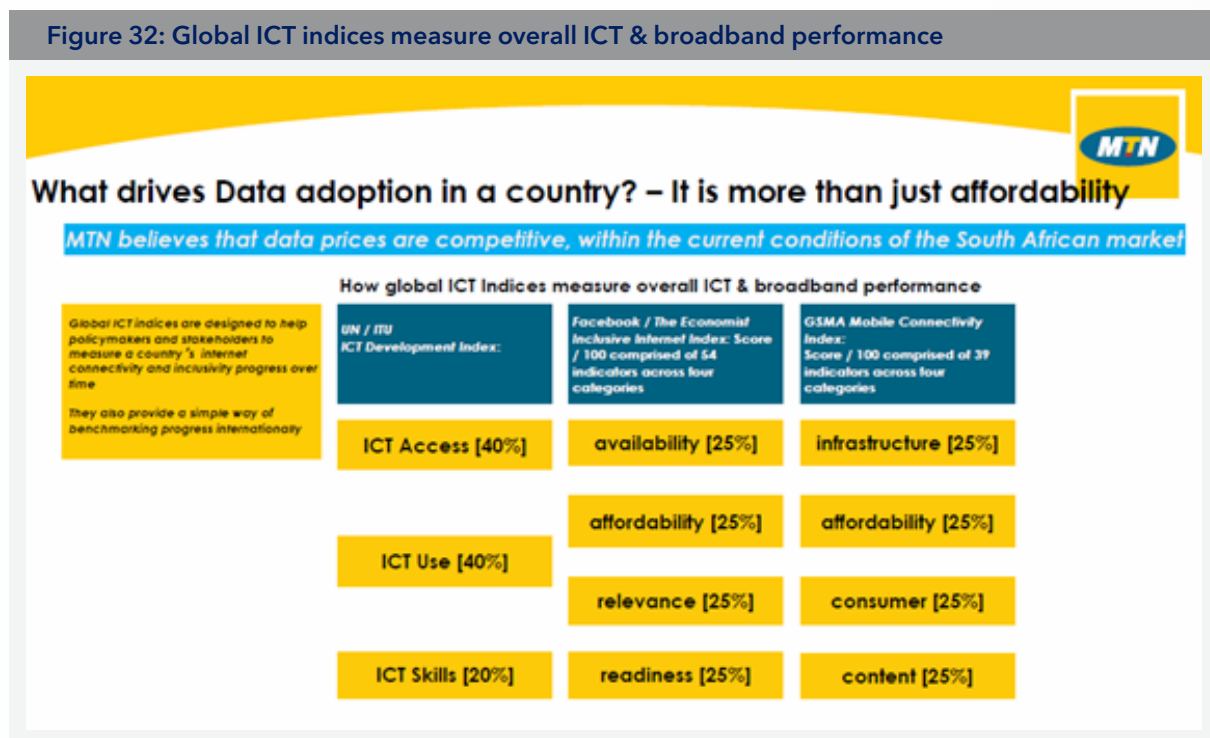
broadly described as overall performance indices (particularly the GSMA's Mobile Connectivity Index). However, observations based on such indices have been presented by MTN previously, and the Commission already articulated its concerns with these types of overall performance indices in Appendix E of the Provisional Report. The Commission refers MTN to Appendix E for a more detailed discussion of the Commission's views in this regard, where this section will thereby serve to provide a simple summary of these views.

166. In its presentation at the Public Hearings, MTN showed a display of how these indices are constructed where each index is made up of three to four weighted categories to create an overall ICT broadband performance and internet affordability score. As shown in the figure below, these indices do not measure data prices, but instead capture an overall score of a country's relative performance for its overall ICT and broadband services. The 'affordability' category is only one of four inputs to the overall score and does not exist as an input category in the 'UN/ITU ICT Development Index'.

167. As further explained in Appendix E of the Provisional Report, the Commission views these indices as, for the purposes of the Inquiry, irrelevant and inappropriate measures of mobile data prices or value for money. This is because, in addition to the aforementioned reservations, these indices broadly conflate overall ICT performance and broad affordability measures with data prices and also offer limited probative value (as the Inquiry's terms of reference specifically details high data costs as relevant to the inquiry, not the broader ICT and broadband performance).

168. Furthermore, such affordability and more general performance indices are likely to be correlated with a country's GDP per capita and thus the indices may also be driven by this more than actual data prices. Additional concerns with these indices include the fact that mobile operators often have little or no influence over important components of the index. In the GSMA Mobile Connectivity Index, for example, operators do not control components of the index such as basic skills and gender, which comprise 12.5% of the index. While these measures may still have

Figure 32: Global ICT indices measure overall ICT & broadband performance



Source: MTN presentation at the Data Inquiry Public Hearings (2018).

some value depending on the question being asked, they are not relevant to the specific question of data prices.

169. Furthermore, due to the country's high inequality, South Africa's ranking across these indices does not necessarily depict the reality in terms of mobile data pricing for most South African citizens. This is true of the 'affordability' measures in particular as GDP per capita is likely to overestimate the income of a typical South African and therefore also the so-called 'affordability' of mobile data in the country.
170. With respect to Vodacom's submission regarding the use of the word "affordability" in the ToR and the Provisional Report, and by implication the relevance of the affordability indices and measures, the view of the Commission is that the inclusion of the word 'affordability' cannot be interpreted as being explicitly linked to a specific terminology or a certain analytical approach used in telecommunications, nor does it create any obligation to consider such measures.

Cost, quality and other non-price factors

171. The Commission's benchmarking assessment was criticised by operators for failing to account for potential differences in cost and quality in South Africa relative to other countries.¹⁴⁸ As recognised by the Commission, benchmarking assessments can provide indicative evidence of whether prices are higher in South Africa and whether there may exist cost or competition factors in South Africa that are resulting in prices that are higher than they ought to be. As discussed, the benchmarking assessment in the Provisional Report merely indicated that an inquiry or further assessment of cost, competition, and other factors was warranted.
172. While the operators have raised objections as to the weight that can be placed on the benchmarking assessment (which is in fact

in line with the Commission's approach to not put undue weight on the assessment), the operators themselves fail to show that the additional non-price factors such as quality or other cost factors would ultimately be significant. Vodacom appears to argue that a "middle of the road" ranking is in fact good but offers only limited evidence of cost disadvantages for South Africa and does not (understandably) quantify or estimate the effect of these factors on pricing. However, this by itself is insufficient to argue that prices are so low in South Africa that further consideration of competition and cost factors (as the Commission has done) is unmerited. MTN, while pointing to faults and difficulties with the Commission's analysis, does itself acknowledge that "*it is impossible to adequately account for all these factors*"¹⁴⁹ due to a) the fact that all the necessary data is unlikely to be available and b) adequately controlling for all factors would be complex as, for example, factors may be interrelated and may impact costs differently depending on the combination found in each country.

173. It is clear from operators' responses that they have submitted many objections and hypothetical problems, but neglect to present any credible evidence-based, alternative views to what has been presented by the Commission. This is especially telling in the context where they are in fact able to do so for their own operations across other African countries.
174. Notwithstanding the above, the Commission did consider each of the various factors pointed to in the submissions regarding the Provisional Report as potentially explaining or mitigating the relative pricing position in the benchmarking assessments. The more detailed assessment is contained in Appendix B. The main insights from this analysis include the following:
 - 174.1 Spectrum, which (being unassigned) appears to be pointed to as the main

148 Vodacom's submission, 14 June 2019, p.71 (Non-Confidential), 75-85; MTN submission, 14 June 2019, p.7 (Non-Confidential); Telkom's submission, 14 June 2019, p.10-13 (Non-Confidential)

149 MTN response to DSMI Provisional Report. 14 June 2019, p. 11, para 2.11 (Non-Confidential)

drivers of higher costs in South Africa, does not in fact explain the high data prices in South Africa (and higher relative prices). There is no consistent or clear relationship between countries' pricing and whether spectrum has been fully assigned or not. Furthermore, Vodacom's own evidence shows that the cost implication of additional spectrum not being assigned in South Africa is extremely limited and therefore unlikely to explain the differences in prices for South Africa as against other countries.

- 174.2 Other key factors identified in submissions to the Commission such as network coverage and technology; speed and latency; land area, population size, population density and urbanisation rates; and GDP per capita show no strong or clear relationship with South Africa's pricing outcomes relative to other countries. Thus, it is unlikely that these factors could provide any strong explanatory power for understanding why South Africa's prices are higher than many other countries, as shown by the benchmarking assessments highlighted by the Commission.

Failure to address the insights from the RIA data

175. A key piece of analysis in the Provisional Report was the assessment of South Africa's performance relative to other African countries over time using the RIA data. Besides the primary observation that South Africa compared poorly against other African countries, the Commission also found that South Africa performed increasingly poorly over time. This is now also confirmed by the ITU data discussed above. The Commission concluded that the observed deterioration in performance was unlikely to be driven

by the various non-price factors that the operators had already pointed to. The only criticisms of this analysis were the following (we deal with each below):

- 175.1 Regarding the conclusions drawn from the analysis (i.e. that South Africa has performed increasingly poorly relative to its African counterparts), this is only addressed by MTN. While not addressed in its main submission, Appendix A to MTN's submission (a report by Mobile Market Development)¹⁵⁰ and Annexure B (by RBB Economics)¹⁵¹ argue against the Commission's finding, largely pointing to the impact of exchange rates.
- 175.2 Regarding the second element (i.e. the Commission's conclusion that South Africa's increasingly poor performance is unlikely to have been driven by the various non-price factors), Vodacom merely points to the issue of spectrum and argues that the other countries did not face the same spectrum constraints as South Africa.¹⁵² MTN (in its Appendix B by RBB Economics) argues that the impact of country-specific factors can change over time.

176. *Impact of exchange rates.* RBB merely points to the use of simple USD exchange rates by RIA (rather than PPP exchange rates). It says that benchmarks based on such conversion rates "are exposed to distortions created by currency fluctuations"¹⁵³ and therefore "results may be driven by shifts in exchange rates rather than relative price competitiveness"¹⁵⁴. RBB goes no further than that.
177. Mobile Market Development conducts a superficial analysis of the impact of exchange rates with a number of shortcomings:

150 MTN Submission to the Commission, 14 June 2019, Appendix A Mobile Market Development Report (Non-Confidential)

151 MTN Submission to the Commission, 14 June 2019, Appendix B RBB Report on International benchmarking (Non-Confidential)

152 Vodacom submission to the Commission, 14 June 2019, p. 16 (Non-Confidential)

153 MTN Submission to the Commission, 14 June 2019, Appendix B RBB Report on International benchmarking page 7 (Non-Confidential)

154 MTN Submission to the Commission, 14 June 2019, Appendix B RBB Report on International benchmarking, page 7 (Non-Confidential)

Figure 33: CAGR per country for 13 African countries from Q2 2014



Source: calculations based on RIA submissions to the Commission (2019) as well as quarterly average exchange rates from Investing.com. and XE.com. Countries ranked from smallest to largest, according to CAGRs for the period to 2019Q3.

177.1 Firstly, it focuses narrowly on one output in the Commission’s Provisional Report - Table 4 - rather than the other data presented by the Commission in Figures 15 to 18 which includes more countries over a longer period. Here it merely looks at movements in exchange rates for each country, but does not consider the actual impact of these movements. It also only considers the movement in annual exchange rates from 2016 to 2017 for the countries in the Provisional Report’s Table 4. It then considers ITU prices in USD and USD PPP terms and the change from 2016 to 2017 for the same six countries again.

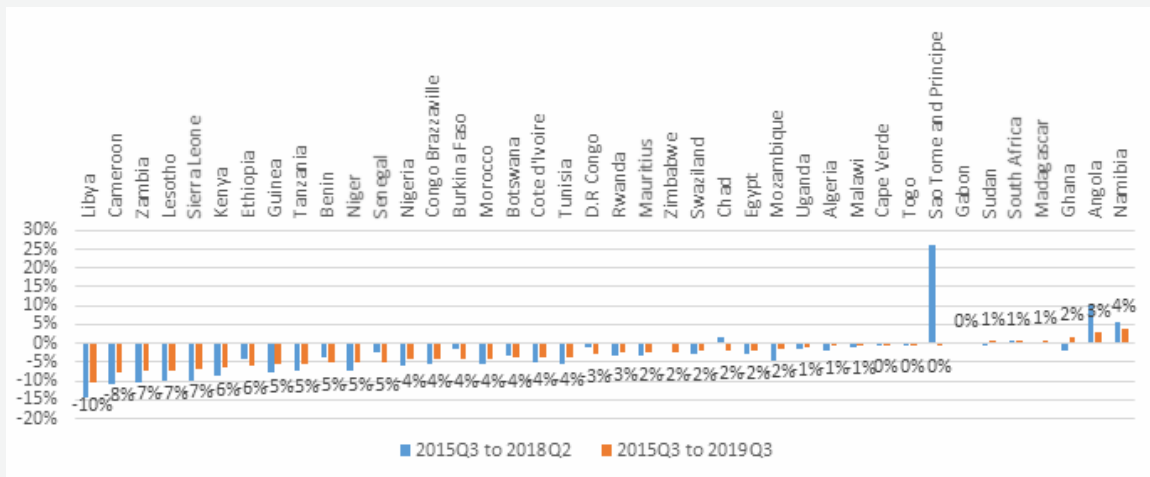
177.2 Secondly, when it does purport to consider Figures 15 to 18 from the Provisional Report, it considers only the movement in the Rand/USD exchange rate over time and compares this to the price for a 500MB bundle from ITU. It shows that a weakening of the RAND/USD rate correlates with a decrease in the USD-denominated price for a 500MB bundle. This is uncontroversial, but Mobile Market Development then

fails to make any comparisons across countries and thus the observation is largely meaningless.

178. In addressing the question of the impact of exchange rates, what the Commission did to confirm the previous results and does again (and presents below) is compare the movements of prices in the nominal currencies. What this shows is even when one looks at the local currency and removes any influence of exchange rate fluctuations, other countries in Africa have on average seen price decreases whereas South Africa has not (or at least not to the same degree).

179. This is shown above in Figure 33 for the countries and prices in Figure 15 of the Provisional Report (13 countries) and the updated Figure 24 above (12 countries). Within this group of countries, the best performing country (in terms of its CAGR) for both periods is Cameroon with a CAGR of -9% for the period Q2 2014 to Q2 2018, and -7% for the period Q2 2014 to Q3 2019. Cameroon’s 1GB data prices, in absolute terms, decreased by 79.5% from FCFA 9,995 in Q2 2014 to FCFA 2,046 in Q3 2019.

Figure 34: CAGR per country in Figure 17 of Provisional Report (updated to Q3 2019)



Source: calculations based on RIA submissions to the Commission (2019) as well as quarterly average exchange rates from Investing.com. and XE.com. Countries ranked from smallest to largest, according to CAGRs for the period to 2019Q3.

180. Figure 34 above illustrates the analysis for the larger sample of countries as per the Provisional Report’s Figure 17 (42 countries) and updated Figure 26 above (37 countries) and it shows the same result overall. Within the group, the best performing country (in terms of its CAGR) in the earlier period (Q3 2015 to Q2 2018) as well as the longer period (Q3 2015 to Q3 2019) is Libya with a CAGR of -14% and -10% respectively. Considering the entire period, Libya’s 1GB data price has decreased by 84.2% from LD 102.56 in Q3 2015 to LD 16.20 in Q3 2019. The figures underpinning the assessment of price changes per country for each period (as per Figure 33 above and Figure 34 above) in local currencies have also been tabulated and are included in Appendix B as Table 47 and Table 48.

181. *Relevance of increasingly poor relative performance.* In respect of the analysis of the RIA data by the Commission, Vodacom’s only argument is that South Africa’s “spectrum constraint is becoming more significant over time”¹⁵⁵ and points to this assertion (and RIA’s acknowledgment of additional costs from unassigned spectrum) as a basis for Vodacom’s worsening relative

performance. However, it is not clear to the Commission why the other African countries would not also have become more constrained over the period, unless data usage is not growing in these countries or operators are increasing capacity through additional sites to a significantly greater degree than Vodacom in South Africa, both of which appear unlikely. The GSMI data shows that none of these African countries had assigned the digital dividend spectrum by 2017 and thus it is unlikely that there were any significant shifts in spectrum assignments in the period.

182. Furthermore, Vodacom’s own evidence (as discussed above) also shows that that the spectrum constraint faced by Vodacom did not result in significant additional costs.

183. RBB Economics, in MTN’s Annexure B, merely argues that non-price factors can change over time. MTN does not point to any specific factor that has changed over time in South Africa that may explain the outcomes of the Commission’s assessment of RIA’s data. While RBB Economics presents a hypothetical example of a country with non-conductive geography and argues that it may see greater cost impacts in

155 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p. 79 (Non-Confidential)

expanding coverage¹⁵⁶, however even in this hypothetical example the proportion of costs affected would be relatively small, and those costs would only be affected to a limited degree. The impact on costs relative to other countries would therefore be marginal at best. Also, South Africa has had high and unchanging coverage levels throughout this period.

184. While RBB lists a number of factors that it claims “do change over time”¹⁵⁷ in countries, even to the extent that this is true it is unlikely that truly significant shifts in these factors would occur over the three- or four-year period assessed. It is also just as possible that certain non-price factors may affect South Africa positively. Unlike Vodacom, RBB Economics does not even identify any specific factor that could explain the results observed. If the non-price factors were to be driving these significant changes in relative performance for South Africa over time, one would expect that these factors would be easily identified by the operators. Therefore, on a balance of probabilities, it is unlikely that such factors would be the chief driver of the clear results observed.
185. Furthermore, while we state above that the assessment in Section 3 is clearly not used to make conclusions on competition concerns, on a balance of probabilities this evidence does clearly suggest a competition concern in the South African market.

Benchmarking evidence not reflective of only a small portion of the market

186. Vodacom argues that the “third party price benchmarking studies quoted by the CC primarily rely on only two data bundles (1GB and 500MB) with a 30 day validity period for general use, [X]”¹⁵⁸. It then goes on to state

that “(g)iven their insignificance, it is unlikely to be the case that 500MB and 1GB general use bundles with a 30 day validity will be a good proxy for how competitive mobile prices are in general”¹⁵⁹. However given that these bundle prices are clearly related to one another, the effective representativeness of these bundles is more significant than [X] that they account for.

187. It is also clear that prices in the market and in particular prices of the larger operators such as Vodacom are related to one another. A 1GB data bundle with 1-week validity is cheaper than one with a 30-day validity. Similarly a 1-hour bundle is cheaper than a 1-day bundle and 1-day bundle is cheaper than a 1-week bundle. Thus prices for the various possible validity periods are clearly related to one another. Similarly, when one considers bundles of the same validity period, a 1GB bundle will cost more than a 500MB bundle (otherwise no one would ever purchase the 500MB bundle) and the ‘per GB’ price of the 500MB will exceed the 1GB bundle¹⁶⁰. Thus different bundle sizes are also clearly related to one another. A URL bundle of a certain size will also cost less than a bundle of the same size but without restrictions.
188. We also note in terms of usage, Vodacom’s own data suggests that these bundles account for a greater share of in-bundle data usage. Figure 33 suggests monthly bundles between 600MB and 1GB account for more than [X] of total consumption¹⁶¹. While this may include free or promotional data, what is clear from the data presented by Vodacom is this category accounts for the greatest proportion of consumption and is thus not insignificant. Thus given that we are looking at the largest bundles in terms

156 MTN Submission to the Commission, 14 June 2019, Appendix B RBB Report on International benchmarking (Non-Confidential), page 9

157 MTN Submission to the Commission, 14 June 2019, Annexure B RBB Report on International benchmarking (Non-Confidential), page 9

158 Vodacom submission to the Commission, 14 June 2019, p. 70 (Confidential)

159 Vodacom submission to the Commission, 14 June 2019, p. 74 (Non-Confidential)

160 Of course it may be equal in certain exceptional cases, but will never be lower as consumers would never then buy the 1GB bundle

161 The average of the relevant figures for the three incomes groups is more than this figure. Vodacom submission to the Commission, 14 June 2019, p. 48 (Confidential)

of usage and given that pricing points of various bundles sizes and validities are all related to each other, the assessment of the 1GB and 500MB 30-day bundles clearly are representative of pricing more generally and are clearly relevant.

189. As shown in the Provisional Report, benchmarking exercises across the globe are typically conducted on one or two bundle sizes such as 1GB or 500MB. This is a standard practice by organisations such as the ITU. Certain products which are more opaque or temporary (like promotional offers and free data) would prove challenging to benchmark and others may not exist in all countries. While more can be done by organisations such as ITU to benchmark smaller bundle sizes or bundles with shorter validities, this is not the practice.
190. Furthermore, while Vodacom suggests that it is important to consider effective rates when comparing tariffs across countries, the Commission notes that neither Vodacom nor MTN has provided benchmarking evidence based on effective prices when they are at least able to do so for their operations in other markets. Moreover, if South Africa's performance on effective prices were much better than what is shown from headline prices, then Vodacom or MTN would have submitted evidence in this regard. The fact that they did not do so results in the reasonable presumption that the results were not favourable to their argument.
191. In making this argument that the benchmarking only reflects a small portion of the market, Vodacom also points to the variation in rankings in the Tarifica benchmarking reports (as shown above) for different user profiles¹⁶². As shown above, the differences in ranking across different user-profiles are primarily a function of the lack of appropriate bundles and plan sizes in other countries. As described above, Tarifica confirmed, for example, that for the light-user profile for the prepaid data-only plans, most countries ranked worse than

South Africa did not have any plans of less than 500MB used in the calculation. Some countries even had plans included in the calculations that were 1GB or larger. Using Tarifica's data, Vodacom has also compared rankings across postpaid and prepaid, as well as across data-only plans and hybrid plans that include voice and SMS services as well.

3.4 FINAL FINDINGS

192. Broadly, even after correcting for any errors and updating the assessment to reflect the latest data available, and considering the various submissions, the Commission's findings regarding the international price comparisons as covered in Section 3 of the Provisional Report remain substantially unchanged. If anything, the more recent data shows how South Africa's relative performance is deteriorating. Importantly, the Commission notes that the criticism of the role of the benchmarking analysis in the Commission's overall findings and recommendations is misplaced. Vodacom and MTN appear to assert that the Commission has relied on benchmarking evidence to draw conclusions on the level of competition in the market and make recommendations. This is not the case. However, we note that the findings on profitability, competition and cost drivers are consistent with higher relative prices reflected in the benchmarks. We detail below our final findings.
193. The updated market research covering the comparison of South Africa's mobile prepaid data prices relative to other countries (across global, BRICS and African country groupings) shows that South Africa's prepaid data prices (still) perform poorly, where its prices often rank among the more expensive countries. When assessing South Africa's performance over time, the evidence suggests that South Africa has deteriorated in recent years in particular against African countries, but also relative to a more global

162 Vodacom submission to the Commission, 14 June 2019, p. 74 (Non-Confidential)

sample. The analysis of RIA's data shows that, beyond country rankings themselves, South Africa's prepaid data performance has deteriorated in recent years relative to other African countries. Having considered submissions on this data, and the lack of any evidence to the contrary, the view of the Commission is that this result is unlikely to be influenced by the country-specific factors that detractors of price benchmarking exercises usually point to, and therefore it reinforces the finding that South Africa performs relatively poorly compared to other countries in respect of prepaid data prices. The finding also resonates with the worsening ranking for South Africa in the ITU global sample. Tarifica's global benchmarking exercise, which is based on a smaller sample (only 25 countries), also showed no clear improvement overall from 2017 to 2019 especially for the more informative medium and heavy user groups.

194. As in the Provisional Report, the benchmarking outcomes for South Africa's mobile postpaid data prices against the global, BRICS and African country groups appears improved relative to South Africa's prepaid data rankings. This general outcome is evidenced in the updated pricing data from ITU and Tarifica, which have shown that South Africa once again performs better in this category than for prepaid data prices compared to other countries. Although South Africa's price rankings are generally better for mobile postpaid data prices (relative to the prepaid comparisons), research evidence, particularly from ITU, still shows that South Africa's postpaid data prices are significantly higher than the cheapest country prices. The difference in ranking for prepaid and postpaid data is a particular concern as it demonstrates poorer consumers are likely to be far more worse off than wealthier ones. This evidence is consistent with the further exploration of pricing structure in later sections.
195. While the findings on fixed line price comparisons were largely not challenged, a review of the latest ITU information shows that there appears to have been a significant

improvement in South Africa performance in fixed line data services. This is certainly encouraging. However, South Africa still ranks unfavourably relative to a significant number of countries. Furthermore, the information shows that South Africa may have more comparable prices for its low-end fixed packages relative to other countries, whereas its high-end fixed packages are priced higher than many other countries.

196. Across South Africa's available data prices, the current available benchmarking evidence illustrates that South Africa still underperforms relative to other countries and this is particularly true for mobile data prices, and prepaid prices specifically. Within mobile data services, the evidence indicates that the prepaid segment is where the most room for improvement exists as South Africa performs relatively poorly in the mobile prepaid segment with its data prices often being ranked among the more expensive countries within a study.
197. Overall, the Commission's analysis of international price comparisons results in a clear conclusion: South Africa's data prices are higher than many countries, its prices have deteriorated over time relative to other countries and are certainly not low enough relative to other countries such that a further examination of the local market is not justified. While the results of this assessment are not used to conclude that there is a competition problem in the market, the results are certainly consistent with that view, which is detailed in Section 4 below.

4. MOBILE COMPETITION - RETAIL

4.1 SUMMARY OF PROVISIONAL FINDINGS

198. Owing to submissions, representations at the public hearings, and general discourse suggesting that high data prices could partly be an outcome of inadequate competition at the retail level of the telecommunications sector, the Commission examined competition in the mobile data market and whether there is scope to improve the extent of competition to the benefit of lower data prices, to low-income consumers in particular.
199. With the exception of Vodacom and MTN, there was consensus from submissions that price-based competition amongst mobile operators was inadequate. It was also found that the challenger networks, Cell C and Telkom Mobile, were unable to effectively constrain the two first-movers, Vodacom and MTN. Further, the Commission in the Provisional Report notes that the retail mobile market has remained stubbornly concentrated with Vodacom having a share in mobile services more generally, and data services specifically, that exceeds the thresholds used in the Competition Act for a conclusive determination of dominance and MTN typically skirting around the threshold level where there is a rebuttable presumption of dominance. These shares have barely changed over time.
200. Pricing evidence presented in the Provisional Report supports the notion that Vodacom and MTN are to a large extent able to price independently of the challenger networks. In summary, the evidence showed that:
- 200.1 On headline data prices, Cell C has historically been more aggressive and yet the two larger networks found it profitable to not follow their pricing downwards – Vodacom especially, but also MTN, did not respond to Cell C’s aggressive pricing. As a result, it seems that Cell C has recently determined that it cannot win sufficient market share by lowering prices and had proceeded to raise them back upwards towards the two larger networks.
 - 200.2 The Provisional Report also focused on Telkom’s aggressive pricing in headline terms such as its drop in price of the 1GB 30-day bundle to R99. However, the evidence suggests that there was no response from larger rivals in terms of comparable headline prices, suggesting that Telkom’s price change did not have any significant impact on the two largest players and they are able to price independently of Telkom (and Cell C).
 - 200.3 Whilst Vodacom and MTN claim to have responded in other ways such as short-validity bundles and non-transparent and selective free data and promotions, there was little evidence to support this. Furthermore, evidence against this claim existed in the form of effective (average) rates where those for the larger operators remained considerably higher than effective rates for smaller operators, suggesting a lack of competitive constraint.
201. In line with submissions, which suggest that certain features of the market such as first-

mover advantages of the larger operators and failure by authorities to regulate same, are likely the drivers of the anti-competitive outcomes in the market, the Commission found in the Provisional Report that:

- 201.1 The larger subscriber base and high levels of profitability of the two largest networks provides them with a considerable advantage in rolling out new technologies and services relative to the challenger networks as they are able to fund capital expenditure from earnings. In contrast, the smaller and less profitable subscribers of the challenger networks mean they are not able to fund capital expenditure to the same level, in part because they need to do so through equity- or debt-based funding.
- 201.2 This in turn weakens price-based competition as lower prices from challenger networks do not necessarily get a pronounced subscriber switching response due to network quality differences. This permits the larger networks to be less responsive on price and maintain higher levels of profitability, perpetuating the cycle of higher levels of infrastructure expenditure. It also softens price competition from the challenger networks as aggressive price declines may become financially unsustainable, especially considering the need to still fund investment in infrastructure.
- 201.3 The greater scale built through the first-mover advantages provides other benefits to the incumbents, namely a lower unit cost base than the challenger networks. This means that challenger networks are less able to impose a real pricing constraint on the larger networks.
- 201.4 The stickiness of more valuable contract customers, more favourable site locations and spectrum assignments

are also factors that have played into the hands of first-mover networks historically, albeit that their role or effect may have reduced over time.

202. Based on the above, the provisional finding of the Commission was that there is considerable scope to improve retail (price-based) competition in the mobile data services markets.

4.2 SUBMISSIONS IN RESPECT OF RETAIL MOBILE COMPETITION

203. The findings of the Commission in the Provisional Report on retail competition received support from RIA who submits that *“the Commission’s finding that there is minimal competition in the data market is also consistent with the finding of Research ICT Africa that minimal competition in the market and dominance of the two first entrants (MTN and Vodacom) has resulted in anti-competitive outcomes”*.¹⁶³ RIA also supports the Commission’s recommendation that operators should reduce their headline prices.¹⁶⁴
204. The Commission also received submissions expressing alternative or contradictory views relevant to the findings in the Provisional Report from RIA, ICASA, Vodacom, MTN and Sutherland. These are summarised as follows (and then dealt with in more detail below):
 - 204.1 In RIA’s submission, the Provisional Report was criticised for understating the influence of the voice market on the data market. RIA stated that voice is still the main revenue contributor to mobile operators’ prepaid revenue in South Africa. Dominant mobile operators have, according to RIA, been able to use their dominance in the voice market to invest in infrastructure and improve the quality of their networks, thereby “muscling out” smaller operators.¹⁶⁵

163 RIA’s submission, 14 June 2019, para. 8.1.3

164 RIA’s submission, 14 June 2019, para. 8.1.3

165 RIA’s submission, 14 June 2019, para. 6

- 204.2 ICASA submitted some suggestions regarding the Commission’s analysis on the extent of pricing pressure, including that the derived figure ‘revenue per GB’ should instead be expressed as a ‘per MB’ figure as data customers are billed in megabytes.¹⁶⁶ The calculation of revenue per MB should, according to ICASA, also include and exclude non-billable data traffic (promotional or ‘free’ data) and should be calculated with respect to different bundle sizes and same bundles with different validity periods.¹⁶⁷
- 204.3 Vodacom does not agree with the Commission’s provisional finding that there is considerable scope to improve price competition in the mobile data services market. Accordingly, Vodacom argues that it *“instead considers that the delivery of mobile data services is subject to effective competition and will be increased so following the ITA, which will alleviate existing capacity constraints.”*¹⁶⁸ Vodacom further argues that the Commission reached the conclusion that there is considerable scope to improve price competition in the mobile data services market due to several factors or errors on the part of the Commission.¹⁶⁹
- 204.4 Firstly, Vodacom argues that the Commission did not take Telkom’s impressive growth into account when analysing mobile retail competition¹⁷⁰ nor did the Commission consider future market growth and how technology and regional dynamics could affect an

analysis of market shares (particularly in relation to Telkom’s potential for further growth).¹⁷¹ Accordingly, Vodacom submits that *“since its re-entry into the mobile market in 2010 Telkom has grown on all relevant measures in the mobile market”*.¹⁷²

- 204.5 Secondly, Vodacom argues that the Commission focused too heavily on revenue market shares.¹⁷³ In this regard, Vodacom submits that the Commission should put less weight on revenue market shares as there are conceptual issues with using revenue market share data.¹⁷⁴ In addition, Vodacom argues that the Commission should take a more balanced view of different market share measures such as the share of subscribers, share of data traffic and share of gross additions.¹⁷⁵
- 204.6 Thirdly, Vodacom argues that the Commission only provided a partial view of price competition¹⁷⁶. In this regard, Vodacom provided various factors in support of this argument.
- 204.6.1 Vodacom argues that [§<], which was conducted on data bundles valid for 30 days excluded a significant portion of offers.¹⁷⁷
- 204.6.2 Vodacom also argues that the Commission overlooked clear examples of Vodacom responding to competitive pressure from rivals.¹⁷⁸ According to Vodacom, *“there is clear evidence of Vodacom responding to the competitive pressure in a number of areas - [§<]”*.¹⁷⁹

166 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p10

167 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p10

168 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)

169 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)

170 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)

171 Vodacom’s submission, 14 June 2019, p. 134 (Non-Confidential)

172 Vodacom’s submission, 14 June 2019, p.128 (Non-Confidential)

173 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)

174 Vodacom’s submission, 14 June 2019, p.132 (Non-Confidential)

175 Vodacom’s submission, 14 June 2019, p.119, p.134 (Non-Confidential)

176 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)

177 Vodacom’s submission, 14 June 2019, p.139 (Confidential)

178 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)

179 Vodacom’s submission, 14 June 2019, p.141 (Confidential)

- 204.6.3 Vodacom further argues that the Commission did not consider *“important differences between operators- in particular, differences relating to important economic bottlenecks, such as access to spectrum and backhaul, that affect their ability to compete...”*¹⁸⁰
- 204.6.4 More so, Vodacom argues that the Commission provided a partial view of price competition because it downplayed the observed reductions in effective prices.¹⁸¹
- 204.7 Lastly, Vodacom argues that the Commission has magnified any first mover advantages Vodacom and MTN may have had due to their earlier entry into the market.¹⁸² In Vodacom’s view, the Commission has not accounted for various aspects of competition which show that the large operators do not have any significant first mover advantage, and the factors that are included by the Commission are either misleading, inadequate or lacking evidence.¹⁸³ In this regard, it states that the Commission’s analysis of investment levels and capital expenditure could be misleading due to certain omitted considerations, while a forward-looking approach to operators’ scale benefits would reduce this advantage to a limited factor.¹⁸⁴ Vodacom also state that it (and MTN) does not benefit from a first mover advantage in relation to site access.¹⁸⁵ Furthermore, Vodacom point to a higher post-paid customer churn than reported by the Commission and also note the Commission should account

for the spectrum advantage that the smaller operators have.¹⁸⁶

- 204.8 Similarly, MTN does not agree with the Commission’s finding that there is considerable scope to improve price competition in the mobile data services market. According to MTN, *“the inquiry has, with respect, presented a simplistic analysis, that is fundamentally driven by an overemphasis on market structure, while not considering the nature of competition that occurs.”*¹⁸⁷ For instance, MTN submits that the Commission ignored the fact that MTN’s effective prices have decreased over time in its conclusion that MTN and Vodacom have not reacted to Cell C and Telkom’s price reductions.¹⁸⁸ In this regard, MTN argues that there has been a significant decrease in effective prices for subscribers in all ARPU groups, that is *“consumers who paid the same amount for mobile services in July 2018, received a lower effective rate than those who paid the same amount for mobile services in February 2018”*.¹⁸⁹
- 204.9 MTN also points to an over-reliance by the Commission on headline prices. In this regard, MTN argues that *“the Inquiry’s emphasis on headline prices disregards the fact that MNO’s vigorously compete on effective price through free and promotional data, there appears to be inconsistent and insufficient consideration of the fact that MTN and Vodacom also compete on non-price factors such as quality and coverage, and that procompetitive outcomes have been observed on these fronts”*.¹⁹⁰

180 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)
 181 Vodacom’s submission, 14 June 2019, p.126 (Non-Confidential)
 182 Vodacom’s submission, 14 June 2019, p.127 (Non-Confidential)
 183 Vodacom’s submission, 14 June 2019, p.145-155 (Non-Confidential)
 184 Vodacom’s submission, 14 June 2019, p.149-150 (Non-Confidential)
 185 Vodacom’s submission, 14 June 2019, p.152 (Non-Confidential)
 186 Vodacom’s submission, 14 June 2019, p. 153 &155 (Non-Confidential)
 187 MTN’s submission, 14 June 2019, p.29 (Non-Confidential)
 188 MTN’s submission, 14 June 2019, p.29 (Non-Confidential)
 189 MTN’s submission, 14 June 2019, p.41 (Non-Confidential)
 190 MTN’s submission, 14 June 2019, p.29 (Non-Confidential)

204.10 In relation to the first mover advantages, MTN argues that the Commission did not take into account *"the numerous features of the market in which later entrants have substantial advantages over incumbents"*¹⁹¹. MTN further argues that *"retail competition occurs across price and nonprice factors, and each has important effects on consumer choice and welfare"*¹⁹². In this regard, MTN submits that *"(e)ven in a market where larger operators might not have responded to headline pricing pressure from later entrants, this would not necessarily indicate that competition is weak, given the numerous dimensions upon which MNOs can compete, such as quality, infrastructure and innovative offerings"*.¹⁹³

204.11 Sutherland has some alternative views in relation to the Commission's finding that the retail market has remained stubbornly concentrated despite the entry of two challenger networks over time. Firstly, he notes that *"Telkom has recently reported significantly improved mobile results suggesting it has become a more effective competitor."*¹⁹⁴ Secondly, he argues that first-mover advantages date back twenty five years and if they are still a factor, the blame should be carried by the government and the regulator for failing to facilitate challengers. He further argues that any actions to remedy the entrenched first mover advantages (such as sharing of facilities, ducts, poles, and masts or wholesale national roaming) are unlikely to be effective without a sound statutory basis and a strong regulator, neither of which, he submits, is available.¹⁹⁵

4.3 COMMISSION'S RESPONSE

205. The Commission has considered the submissions in respect of its analysis of and conclusions on retail mobile competition. Broadly, the Commission finds that the evidence does not support the submissions and it is clear that there exist material competition concerns in this market. The Commission's response is set out as follows:

205.1 Firstly, we update our provisional assessment of operator market shares and market structure more broadly in the retail mobile market. The updated market shares and market structure analysis show that the retail mobile market remains stubbornly concentrated. While Telkom has shown some growth off a small base, there is a little to suggest that large players, and in particular Vodacom, are being competitively constrained by Telkom to any significant degree.

205.2 Secondly, we assess the profitability measures of MNOs over time, considering their margins over revenue as well as comparisons with other regions. Abnormal profitability can be a strong indicator of ineffective competition in a market and market power. Our profitability assessment for MTN and Vodacom reveals that both MTN and Vodacom's operations in South Africa are highly profitable and they have both been able to maintain large profits despite the alleged competitive constraints and 'fierce' competition that is asserted to be observable in the market.

205.3 Thirdly, we highlight the importance of quality and first-mover advantages given submissions received regarding the provisional findings on first-mover advantages in particular. In this regard, we find that:

191 MTN's submission, 14 June 2019, p.38 (Non-Confidential)

192 MTN's submission, 14 June 2019, p.41 (Non-Confidential)

193 MTN's submission, 14 June 2019, p.41 (Non-Confidential)

194 Ewan Sutherland's submission, p. 12

195 Ewan Sutherland's submission, p.13

- 205.3.1 Submissions received from MTN and Vodacom appear to concede that first-mover advantages were enjoyed by these firms, but then they also argue that these have been mitigated and are less significant now due to several factors.
- 205.3.2 We also find that the alleged advantages of Telkom have allowed Telkom to grow in the market, while Cell C which is without such advantages has failed to grow its share of the market.
- 205.3.3 Flowing from the above two points, the Commission concludes that smaller firms such as the challenger networks, the WOAN, and new entrants require a range of advantages in order to offset other disadvantages faced if they are to compete effectively with the larger firms who are first movers. One element of this advantage may be greater spectrum assignments relative to the larger firms.
- 205.4 Lastly, the Commission has analysed the submissions and evidence with respect to the claims of competitive responses provided to us by the largest operators. With regard to competitive responses and responses provided to us, we find that:
- 205.4.1 Despite MTN and Vodacom's objections to the Commission's provisional findings, and their insistence that the market is competitive, the evidence presented by the two operators still does not reveal any response to Telkom's pricing movements that the Commission focused on in the Provisional Report.
- 205.4.2 The two operators have not provided any real evidence of competitive constraint or responses to the competitive constraints allegedly imposed by the smaller players. The only evidence presented to the Commission is a response by Vodacom to Telkom's [X] of the market.
- 205.4.3 The evidence presented suggests that MTN and Vodacom are more responsive to each other than the other players, although the evidence does not suggest that the level of competition is sufficiently vigorous to mean that there are no concerns for competition.

4.3.1 RETAIL MARKET CONTINUES TO REMAIN STUBBORNLY CONCENTRATED

206. The Commission found in its Provisional Report that the retail market had remained stubbornly concentrated over time despite the entry of two challenger networks¹⁹⁶. Any examination of the updated data on market shares and a view of the submissions provided does not alter this view. While Telkom has grown off a low base, the effect on Vodacom and MTN has been limited and, as shown below, they are yet to respond to Telkom to any significant degree.
207. Both Vodacom and MTN point to Telkom as a market player exerting significant competitive pressure on the larger operators, as well as having considerable alleged advantages (such as an abundance of capacity and spectrum holdings, particularly of 2.3GHz spectrum) in the mobile data market.¹⁹⁷ The larger operators appear to use Telkom's most recent growth, as well as apparent changing dynamics in the market, as an indicator of changing market structure, or at least a market structure that is likely to change significantly in future.
208. Telkom's 2019 Annual Results do show improvement across key indicators for its

196 Provisional Report, para. 449.1
197 Vodacom's submission, 14 June 2019, p.93 &111 (Non-Confidential)

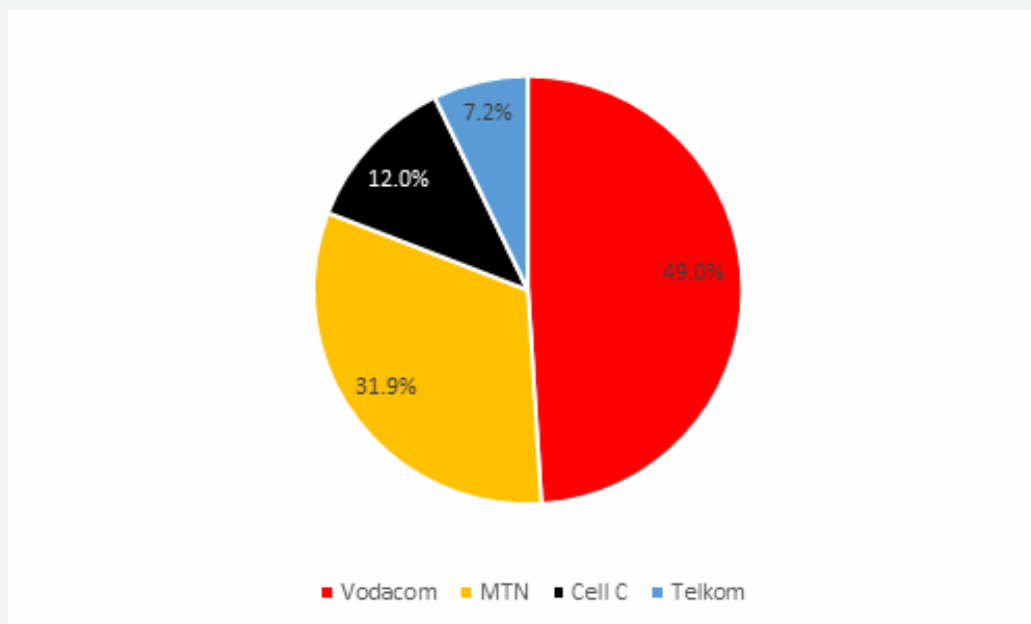
mobile business with clear growth, although off a low base.¹⁹⁸ In view of this, and the submissions of Vodacom and MTN, below we consider an updated view of market shares, updating our analysis in the Provisional Report for the more recent financial results as well as further data obtained from the operators.

209. The updated operator market shares are shown in the figures below. The category of operator service revenue (see Figure 35) shows revised market shares based on publicly available information on service revenue; Figure 36 shows market shares based on publicly available information on data revenue; and Figure 37 shows the updated market shares based on available subscriber numbers.
210. What is clear from the figures is that the market remains concentrated with Vodacom's market share exceeding the thresholds for dominance in the Competition Act, with MTN a lower share

just below the threshold for a rebuttable presumption of dominance in terms of the Competition Act (35%). The current picture of market shares across these categories indicates that Vodacom currently holds 49% market share of service revenue in South Africa, and similarly holds 48,8% market share in terms of data revenue and 42,4% in terms of subscriber share. The two large operators, Vodacom and MTN, consistently cover more than 70% of the market in terms of current service revenues, data revenues and subscriber numbers.

211. The market share evidence over time, as provided in the Provisional Report¹⁹⁹ and in the figures below (as well as Vodacom's own latest submission),²⁰⁰ shows the historic trend of largely consistent and robust market shares where Cell C and Telkom make up a small part of the mobile market, contrasted with the position of the larger operators continually accounting for the majority of service revenue, data revenue and subscriber revenue.

Figure 35: Operator market share for Service Revenue, (2018)*



Source: Operator's Annual Financial Statements and Integrated reports

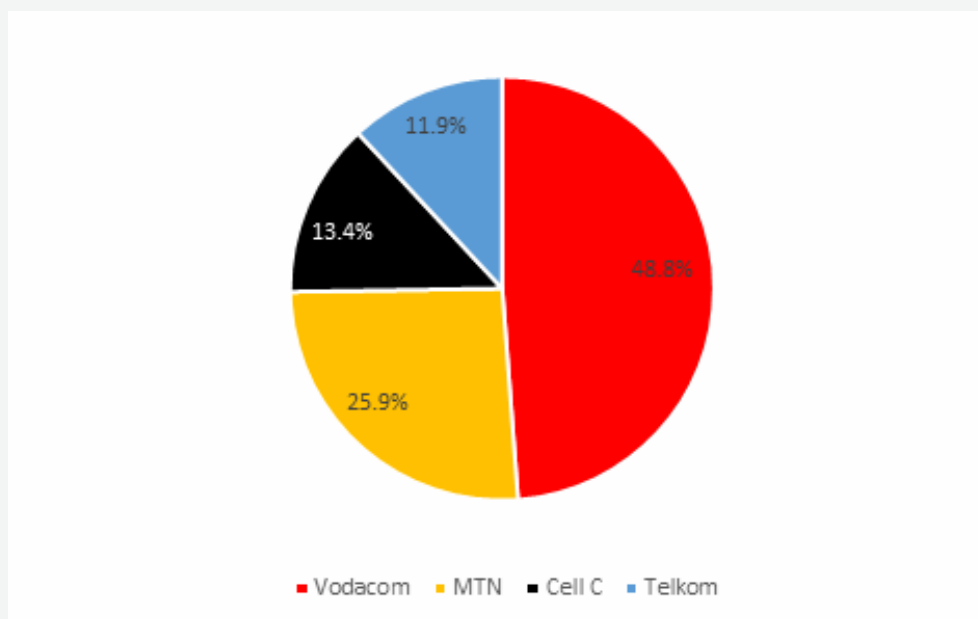
*Results for Vodacom and Telkom as per 31 March 2019. For MTN and Cell C, data is reported as at 31 December 2018

198 Telkom Integrated Report for the year ended 31 March 2019.

199 Data Services Market Inquiry Provisional Findings and Recommendations. 24 April 2019, p. 102-103

200 Vodacom response to Provisional Findings Report of DSML. 14 June 2019, p. 27, Figure 104 (Confidential)

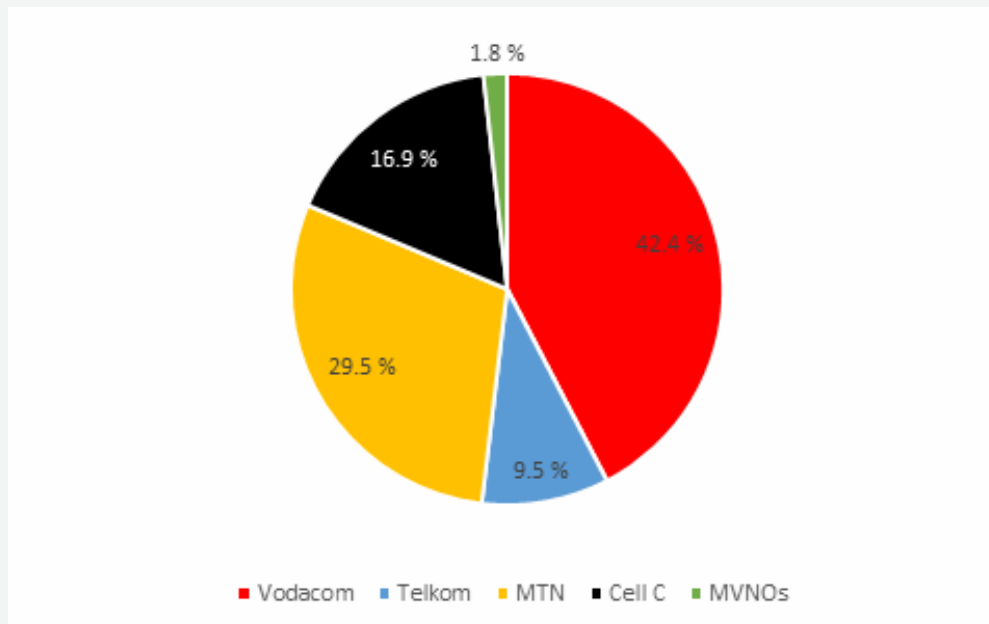
Figure 36: Operator market share for Data Revenue, (2018)*



Source: Operator's Annual Financial Statements and Integrated reports

*Results for Vodacom and Telkom as per 31 March 2019. For MTN and Cell C, data is reported as at 31 December 2018

Figure 37: Operator market share by Subscribers, (2018)*



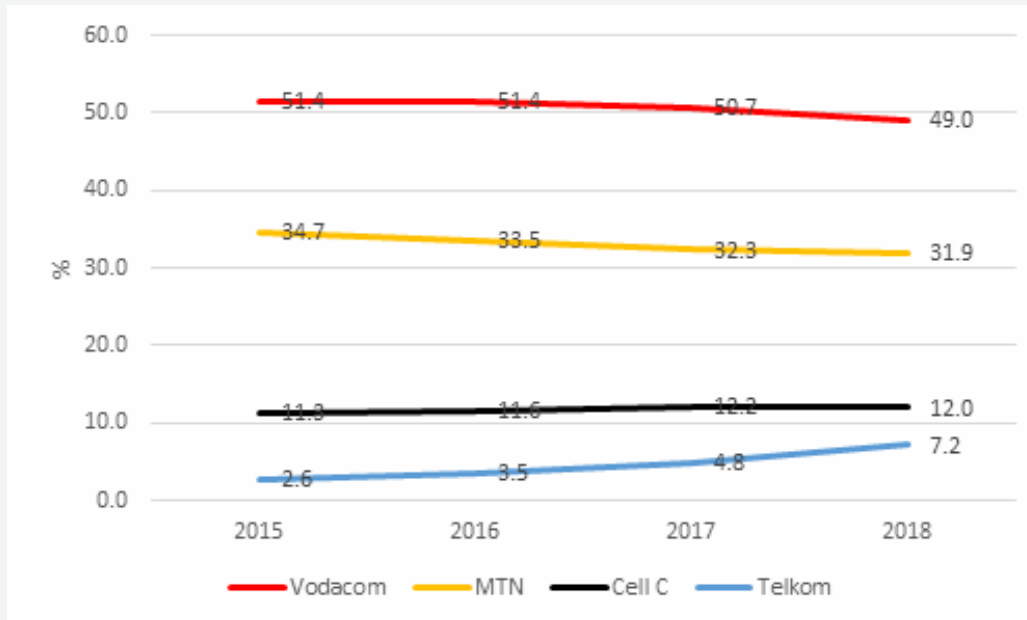
Source: Operator's Annual Financial Statements, Integrated reports, interim results and trading updates

*Results for Vodacom, Telkom and MTN as per 31 March 2019 for the same comparative period. For Cell C and MVNOs, data reported as at 31 December 2018.

212. Figure 38 below indicates that overall, there have been limited changes across the four operators' service revenue shares over the

period 2015 to 2018. Telkom has shown some growth in the last few years, apparently at the expense of the other operators, but

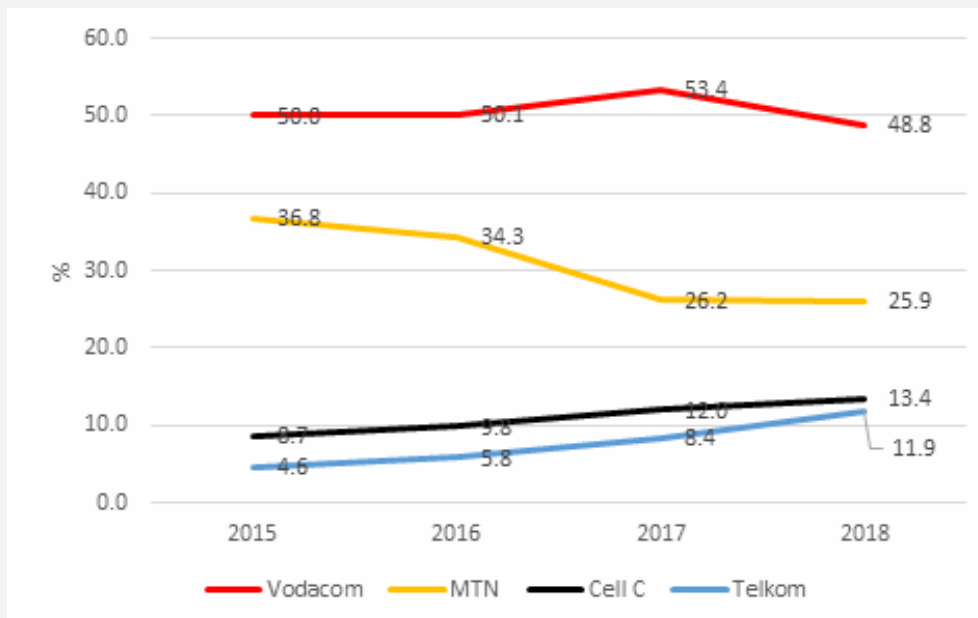
Figure 38: Historical Operator Service Revenue share, 2015 - 2018*



Source: Operator's Annual Financial Statements, Integrated reports and Annual Results presentations

*Results for Vodacom and Telkom as per financial year, where the 2018 data is updated as per 31 March 2019. For MTN and Cell C, data is reported as at 31 December for each respective year

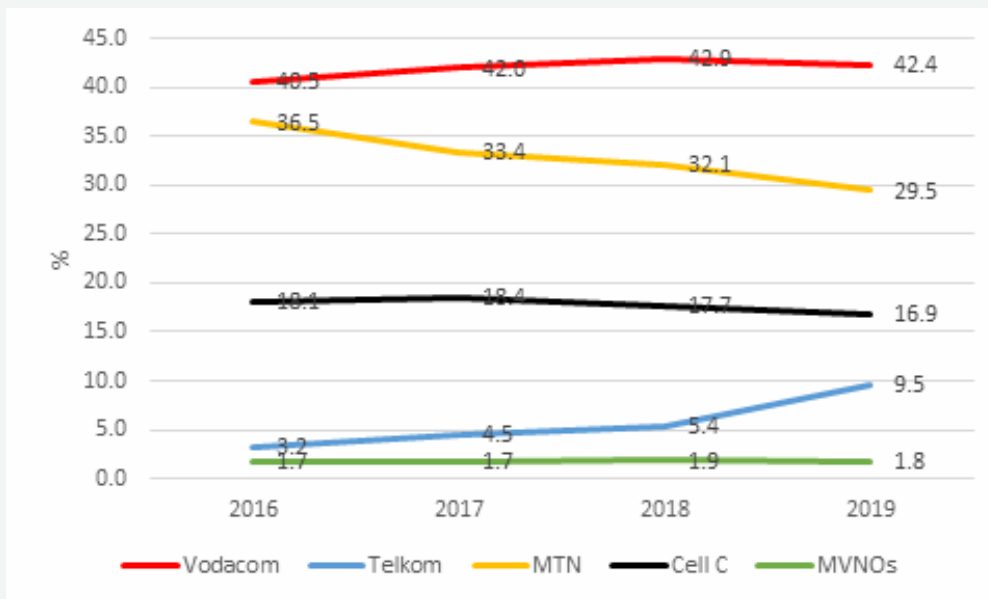
Figure 39: Historical Operator Data Revenue share, 2015 - 2018*



Source: Operator's Annual Financial Statements, Integrated reports and Annual Results presentations

*Results for Vodacom and Telkom as per financial year, where the 2018 data is updated as per 31 March 2019. For MTN and Cell C, data is reported as at 31 December for each respective year

Figure 40: Historical Operator Subscriber share, 2016 - 2018*



Source: Operator's Annual Financial Statements, Integrated reports and interim results

* For each year Vodacom and Telkom subscriber numbers reported as at 31 March of the following year, and MTN and Cell C as at 31 December each year. Vodacom, Telkom and MTN 2019 subscriber numbers as per 31 March 2019 for the same comparative period. The numbers for Cell C and MVNOs reported as at 31 December 2018

Telkom still remains the smallest player. In terms of data revenue shares over time, Figure 39 suggests that Cell C and Telkom have made some limited gains, possibly at the expense of MTN as Vodacom appears to be largely unaffected. It must be noted that these figures and changes may be subject to accounting rules and allocation approaches. Figure 40 covers the operators' subscriber market shares over the period 2016 to 2018. The figure suggests that again Telkom has grown its subscriber base although this is largely at the expense of MTN and Cell C. Vodacom's share of subscribers has proved more robust with only a small decrease in the most recent year. Despite Telkom's growth, which Vodacom eagerly points to in its response, Vodacom's mobile subscriber base has grown over recent years, and Vodacom accounts for over 40% of mobile subscribers in South Africa. Furthermore, the subscriber shares suggest that MVNOs continue to play a peripheral role, having

been unable to attract many customers over the period, and with consistently low subscriber shares of less than 2% across all MVNOs.

213. The figure below shows the quarterly market shares of operators according to their prepaid data revenue shares from Q3 2016 to Q1 2019, using data submitted to the Commission by the operators.²⁰¹ What is observed in Figure 41 is that, for the period Q3 2016 to Q1 2019, Vodacom and MTN combined have the largest shares of prepaid data revenues in the mobile market, accounting for [X] or more of prepaid data revenue in each quarter. The figure shows clear growth in Telkom's share of prepaid data revenue over the period, where in Q3 2016 Telkom had [X] of prepaid data revenue share which has grown to a [X] share as of Q1 2019. Despite Telkom's recent prepaid data revenue growth, the overall picture still indicates the two larger

201 Figure 38 is an update of Figure 37 in the Provisional Report, which reflects updated data from Q2 2018 to Q1 2019 (based on operator submissions to the Commission in July - August 2019).

Figure 41: Operator market share, Prepaid Data Revenue (Q3 2016 - Q1 2019)



Source: Operators' submissions to the Data Inquiry

players representing most of the prepaid data revenue and the smaller players accounting for much smaller shares of the market [3<] for Cell C and [3<] for Telkom in Q1 2019).

214. When looking at operators' monthly share of data traffic in terabytes, as shown in Figure 42 below,²⁰² it is observed that Telkom's share of data traffic has grown over the period to become the [3<] share as Telkom uses more of its mobile network capacity and its high-frequency spectrum for larger volume products. Vodacom and MTN's share of data traffic have shown a decreasing trend over the period, while Cell C is shown to have the [3<] share of data traffic. As noted in the Provisional Report, the indication from the market share graphs that Vodacom dominates the revenue shares but not data traffic shares indicates that it has some measure of pricing power and is able to price (to a large extent) independently of the smaller operators such as Telkom and Cell C.

215. While Vodacom argues that the Commission should pay less attention to revenue-based market shares and focus more on different market share measures such as volume based shares, if higher volume shares do not actually impact the revenue of the other players, then it is not clear that it is relevant to an assessment of market power and competitiveness. Put differently, if Telkom is unable to 'convert' its apparently greater capacity for data into actual revenue, it is clear that the larger players such as Vodacom have market power. Furthermore, Vodacom states that a more balanced view by the Commission of different measures of market shares should have included subscriber share, data traffic share and the share of gross additions.²⁰³ These market share measures, however, were in fact included in the Provisional Report with the exception of the share of gross additions (which we note has not been included in Vodacom's response aside from a reference to these market shares being more even

202 Figure 39 is an update of Figure 38 in the Provisional Report, which reflects updated data from April 2018 to March 2019 (based on operator submissions to the Commission in July - August 2019). The data traffic figures include free data usage.

203 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.132 (Non-Confidential)

Figure 42: Operator Data Traffic market share (June 2016 - March 2019)



Source: Operators' submissions to the Data Inquiry, July - August 2019.

across operators)²⁰⁴ although it is assessed implicitly in the Provisional Report and again below when looking at changes in market shares over time.

216. Thus, as per the Provisional Report, the inevitable conclusion is that the retail market remains concentrated. The only somewhat new development, and the aspect on which MTN and Vodacom attempt to focus their attention, is the performance of Telkom. Telkom has shown steady growth in the last couple of years, although off a small base and Telkom has remained the smallest player in the market. In this respect we note the following:

216.1 Firstly, on Vodacom's own version, the reason for Telkom's recent growth in market share and the growing competitive constraint is Telkom's alleged advantages. Vodacom points to

Telkom's larger assignment of spectrum and large proportion of base stations connected by fibre, which together mean greater capacity, especially for data.²⁰⁵ Vodacom argues that Telkom has shown significant growth due to these advantages over other operators. Vodacom refers to "Telkom's high levels of capacity ... which is directly a result of Telkom's privileged access to a substantial amount of high demand spectrum and its underlying superior fibre network which it can use to provide backhaul".²⁰⁶

216.2 Vodacom also tries to play down Telkom's lack of lower frequency spectrum (i.e. spectrum in the 900Mhz range) despite also extolling the importance of low-frequency spectrum in its previous submission.²⁰⁷ However, despite these allegedly significant and

204 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.21 (Non-Confidential)

205 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.111-112; 138 (Non-Confidential)

206 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p. 23. (Non-Confidential)

207 Vodacom previously argued that low frequency spectrum is critical as it stated that "Access to low frequency spectrum reduces operators' cost of increasing coverage and improving in-building coverage by reducing the number of new sites and investment in network equipment required. This is because low-frequency transmissions can travel greater distances before losing their integrity, and can pass through dense objects more easily" Frontier Economics report (30 November 2017) (in Vodacom's submission of 30 November 2017, Non-Confidential version), p.34-35.

substantial advantages, Telkom, after almost 10 years in the market, is still the smallest operator, and even with its recent growth, Vodacom (in particular) and MTN are largely unaffected on most market share assessments, with high market shares. This shows the level of entrenchment of the largest operators' positions as first-movers in that they are able to resist an operator with such advantages.

- 216.3 Secondly, in addition to the first point, as the analysis in Section 4.3.4 shows, the two large operators have for the most part not needed to respond directly to the aggressive pricing behaviour of the challenger operators. Therefore, despite the advantages of Telkom and its growth, it has not yet affected Vodacom to the point that it has responded to Telkom, with the exception of the largest bundle sizes in the data-only post-paid segment.²⁰⁸ This is reinforced by observing that, in contrast to the large players, Cell C has responded to Telkom's growth. In the Provisional Report, we showed that while Cell C had previously attempted to challenge the incumbent operators, it has subsequently increased its headline prices to match MTN and Vodacom. However, it recently adjusted its headline prices again in November 2018, seemingly to more closely match Telkom's pricing (its 1GB 30-day bundle was reduced to R100). Thus, Cell C has ultimately responded to Telkom's growth while the larger operators have not, or at least not to the same degree.
- 216.4 Thirdly, what the submissions of Vodacom therefore show is that, on their own version, an advantage is needed for a challenger network to even *begin* to challenge the entrenched incumbents. Vodacom directly links the claimed competitiveness of Telkom currently and in future to the advantages that it

holds. The implication is that without these advantages, Telkom could not begin to challenge the incumbents.

- 216.5 This is also shown quite clearly in that Cell C does not even feature in the submissions of Vodacom and MTN. The only mention made of Cell C is with respect to the Commission's noting of submissions regarding a lack of spectrum contiguity for Cell C and in respect of roaming agreements. Vodacom and MTN do not even mention Cell C in their submissions on competition in the retail market despite it being bigger than Telkom. As discussed below in Section 4.3.4 no mention is made of any competitive response to a pricing or product change by Cell C. With Cell C's lack of any competitive advantages, it has apparently been unable to truly constrain the large incumbents.
- 216.6 Fourthly, when considering the future trajectory of the market, it is important to note that the release of high demand spectrum will provide both MTN and Vodacom with greater spectrum capacity which would blunt to some extent the data advantage of Telkom. In addition, Vodacom has already accessed the capacity on the RAIN network to do so. The 5G spectrum will also be licensed in the near future. With the advent of 5G technology, Vodacom (and MTN) can, as they have in the past, invest heavily and take a first-mover advantage in the new technology as appeared to be the case in 3G and 4G. Moving into the future, it is Vodacom that is in fact well placed to take advantage of changes to the nature of the industry due to its financial position.
- 216.7 Fifthly, the fact that Telkom does not competitively constrain Vodacom is again illustrated by Vodacom's own submissions. Vodacom points, in a number of instances, to capacity constraints and the need to maintain

208 We note that Vodacom only recently decreased the prepaid 1GB price (valid for 30 days) to R115, with a R99 price available only on the Vodacom app.

quality as barriers to engaging in more aggressive pricing²⁰⁹. Here Vodacom states *“The CC fails to recognise that Vodacom’s ability to respond to Telkom is limited by capacity constraints”*.²¹⁰ In effect, more aggressive pricing would result in more volume, which would result in greater volumes and therefore quality degradation. However, if Telkom was truly competing, it would be drawing customers away from Vodacom, and therefore Vodacom would in turn have capacity to respond to Telkom’s pricing. The fact that Vodacom does not have capacity is evidence of the fact that Telkom has not, in fact, constrained them to a significant degree. Moreover, it points to Vodacom’s greatest influence on pricing decisions and volumes in fact being its alleged capacity constraints, not competition.

217. In summary, as in the Provisional Report, the Commission finds that the retail mobile market remains stubbornly concentrated. While Telkom has grown off a small base, there is little to suggest that the large players, and in particular Vodacom, are being competitively constrained by Telkom to any significant degree. Vodacom’s submission around the future view of the market does not take account of the likely changes in competitive dynamics and the resources available to Vodacom to invest in new infrastructure and technology.

4.3.2 PROFITABILITY MEASURES

218. The profit earned by a firm can give insights into whether a firm is constrained in its pricing and therefore whether it possesses market power. And to the extent that a firm has market power and its pricing is not constrained, this is strong evidence that the market is uncompetitive. Profits are normally expected to be in line with an undertaking’s cost of capital or investors’ required return

on investment.²¹¹ If profits are considerably greater than the firm’s cost of capital for prolonged periods of time, it may be a sign of not just market power, or more broadly a lack of competitive constraints, but the potential abuse of that position through excessive pricing.

219. The assessment of concentration above suggests that only Vodacom and MTN could potentially possess market power, given their significantly higher market shares relative to the challenger firms. Thus, we focus the analysis below on the profitability of Vodacom and MTN. The available evidence clearly suggests there is no abnormal profitability for Telkom and Cell C:

219.1 We note that the Telkom Consumer business unit, which houses the mobile segment, has shown limited profitability with an EBITDA loss of R146m in FY2018 and an EBITDA profit of R1,030m and a margin of 5.4% in revenue in FY2019.²¹² Even if one adds in the Gyro business (which house the sites and towers), the EBITDA for FY2019 only rises to 8.4%.

219.2 With respect to Cell C, it is well known that Cell C faces significant financial difficulties. As far as the Commission is aware, the last and only annual profit Cell C made was recorded in 2017, despite being in operation for 17 years²¹³, as stated in our Provisional Report.

220. Thus, the Commission has assessed the profitability of MTN and Vodacom over time (as the largest MNOs in South Africa that are also likely to possess market power), using both comparative measures and then also an approach analogous to an excessive pricing assessment:

220.1 Firstly, the Commission analyses the profitability of Vodacom and MTN

209 Vodacom’s response to Provisional Report, 14 June 2019, pages 93, 101, 107, and 151 (Non-Confidential)

210 Vodacom’s response to Provisional Report, 14 June 2019, pages 23 (Non-Confidential)

211 Fleet, A. and Moilola, T. The use of profitability analysis by competition authorities

212 Telkom SA Annual Financial Statements for the year ended 31 March 2019

213 Mahlaka, R. (23 August 2018) “Blue Label defends its investment in Cell C”, in MoneyWeb, available at: <https://www.moneyweb.co.za/news/companies-and-deals/blue-label-defends-its-investment-in-cell-c/> [Accessed 4.4.2019]

in terms of Earnings Before Interest, Taxes, Depreciation and Amortisation (“EBITDA”) as a percentage of sales revenue and Return on Capital Employed (ROCE) over time. Capital Employed is derived by adding fixed assets to net current assets (current assets minus current liabilities). The Commission also analyses Vodacom’s Earnings Before Interest (EBIT) margins over time. We also compare the profit margins of Vodacom South Africa and MTN South Africa with the profit margins of Vodacom and MTN businesses in other countries.

220.2 Secondly, the Commission analyses the price-cost mark-ups of Vodacom and MTN over time, while also accounting for the cost of capital.

4.3.2.1 PROFITABILITY ANALYSIS OF VODACOM AND MTN

221. In analysing the profitability of Vodacom and MTN, we determine Vodacom and MTN’s EBITDA margins. EBITDA is used because (i) it is a commonly reported measure across the world, (ii) it removes factors that business owners have discretion over such as debt, capital structure, and methods of depreciation and amortisation, and (iii) it excludes tax which varies across countries. EBITDA is expressed relative to revenue in order that a fair comparison between small and large MNOs can be made. We also analyse Vodacom and MTN’s ROCE and we analyse Vodacom’s EBIT as a percentage of revenue²¹⁴ as alternatives to the EBITDA

margins. In calculating these measures, the Commission has had to rely on figures covering the entire business. For instance, revenue includes revenue from voice and SMS services as well as other smaller revenue streams. Given the likely similarities in market dynamics between data, voice and SMS, the aggregate revenue figure remains relevant.

222. We further consider the Capital Intensity of Vodacom and MTN in different countries. Capital Intensity is derived by dividing total capital expenditure (capex) by revenue. It is used as a relative measure of the firm’s capital expenditure.

Vodacom’s profitability analysis

223. As shown below in Table 8, Vodacom South Africa’s EBITDA margins averaged 39.8% for the financial period 2015 to 2019. The Vodacom Group’s²¹⁵ EBITDA margins averaged lower at 37.6% as compared to Vodacom SA’s EBITDA margins for the same period, although the Group figures are largely dominated by the South African numbers. This shows that although Vodacom South Africa is also part of the Vodacom Group, it is more profitable than the Vodacom Group as a whole.

224. The Commission has also compared the profitability of Vodacom in South Africa with that of Vodacom in other jurisdictions as well as Safaricom in Kenya. Vodacom has a 34.9% stake in Safaricom in Kenya. Evidence of higher margins in South Africa relative to other markets may suggest that Vodacom

Table 8: Vodacom's profitability analysis over a five-year period

Company	31-Mar-15	31-Mar-16	31-Mar-17	31-Mar-18	31-Mar-19	Average for the period
EBITDA margins - Vodacom SA only	38.6%	40.2%	41.4%	40.1%	38.9%	39.8%
EBITDA margins - Vodacom Group	36.1%	37.9%	38.4%	38.1%	37.4%	37.6%

Source: Vodacom Group annual integrated report year ended 31 March 2019 (See the Five Year Review)

214 As far as the Commission is aware MTN does not report their EBIT margins

215 The Vodacom Group includes Vodacom’s operation in other countries such as Tanzania, Lesotho and The DRC.

Table 9: EBIT and EBITDA margins, capital intensity and market share of Vodacom across countries (%) (year ended 31 March 2019)

Country	EBIT margin	EBITDA margin	Capital intensity	Market share (2017)
Total	26.0%	37.4%	14.4%	n/a
South Africa	28.4%	38.9%	13.4%	51%
International	17.2%	31.3%	16.9%	n/a
- Tanzania	11.7%	-	-	30.9%
- DRC	13.4%	-	-	38.9%
- Mozambique	27.0%	-	-	47.6%
- Lesotho	37.5%	-	-	90.9%
- Safaricom (Kenya)	35.7%	49.7	14.9%	71.9%

Sources: Vodacom Group Annual Integrated Report year ended 31 March 2019; Vodacom Group Annual Results booklet Year ended 31 March 2019; Vodacom Group Annual Report Year ended 31 March 2017; Reuters, "Kenya's Safaricom loses market share for fifth straight quarter", available at: <https://www.reuters.com/article/kenya-safaricom/kenyas-safaricom-loses-market-share-for-fifth-straight-quarter-idUSL8N21K1I2> [Accessed 20 November 2019]

Notes: The market shares for Vodacom (excluding Safaricom) were obtained from the 2017 annual report (and so were applicable as at 31 March 2017) as this information was not available in 2019. Market shares in South Africa were based on service revenue. Market shares for the other countries shown are based on customer numbers. The market share of Safaricom is its market share in September 2017 and is a share of total subscribers in Kenya

South Africa exercises market power in the country, albeit that it has positions of market power in other markets too (including Lesotho, Mozambique and Kenya).

225. The table above shows the EBIT margin, EBITDA margin, capital intensity and market share of Vodacom across the various countries in which it operates. EBIT margins are contained in the table above because Vodacom does not report the EBITDA margins for each of the four countries in which it operates. Since the comparison is for one MNO operating in many countries, it is reasonable to assume that at least the methods of depreciating and amortising assets are relatively standard across the countries shown. As such, a comparison of EBIT margins between South Africa and the other countries in which Vodacom operates would be appropriate. All financial measures are from the most recent annual report (year ended 31 March 2019) but the market shares pertain to 2017.

226. The table above shows that the EBITDA and EBIT margins of Vodacom South Africa are higher than that of Vodacom's international operations as a whole by a considerable margin. On a country-by-country basis,

Vodacom's EBIT margin in South Africa is higher than in Tanzania, the DRC, and Mozambique (slightly) but lower than in Lesotho. However, the Commission notes that Vodacom is almost totally dominant in Lesotho with a market share of 90.9%. The table suggests that profitability is closely related to market share with the country with the lowest market share having the lowest profitability (Tanzania) and conversely the highest profitability matched to the highest market share (Lesotho). South Africa is the Vodacom territory with the third highest market share and the third highest profitability.

227. The Commission also calculated Vodacom South Africa's ROCE over the last five financial years. These are presented alongside the Group's ROCE reported in Vodacom's annual report, as shown below.

228. Regardless of whether one considers the Commission's calculations or whether one considers the ROCEs reported in Vodacom's annual reports, it is clear that the Group's ROCEs are significantly higher than any reasonable measure of the cost of capital. More importantly, Vodacom South Africa's ROCE was [3x] on average is [3x]

Table 10: ROCE of Vodacom over a 5-year period

	31-Mar-15	31-Mar-16	31-Mar-17	31-Mar-18	31-Mar-19	Average for the period
Commission's calculation of ROCE						
ROCE - Vodacom SA	[80% - 85%]	[65% - 70%]	[60% - 65%]	[65% - 70%]	[55% - 60%]	[65% - 70%]
ROCE - Vodacom Group	48.5%	44.0%	41.4%	32.1%	23.7%	37.9%
ROCE - Vodacom International	[10% - 15%]	[10% - 15%]	[5% - 10%]	[10% - 15%]	[10% - 15%]	[10% - 15%]
ROCEs reported in Vodacom's annual reports						
ROCE - Group (with Safaricom)	50.1%	48.2%	45.4%	30.5%	25.8%	40.0%
ROCE - Group (excl Safaricom)	50.1%	48.2%	45.4%	45.4%	-	47.3%

Sources: Vodacom SA's annual financial reports years ended 31 March 2015-2019 (Confidential); Vodacom Group Integrated Report 2015-2019 (see 5 year historical review) Vodacom Annual Results Booklet 2015-2019

Notes: (i) Safaricom was purchased in the 31 March 2018 financial year. The CAPM is lower where it has been included because it increased the assets of the Vodacom Group and, (ii) ROCE is calculated by dividing adjusted statutory operating profit by the average of total assets less current liabilities

than that of the Group (and even more so relative to its International business). This suggests that capital investments in the country have yielded [3<] returns than those in the other countries where it operates. This is consistent with market power and ineffective competition.

229. Compared to other countries within the Vodacom group, and against Safaricom in Kenya, the evidence above suggests that Vodacom in South Africa is[3<]. Furthermore, in contrast with Vodacom's assertion that "there is currently strong infrastructure-based competition"²¹⁶ in South Africa, the

figures for capital intensity suggest that Vodacom South Africa lags behind its international business and Safaricom.

MTN's profitability analysis

230. As shown below in Table 11, MTN SA's EBITDA margins averaged 33.6% for the financial period 2014 to 2018, which are below those of Vodacom but not substantially so. The MTN Group's EBITDA margins however averaged slightly higher at 37.8% compared to MTN SA over the same period.

Table 11: EBITDA margins of MTN over a five-year period

	31-Dec-14	31-Dec-15	31-Dec-16	31-Dec-17	31-Dec-18	Average for the period
EBITDA margins - MTN SA only	32.1%	33.4%	32.9%	34.6%	35.1%	33.6%
EBITDA margins - MTN Group	49.8%	40.2%	27.5%	35.4%	35.9%	37.8%

Sources: MTN Group Limited annual summary group financial results years ended 31 December 2014-2018

Notes: The MTN Group reported Actual EBITDA margins and Adjusted EBITDA margins in the 2014, 2015, and 2016 financial years. Adjusted figures exclude hyperinflation, goodwill impairment and tower profits. We used actual EBITDA margins for consistency

216 Vodacom letter (non-confidential version) dated 30 November 2017 (In Cliffe Dekker Hofmeyers letter head), p.13, para. 1.5.1.1

Table 12: EBITDA margins, capital intensity and market share of MTN across countries (Year ended 31 December 2018)

Country	EBITDA margin	Capital intensity	Market share
Total	35.9%	19.3%	n/a
South Africa	35.1%	21.2%	28.4%
International	34.5%	18.5%	n/a
- Botswana	52.8%	-	51.5%
- Ghana	37.5%	17.0%	51.3%
- Ivory Coast	22.3%	27.5%	33.4%
- Liberia	-10.6%	-	35.1%
- Nigeria	43.6%	18.1%	50.0%
- Rwanda	29.4%	-	47.2%
- Uganda	36.5%	14.6%	53.9%
- Zambia	31.0%	-	47.0%
- Afghanistan	12.8%	-	44.1%
- Benin	24.3%	-	53.5%
- Cyprus	32.9%	-	-
- Iran	36.3%	-	43.0%

Sources: MTN Group Annual Report data sheet, year ended 31 December 2018; MTN Group Limited annual summary group financial results years ended 31 December 2018.

231. The Commission has also compared the profitability of MTN in South Africa with that of MTN in other jurisdictions in the table above. Whilst this comparator may be informative of potential market power, in the case of MTN it is evident that it has a stronger market position in almost all other markets in which it operates. As such, if the South African margins are broadly comparable then it is likely to still be indicative of some form of market power.

232. Table 12 above shows the EBITDA margins, capital intensity and market share of MTN across the various countries in which it operates for the financial year ended 31 December 2018.

233. As shown above, the EBITDA margin of MTN South Africa is similar to the EBITDA margins for the entire MTN Group, and higher than

in Cyprus (albeit only slightly), Zambia, Rwanda, Benin, Ivory Coast, Afghanistan and Liberia (which is experiencing a loss). This is despite MTN in South Africa having the lowest quoted market share, which would suggest some pricing power on the part of MTN South Africa if it can match margins in markets in which it dominates. Indeed, MTN South Africa is one of the most profitable of the various MTN territories and those that are more profitable have much higher market shares.

234. The Commission also calculated ROCE for the MTN Group and MTN SA over time. As shown below, the MTN Group's ROCE averaged 19.7% while MTN SA's ROCE averaged [REDACTED] at [REDACTED] for the period of analysis. These are higher than the expected cost of capital.

Table 13: ROCE of MTN over a 4-year period

Country	31-Dec-15	31-Dec-16	31-Dec-17	31-Dec-18	Average for the period
ROCE - Group	31.2%	22.6%	9.9%	15.2%	19.7%
ROCE - MTN SA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Sources: MTN SA annual financial reports years ended 31 March 2015-2018 (Confidential); MTN Group Limited annual summary group financial results years ended 31 December 2014-2018

Note: ROCE is calculated by dividing adjusted statutory operating profit by the average of total assets less current liabilities

235. The evidence shows that using EBITDA, EBIT margins and ROCE as measures of profitability in comparison to their operations in other countries, South Africa is highly profitable for both operators. For Vodacom, South Africa has a far higher average return relative to its international operations, whilst MTN South Africa is on a par with markets where it holds a more dominant position.

4.3.2.2 PRICE-COST MARK-UPS OF VODACOM AND MTN

236. In analysing whether Vodacom or MTN's profits are in line with their cost of capital or investors' required return on investment, we computed price-cost mark-ups for Vodacom and MTN below. The price-cost mark-up is typically used to determine whether a firm is engaged in excessive pricing. A positive price-cost mark-up is indicative of abnormal returns on capital employed. We calculate the price-cost mark-ups using aggregate figures²¹⁷.

Price-cost mark-ups of Vodacom

237. The Commission has used Vodacom's audited financial statements for its South African business to examine price-cost mark-ups over a six-year period even after allowing for a fair return on capital employed for investors. Broadly speaking, this involves comparing prices to operating costs plus an estimate of a fair return on capital invested in the business. The approach taken is described below.

237.1 *Revenue*. The Commission has relied on total revenue. This includes non-operating revenue (such as equipment revenue) and non-data operating revenue (such as revenue from voice and SMS services).

237.2 *Operating costs plus tax*. Operating costs were calculated by subtracting operating profits from revenue. Operating costs include direct expenses, staff expenses, publicity expenses, other operating costs, depreciation and amortisation, and impairment losses. It does not include tax and finance costs. Because the WACC is a post-tax WACC, tax has been added to operating costs. This is shown in the table below.

237.3 *Total capital employed*. This is calculated by adding fixed assets to net current assets (current assets minus current liabilities) and is shown in the table below. Fixed assets include network equipment, but also intangible assets, namely licenses, computer software, customer bases, trademarks, patents, and 'other'. Goodwill is specifically excluded from intangible assets (although it is insignificant in any event). In the telecommunications sector, replacement costs of assets are typically lower than historical costs. Indeed, we have confirmed with leading suppliers of RAN network equipment that prices have been coming down over the last 10 years. For this reason, it is unnecessary to revalue the assets at replacement value.

Table 14: Vodacom South Africa's revenue and costs (Rm), FY2014 - FY2019

	31-Mar-14	31-Mar-15	31-Mar-16	31-Mar-17	31-Mar-18	31-Mar-19
Total revenue	[X]	[X]	[X]	[X]	[X]	[X]
Operating costs	[X]	[X]	[X]	[X]	[X]	[X]
Operating margin	[X]	[X]	[X]	[X]	[X]	[X]
Tax	[X]	[X]	[X]	[X]	[X]	[X]
Operating costs + tax	[X]	[X]	[X]	[X]	[X]	[X]

Sources: Vodacom Pty Ltd Annual Financial statements (Confidential) for years ended 31 March 2015 - 31 March 2019

217 One can also perform the analysis on "per unit" basis but the results are the same

Table 15: Vodacom South Africa's total capital employed (Rm), FY2013 - FY2019

	31 March 2013	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Fixed assets (f)	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Goodwill (g)	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Fixed assets - Goodwill (h=f-g)	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Current assets (i)	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Current liabilities (j)	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Net current assets (k=i+j)	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Total capital employed (l=h+k)	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Sources: Vodacom Pty Ltd Annual Financial statements (Confidential) for years ended 31 March 2015 - 31 March 2019

Table 16: Vodacom South Africa's cost of capital (Rm), FY2014 - FY2019

	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Average total capital employed (kAverage = (kt-1 + kt) / 2)	[X]	[X]	[X]	[X]	[X]	[X]
WACC (l)	[X]	[X]	[X]	[X]	[X]	[X]
Cost of capital (m=kAverage*l)	[X]	[X]	[X]	[X]	[X]	[X]

Sources: Vodacom Pty Ltd Annual Financial statements (Confidential) for years ended 31 March 2015 - 31 March 2019; MTN SA WACC calculation for 2016; Commission workings

237.4 *The cost of capital.* Vodacom's cost of capital has been determined (as shown in the table above) by multiplying the Weighted Average Cost of Capital ("WACC") in percentage terms by the average total capital employed by the business (the average of the capital employed in the previous financial year and capital employed in the current financial year). Companies are financed by debt and equity. WACC is the combined cost of each of these sources of financing, weighted by its usage.

237.5 As an estimate for WACC we used the post-tax WACC estimated for MTN South Africa, which is in turn based closely on WACC calculations submitted by MTN [X]. The nature of the calculations points to more of a

market wide WACC than one specific to MTN's own finances. Because MTN's financial year ends in December and Vodacom's financial year ends in March, for Vodacom, we applied the previous calendar year's estimated MTN WACC to Vodacom, except for Vodacom's FY2014 where we applied the same estimated WACC as for FY2015. These WACC figures also compare well against publically available figures for the Vodacom Group (rather than Vodacom South Africa)²¹⁸. Total capital employed, the WACC, and the cost of capital over Vodacom's last five financial years are shown in the table above.

238. *The price-cost mark-up.* The price-cost mark-up, as shown below, is calculated by subtracting from total revenue both

218 Estimated WACC over a number of financial years for the Vodacom Group available at: <https://www.gurufocus.com/term/wacc/VDMCY/WACC-/Vodacom-Group-Ltd> [Accessed on 20 August 2019]

Table 17: Vodacom South Africa's price-cost mark-up, FY2014 - FY2019

	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Total Revenue (a)	[X]	[X]	[X]	[X]	[X]	[X]
Operating costs + tax (e)	[X]	[X]	[X]	[X]	[X]	[X]
Cost of capital (m)	[X]	[X]	[X]	[X]	[X]	[X]
Margin after cost of capital (n=a-e-m)	[X]	[X]	[X]	[X]	[X]	[X]
Price-cost mark-up (o=n/(e+m))	[20%-25%]	[20%-25%]	[15%-20%]	[20%-25%]	[20%-25%]	[15%-20%]
Average price-cost mark-up	[20% - 25%]					

Sources: Vodacom Pty Ltd Annual Financial statements (Confidential) for years ended 31 March 2015 - 31 March 2019; MTN SA WACC calculation for 2016; Commission workings

Table 18: Vodacom South Africa's actual return versus fair return (Rm), FY2014 - FY2019

	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Actual margin including tax	[X]	[X]	[X]	[X]	[X]	[X]
Fair return (cost of capital)	[X]	[X]	[X]	[X]	[X]	[X]
Actual return v fair return	[X]	[X]	[X]	[X]	[X]	[X]

Sources: Vodacom Pty Ltd Annual Financial statements (Confidential) for years ended 31 March 2015 - 31 March 2019; MTN SA WACC calculation for 2016; Commission workings

operating costs and capital costs, then expressing this amount as a percentage of the sum of operating and capital costs. This is broadly in line with what was done in the Sasol excessive pricing case.²¹⁹

239. Based on these calculations, the price-cost mark-ups are not only positive but also high. Even after allowing for a commensurate or fair return to investment to 'security holders' of the business, Vodacom has been earning an average mark-up of **[20% - 25%]** per annum.

240. An alternative means of examining this issue is to consider what a fair return would be, based on the cost of capital, and then determine how much higher the return on capital actually is. This is in effect the excess return made by Vodacom's shareholders. The table above contains a comparison of Vodacom South Africa's actual margin to its fair return based on the WACC.

241. Table 18 shows that Vodacom's actual margin, which is measured as revenue less operating costs and tax, ranged from [X] to [X] times greater than the fair return - as measured by Vodacom's cost of capital using WACC - between the 2014 and 2019 financial years.

242. The Commission has also worked out the price-cost margin for the entire Vodacom group using the same method as was used for Vodacom South Africa. This is presented in the table below. Because goodwill is not reported in the annual financial reports, the Commission has not been able to remove the Group's goodwill from its fixed assets to work out its capital employed. Therefore, it has assumed that the Group's goodwill is equal to the goodwill in South Africa, and thus that the International business of Vodacom does not have any goodwill on its balance sheet. Again, we use the MTN South

219 Competition Appeal Court, Sasol Chemical Industries v Competition Commission, 131/CAC/Jun14, Decision on 17 June 2015; Competition Tribunal decision on the Sasol case (Case no. 48/CR/Aug10).

Table 19: The Vodacom Group's price-cost mark-up, FY2014 - FY2019

	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Total Revenue (a)	73,219	74,500	80,077	81,278	86,370	90,066
Operating costs + tax (e)	58,743	60,606	64,952	65,630	68,649	72,223
Cost of capital (m)	[<]	[<]	[<]	[<]	[<]	[<]
Margin after cost of capital (n=a-e-m)	[<]	[<]	[<]	[<]	[<]	[<]
Price-cost mark-up (o=n/(e+m))	[15%-20%]	[10 - 15%]	[10 - 15%]	[10 - 15%]	[10 - 15%]	[5% - 10%]
Average price-cost mark-up	[10% - 15%]					

Sources: Vodacom Group Annual Financial reports for years ended 31 March 2015-2019; Vodacom Group Booklet for the year ended 31 March 2015-2019; MTN SA WACC estimate for 2016; Commission workings

Notes: It was assumed that the goodwill of the South African business applied to the Vodacom Group and therefore that Vodacom International's fixed asset base did not include goodwill (as a part of intangibles) which may mean that the mark-ups are marginally overstated. In calculating the cost of capital for 2018 and 2019, the Commission derived Vodacom Group total assets by addition of the total assets as reported in the 2019 Booklet and Safaricom assets as reported in the 2019 Booklet. Similarly, in deriving Vodacom Group total liabilities, the Commission added Vodacom Group total liabilities as reported in the 2019 Booklet and Safaricom total liabilities as reported in the 2019 Booklet

Africa WACC, which compares closely with public estimates of the Vodacom Group WACC²²⁰.

243. The price-cost margin for the Vodacom Group is lower than for the Vodacom South Africa business which is consistent with the lower headline prices in other Vodacom territories and market power being exerted in the South African market. After allowing for a commensurate or fair return to investment to 'security holders' of the business, the Vodacom Group has been earning an average mark-up of **[10% - 15%]** per annum. This is obviously still impacted by the South African figures, which are included in the Group figures.

244. The Commission also estimated the price-cost mark-up for Vodacom's International business as a whole. As there is certain missing information on tax, goodwill, and current liabilities for Vodacom International, the Commission has had to estimate these. We estimated tax by subtracting tax in South Africa from the tax of the Vodacom Group. Current liabilities for the international business was calculated by multiplying the percentage of total liabilities

in the international business relative to the Vodacom Group by the current liabilities of the Vodacom Group. It was also assumed that there was no goodwill attached to the international business. The results of this analysis are shown in Table 20.

245. Based on these estimates, the price-cost mark-up for Vodacom's International business was on average **[-5% - 0%]** over the FY2014-FY2019 period. This is closer to the fair return on capital employed, in contrast to the price-cost mark-up of Vodacom South Africa which is evidently high.

246. The Commission has also compared Vodacom International's actual margin to its fair return based on the WACC for comparative purposes. This is shown in the table below.

247. Table 21 shows that Vodacom International's estimated actual margin, which is measured as revenue less operating costs and tax, ranged from [<] to [<] times the fair return - as measured by Vodacom's cost of capital using WACC - between the 2014 and 2019 financial years. This is far lower than the differences seen in the Vodacom South African business over the same period

220 Estimated WACC over a number of financial years for the Vodacom Group available at: <https://www.gurufocus.com/term/wacc/VDMCY/WACC-/Vodacom-Group-Ltd> [Accessed on 20 August 2019]

Table 20: Vodacom International's price-cost mark-up estimate, FY2014 - FY2019

	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Total Revenue (a)	[X]	[X]	[X]	[X]	[X]	[X]
Operating costs + tax (e)	[X]	[X]	[X]	[X]	[X]	[X]
Cost of capital (m)	[X]	[X]	[X]	[X]	[X]	[X]
Margin after cost of capital (n=a-e-m)	[X]	[X]	[X]	[X]	[X]	[X]
Price-cost mark-up (o=n/(e+m))	[0% - 5%]	[-5% - 0%]	[-10% - -5%]	[-10% - -5%]	[-10% - -5%]	[-10% - -5%]
Average price-cost mark-up	[-5% - 0%]					

Sources: Vodacom Annual Group Financial reports for years ended 31 March 2015-31 March 2019; Vodacom Group Annual Integrated reports for years ended 31 March 2015-2019; MTN SA WACC estimate for 2016; Commission workings

Notes: Vodacom acquired Safaricom in the year ended 31 March 2018. In calculating the cost of capital for 2018 and 2019, the Commission derived Vodacom International total assets by addition of the total assets as reported in the 2019 Booklet and Safaricom assets as reported in the 2019 Booklet. Similarly, in deriving Vodacom International total liabilities, the Commission added Vodacom International total liabilities as reported in the 2019 Booklet and Safaricom total liabilities as reported in the 2019 Booklet

Table 21: Vodacom International's actual return versus fair return, FY2014 - FY2019

	31 March 2014	31 March 2015	31 March 2016	31 March 2017	31 March 2018	31 March 2019
Actual margin including tax	[X]	[X]	[X]	[X]	[X]	[X]
Fair return (cost of capital)	[X]	[X]	[X]	[X]	[X]	[X]
Actual return v fair return	[X]	[X]	[X]	[X]	[X]	[X]

Sources: Vodacom Group Annual Financial reports for years ended 31 March 2015-31 March 2019; Vodacom Group Annual Integrated reports for years ended 31 March 2015-31 March 2019; MTN SA WACC estimate for 2016; Commission workings

Notes: Vodacom acquired Safaricom in the year ended 31 March 2018

(its actual return was [X] to [X] times the fair return).

248. The evidence above shows that Vodacom South Africa is not only a highly profitable business, but it is to such an extent that there is a *prima facie* case for excessive pricing in terms of Section 8(a) of the Competition Act against Vodacom South Africa:

248.1 While the analysis conducted above is based on Vodacom's total revenue, including some revenue streams outside of revenue from mobile data services (see paragraph 237.1 above), Vodacom's market power is similarly reflected in both voice and data products which accounts for the vast majority of its business.

249. Perhaps more importantly for this Section, regardless of whether Vodacom's profitability ultimately meets the threshold for excessive pricing, it is clear that the margins earned by Vodacom strongly indicate that it has significant market power and is largely unconstrained in its pricing. The assessment of Vodacom above cannot co-exist with any claim of a competitive market or competitive pricing by Vodacom.

Price-cost mark-ups of MTN

250. The Commission has also used MTN's audited financial statements for its South African business to examine price-cost mark-ups over a four-year period. The approach taken is similar to the approach used above to calculate Vodacom's price-cost mark-ups and is described below.

Table 22: MTN South Africa's revenue and costs (Rm), FY2014 - FY2018

	31 Dec 2014	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018
Total revenue	[X]	[X]	[X]	[X]	[X]
Operating costs	[X]	[X]	[X]	[X]	[X]
Operating margin	[X]	[X]	[X]	[X]	[X]
Tax	[X]	[X]	[X]	[X]	[X]
Operating costs + tax	[X]	[X]	[X]	[X]	[X]

Sources: MTN Pty Ltd Annual Financial statements (Confidential) for years ended 31 Dec 2014 - 31 Dec 2018

Table 23: MTN South Africa's total capital employed (Rm), FY2014 - FY2018

	31 Dec 2014	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018
Fixed assets (f)	[X]	[X]	[X]	[X]	[X]
Goodwill (g)	[X]	[X]	[X]	[X]	[X]
Fixed assets - Goodwill (h=f-g)	[X]	[X]	[X]	[X]	[X]
Current assets (i)	[X]	[X]	[X]	[X]	[X]
Current liabilities (j)	[X]	[X]	[X]	[X]	[X]
Net current assets (k=i+j)	[X]	[X]	[X]	[X]	[X]
Total capital employed (l=h+k)	[X]	[X]	[X]	[X]	[X]

Sources: MTN Pty Ltd Annual Financial statements (Confidential) for years ended 31 Dec 2014 - 31 Dec 2018

Notes: In the AFS ended 31 March 2018, MTN also included the restated amounts for the AFS ended 31 March 2017. Therefore, the Commission used the restated figures for AFS ended 31 March 2017 as contained in the AFS ended 31 March 2018

250.1 *Revenue.* The Commission has relied on total revenue. This includes non-operating revenue (such as mobile telephones and accessories revenue) and non-data operating revenue (such as revenue from voice, mobile money, connection fees and SMS services). As noted above for Vodacom, while data revenue is not isolated in this analysis, MTN's market power would be reflected similarly in other aspects of its business such as voice services.

250.2 *Operating costs plus tax.* Operating costs were calculated by subtracting operating profits from revenue. Operating costs include direct network expenses, staff expenses, government and regulatory fees and other operating costs. It does not include tax and finance costs. Because the WACC is a post-tax WACC, tax has been added

to operating costs. This is shown in the Table 22.

250.3 *Total capital employed.* This is calculated by adding fixed assets to net current assets (current assets minus current liabilities). Fixed assets include network equipment but also intangible assets, namely network licenses, computer software, customer bases, and other. Goodwill has been specifically excluded from intangible assets. MTN's total capital employed is shown in Table 23.

250.4 *The cost of capital.* MTN's cost of capital has been determined by multiplying the WACC in percentage terms by the average total capital employed by the business (the average of the capital employed in the previous financial year and capital employed in the current financial year). MTN provided a 2016

Table 24: MTN South Africa's cost of capital (Rm), FY2015 - FY2018

	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018
Average total capital employed (kAverage = (kt-1 + kt) / 2)	[X]	[X]	[X]	[X]
WACC (l)	[X]	[X]	[X]	[X]
Cost of capital (m=kAverage*I)	[X]	[X]	[X]	[X]

Sources: MTN Pty Ltd Annual Financial statements (Confidential) for years ended 31 Dec 2015 - 31 Dec 2018; MTN SA WACC estimate for 2016; Commission workings

Table 25: MTN South Africa's price-cost mark-up, FY2015 - FY2018

	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018
Total Revenue (a)	[X]	[X]	[X]	[X]
Operating costs + tax (e)	[X]	[X]	[X]	[X]
Cost of capital (m)	[X]	[X]	[X]	[X]
Margin after cost of capital (n=a-e-m)	[X]	[X]	[X]	[X]
Price-cost mark-up (o=n/(e+m))	[5% - 10%]	[0% - 5%]	[0% - 5%]	[0% - 5%]
Average piece-cost mark-up	[0% - 5%]			

Sources: MTN Pty Ltd Annual Financial statements (Confidential) for years ended 31 Dec 2015 - 31 Dec 2018; MTN SA WACC estimate for 2016; Commission workings

WACC estimate (pre and post-tax) which [X]. [X].²²¹ The Commission replicated the 2016 calculations as provided by MTN to derive 2014, 2015, 2017, and 2018 WACC estimates. In some instances, the Commission assumed that the 2016 variables as used by MTN in its calculations are applicable to the other years. The Commission used the post-tax WACC estimates. Total capital employed, the WACC, and the cost of capital over MTN's last four financial years are shown in the Table 24 as average total capital employed was only available to the Commission over this period.

251. *The price-cost mark-up.* The price-cost mark-up, as shown in Table 25, is calculated by subtracting from total revenue both operating costs and capital costs expressed as a percentage of the sum of operating and capital costs.

252. Based on these calculations, the price-cost mark-ups are positive which indicates that MTN likely has pricing power domestically. While the margins may not be conclusive of excessive pricing, the unit costs under long-term competitive equilibrium may potentially be lower and thus the true price-cost mark-up may be larger. After allowing for a commensurate or fair return to investment to 'security holders' of the business, MTN has been earning an average mark-up of between [0% - 5%] per annum from its South African business.

253. Table 26 contains a comparison of MTN South Africa's actual margin to its fair return based on the WACC.

254. The table shows that MTN SA's actual margin, which is measured as revenue less operating costs and tax, ranged from [X] to [X] times greater than the fair return - as measured by MTN's cost of capital

221 MTN's submission, 20 November 2019, Confidential

Table 26: MTN South Africa's actual return versus fair return, FY2015 - FY2018

	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018
Actual margin including tax	[X]	[X]	[X]	[X]
Fair return (cost of capital)	[X]	[X]	[X]	[X]
Actual return v fair return	[X]	[X]	[X]	[X]

Sources: MTN Pty Ltd Annual Financial statements (Confidential) for years ended 31 Dec 2015 - 31 Dec 2018; MTN SA WACC estimate for 2016; Commission workings

Table 27: MTN Group's price-cost mark-up, FY2015 - FY2018

	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018
Total Revenue (a)	147,063	147,920	132,869	134,560
Operating costs + tax (e)	123,057	142,124	117,316	116,414
Cost of capital (m)	[X]	[X]	[X]	[X]
Margin after cost of capital (n=a-e-m)	[X]	[X]	[X]	[X]
Price-cost mark-up (o=n/(e+m))	[0% - 5%]	[-10% - -5%]	[-5% - 0%]	[0% - 5%]
Average price-cost mark-up	[-5% - 0%]			

Sources: MTN Group Annual Financial statements for years ended 31 Dec 2015 - 31 Dec 2018; MTN SA WACC estimate for 2016; Commission workings

Notes: The estimated WACC for the South African business was applied to the entire Group business

using WACC - between the 2015 and 2018 financial years.

255. The Commission also estimated the price-cost margin for the entire MTN Group using the same method as was used for MTN South Africa. This is presented in the table above. Because goodwill is reported in the annual financial reports as 'goodwill and intangible assets', the amount deducted from its fixed assets to work out its capital employed includes intangible assets in addition to goodwill. For WACC, we use the same figures as estimated for MTN South Africa.

256. Based on these estimates, the price-cost mark-up for MTN's overall Group was on average [-5% - 0%] over the FY2015-FY2018 period which is closer to a fair return on capital employed. Therefore, compared to the MTN Group business, the price-cost mark-up of MTN South Africa are relatively high.

257. The Commission has also compared MTN Group's actual margin to its fair return based on the WACC for comparative purposes. This is shown in the Table 28.

258. The table shows that MTN Group's actual margin, which is measured as revenue less operating costs and tax, ranged from [X] to [X] times greater than the fair return - as measured by MTN Group's cost of capital using WACC - between the 2015 and 2018 financial years. Thus, it is clear that MTN South Africa is significantly more profitable than the MTN Group, which is consistent with a finding that MTN has market power in the South African market.

259. What the evidence shows is that MTN in the South African market is earning in excess of its estimated fair return and thus it appears to possess market power. What is less apparent is whether MTN's pricing may amount to excessive pricing in terms of Section 8(a) of the Act.

222 In the MTN Group Limited Integrated Report 2018, the 2017 figure were restated because of changes in accounting policies. The Commission therefore used the 2017 restated figures

Table 28: MTN Group’s actual return versus fair return, FY2014 - FY2019

	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018
Actual margin including tax	[X]	[X]	[X]	[X]
Fair return (cost of capital)	[X]	[X]	[X]	[X]
Actual return v fair return	[X]	[X]	[X]	[X]

Sources: MTN Group Annual Financial statements for years ended 31 Dec 2015 - 31 Dec 2018; MTN SA WACC estimate for 2016; Commission workings

Notes: The estimated WACC for the South African business was applied to the entire Group business

4.3.3 THE IMPORTANCE OF QUALITY AND FIRST-MOVER ADVANTAGES

260. The submissions received from smaller operators and other commentators appear to agree that the larger operators have significant first-mover advantages. Vodacom and MTN, however, both take issue with the Commission’s focus on first-mover advantages in the Provisional Report, as they have argued that any such advantage has been lessened or dealt with and is therefore no longer relevant.²²³

261. MTN argues that, in terms of retail competition, the Commission has placed too much focus on price and has ignored important non-price competition factors. In this regard, MTN submits that *“Even in a market where larger operators might not have responded to headline pricing pressure from later entrants, this would not necessarily indicate that competition is weak, given the numerous dimensions upon which MNOs can compete, such as quality, infrastructure and innovative offerings”*.²²⁴ In addition, MTN notes that the Commission has not accounted for *“... the numerous features of the market in which later entrants have substantial advantages over incumbents”*.²²⁵ Similarly, Vodacom

also point to factors which could place later entrants in an advantageous position relative to earlier market entrants.²²⁶

262. In reviewing Vodacom and MTN’s arguments against quality and first-mover advantages, the Commission notes that both Vodacom and MTN seem, however, to acknowledge the reality of first-mover advantages in the mobile market.²²⁷ Both operators even appear to admit that these advantages remain, but that they have been mitigated or reduced due to various factors.²²⁸ In this regard, Vodacom submits that *“... it is also clear that any potential first mover advantage has been mitigated by: existing facilities leasing regulations since 2010; a number of DPS agreements, which further enhances facility sharing; and the opportunity new entrants have to leverage the numerous urban buildings and structures for their sites, reducing dependence on incumbent mast owners”*.²²⁹ MTN submit that *“barriers to entry and first-mover advantage are considerably less impactful than the Inquiry asserts”*,²³⁰ while Vodacom also acknowledge barriers to growing market shares, but specify that these barriers are not *“insurmountable”* as they exist elsewhere in other markets where there have been successful late entrants.²³¹

223 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.116 (Non-Confidential). MTN response to the DSMI Provisional Report. 14 June 2019. Annexure D, p.6, para 21 (Non-Confidential)

224 MTN response to the DSMI Provisional Report. 14 June 2019, p.40-41, para 4.39 (Non-Confidential)

225 MTN response to the DSMI Provisional Report. 14 June 2019, p.37-38, para 4.26 (Non-Confidential)

226 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p. 146-155 (Non-Confidential)

227 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.127. MTN response to the DSMI Provisional Report. 14 June 2019. Annexure D, page 6, para 21 (Non-Confidential)

228 MTN response to the DSMI Provisional Report. 14 June 2019, p. 38, para 4.28 & para 4.30 (Non-Confidential)

229 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.116 (Non-Confidential)

230 MTN response to the DSMI Provisional Report. 14 June 2019. Annexure D, p.6, para 21 (Non-Confidential)

231 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.150 (Non-Confidential)

263. MTN further accepts that infrastructure advantages exist in the mobile market as it submits " ... *infrastructure advantages do not last particularly long in the rapidly evolving mobile communications market*".²³² In terms of technology rollout, Vodacom also emphasise that " ... *neither Vodacom nor MTN had any first mover advantage with regard to 4G rollout*"²³³ which by itself could suggest implicitly that for earlier technology rollouts (for 2G and 3G) there had been first-mover advantages for Vodacom and MTN, but also ignores the benefits of other first mover advantages (such as coverage, control of sites and availability of capital) that may smooth the roll-out of new technology.
264. Whether first-mover advantages remain or not, it is clear that the first-mover advantages *did* exist and that the large operators have benefited from these advantages and continue to do so. In this regard, as evidenced in the Provisional Report,²³⁴ Vodacom and MTN have significantly higher revenue figures and capex investments than the smaller players, as well as enjoying higher and more resilient profits which is shown in Section 4.3.2 of this report.
265. Regardless of the current role of first-mover advantages, the Commission notes that the market positions of Vodacom and MTN, and the fact that they need not respond to the challenger operators (as covered in Section 4.3.4 below), clearly show that they retain advantages over the challenger operators. If there was competition that took into account a price-quality trade-off, where Vodacom state " ... *it has to be mindful about the extent to which it reduces prices as it aims to maintain a good quality of service*",²³⁵ then one would still expect to see

a response from Vodacom or MTN in terms of pricing specifically (given the competitive action by Telkom was based on pricing), but Section 4.3.4 indicates that this has not been the case. Furthermore, neither Vodacom nor MTN would be earning excess returns as is evident from the profitability analysis.

266. Furthermore, if aspects such as network quality and infrastructure investment are key domains of competition, then Vodacom and MTN (by their own accounts) are way ahead relative to the later entrants. Vodacom submits that it "... *has historically offered the best network quality and coverage in SA. Vodacom makes significant investments to maintain/improve its network quality because customers value it highly*".²³⁶ MTN emphasises that itself and Vodacom "... *also compete on non-price factors such as quality and coverage ... A key element of competition has been investing to address exponential growth in demand*".²³⁷
267. In this regard, the Provisional Report states that Vodacom and MTN, as the first entrants, were better placed to invest in network infrastructure and that this can continue to influence an operator's retail performance as it enables them to invest more in providing better quality mobile services.²³⁸ While Vodacom states that "*The MNOs present in the market have different strengths, and have positioned themselves to target customers with different preferences*"²³⁹, the strengths and quality advantages of the larger operators appear more the result of first-mover advantages than chosen positioning and customer strategies by the operators. As noted in the Provisional Report, this has also been suggested in market research²⁴⁰ and previous telecommunications cases.²⁴¹

232 MTN response to the DSMI Provisional Report. 14 June 2019, p.38, para.4.28 (Non-Confidential)

233 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.148 (Non-Confidential)

234 DSMI Provisional Findings and Recommendations. 24 April 2019, p.107

235 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.77 (Non-Confidential)

236 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.113 (Non-Confidential)

237 MTN response to the DSMI Provisional Report. 14 June 2019, p.29, para.4.3 (Non-Confidential)

238 Data Services Market Inquiry Provisional Findings and Recommendations. 24 April 2019. Page 107 & 117

239 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.100 (Non-Confidential)

240 Muck, J. & Heimeshoff, U (2012) First Mover Advantages in Mobile Telecommunications: Evidence from OECD Countries, Dusseldorf Institute for Competition Economics Discussion Paper, no. 71, p. 2

241 Competition Tribunal. Case No: 2014Jul0382. Mergers and Acquisitions' Report. Available at: [https://www.comptrib.co.za/assets/Up loads/vodacom-neotel_non-confidential-report.pdf](https://www.comptrib.co.za/assets/Up%20loads/vodacom-neotel_non-confidential-report.pdf) [Accessed on 10 February 2019]

268. Despite Vodacom and MTN's arguments related to first-mover advantages, this section shows that irrespective of the current influence of first-mover advantages, their existence has created benefits for Vodacom and MTN and these benefits have influenced retail mobile competition as the larger operators clearly still hold advantages over the challengers. Both MTN and Vodacom speak to the importance of infrastructure and infrastructure-based competition, yet they are able to fund their substantially higher capex from retained earnings, a fact that Vodacom and MTN have not disputed in their submissions²⁴², whilst their competitors must go to debt or equity markets to do so. This section shows that the first-mover advantages of larger operators remain an important aspect for retail mobile competition and it ultimately indicates that Vodacom and MTN have market power.

269. The constant battles Cell C has had with its debt levels and equity refinancing over an extended period are reflective of precisely this challenge for the newer networks. Its current financial woes only serves to highlight this difficulty entrants face. While Telkom Mobile has had the benefit of a parent company with other business lines, but it is still having to fund new infrastructure with debt. It too has recently had to go out to the market for financing to fund its mobile business expansion despite showing healthy subscriber growth. This places the smaller networks at a disadvantage in providing the same subscriber coverage and network quality.²⁴³

4.3.4. EVIDENCE OF 'COMPETITIVE RESPONSES'

270. In this sub-section, the Commission analyses the evidence of alleged competitive responses and competitive interaction provided to us by the two largest operators. In a competitive market, we expect more

immediate responses by competitors when for instance, one of the market participants substantially lowers their price for a key product. In other words, the more immediate the response from a competitor to a competitive initiative, the stronger the competitive interaction between market participants. Conversely, the longer it takes for competitors to respond to a competitive initiative (if at all), the weaker the competitive constraint is likely to be in that market. Alternatively, it may not be competitive response at all and simply a change brought about by other dynamics in the market such as high-volume growth and lower unit costs.

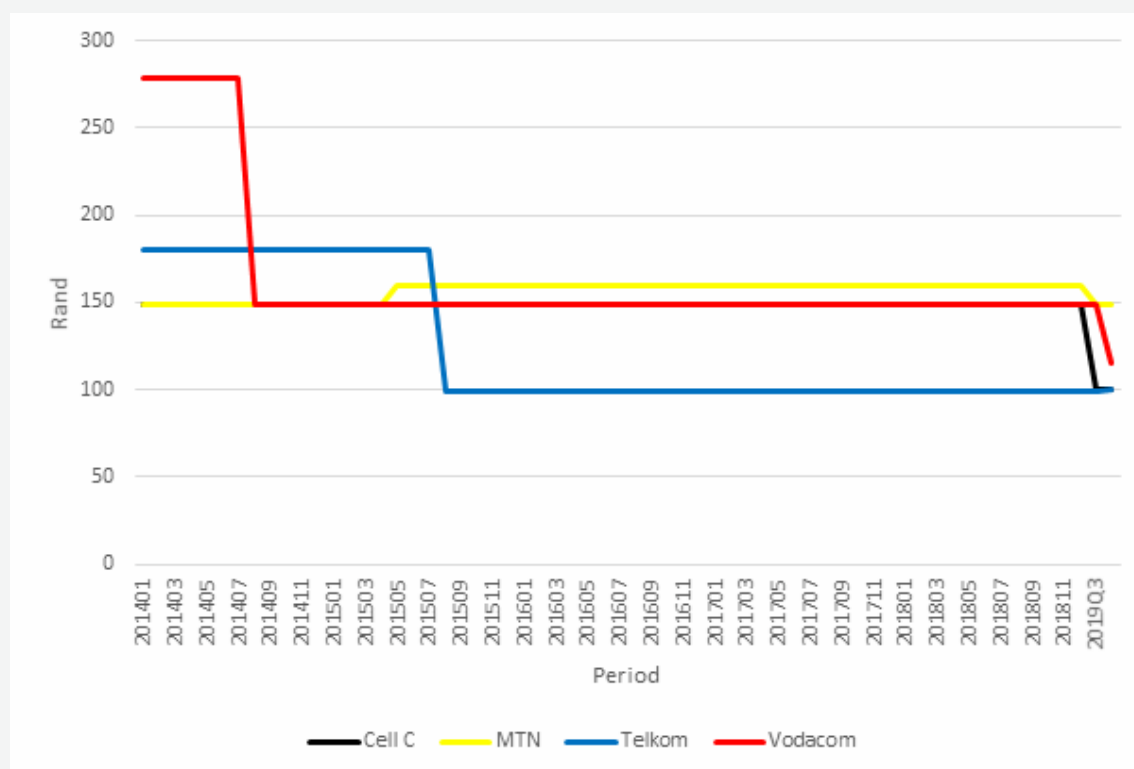
271. One aspect focused on in the Provisional Report was the lack of competitive response from MTN and Vodacom to Telkom's lowering its 1GB price in 2015. Below, we depict the updated graph from the Provisional Report showing the price of 1GB data bundles over time. As depicted below, in August 2015, Telkom reduced its price for a 1GB bundle of data by 45% from R180 to R99 and kept this price unchanged throughout the period (barring a slight increase by R1 in 2019 Q4). Following this decrease, Telkom charged the cheapest price for 1GB bundle of data. The other MNOs however did not respond to Telkom's significant price reduction for 1GB bundle of data.

272. While Vodacom has since recently decreased certain 1GB prices, these price movements do not appear to be in direct response to Telkom or any other operator. Cell C also recently reduced its 1GB price in 2019 Q3 from R149 to R100 to match Telkom's price (Telkom increased its price by R1 to R100), Vodacom reduced its 1GB data price from R149 to R115 in 2019 Q4 and MTN also reduced its price in 2019 Q3 from R160 to R149.

242 While Vodacom argue that capex can be funded through debt and equity finance, and that the capex requirements of entrants may be less than the incumbents, they do not ultimately dispute this assertion. (See Section 5.3.1 of Vodacom's submission in respect of the Provisional Report, 14 June 2019)

243 Telkom SA SOC Limited Group Provisional Annual Results for the year ended 31 March 2019. See https://www.telkom.co.za/ir/apps_static/ir/pdf/financial/pdf/Telkom_Annual_Results_Booklet_2019.pdf [Accessed 19 November 2019]

Figure 43: 1GB prepaid bundles valid 1 month (in Rands)



273. As covered above, MTN and Vodacom both argue that the mobile market is competitive and dynamic and that there are numerous examples of the larger operators responding to competition in the market, and therefore the Commission has erred in its findings on competition. The Commission has reviewed the submissions received and, in summary, found little credible evidence of such. In responding below, firstly, we analyse evidence as submitted by Vodacom and MTN in support of their argument that they responded to Telkom's price reduction for 1GB data bundle. Secondly, we analyse general evidence of competitive responses in the market. Thirdly, we conclude this sub-section.

Vodacom and MTN arguments not supported by evidence

274. One of the Commission's arguments in the Provisional Report is that the largest MNOs, Vodacom and MTN, failed to respond to a key price change of Telkom. In August 2015,

Telkom reduced its price for 1GB bundle of data (30 days) by 45% from R180 to R99 and kept this price unchanged throughout the period of analysis in the Provisional Report (up to October 2018). Considering this, the Commission, however observed that the largest MNOs (Vodacom and MTN) did not reduce their prices in response to Telkom's significant price reduction. Accordingly, the Commission concluded that this is an indication of market power and competition concerns in the market as the evidence suggested that the larger networks can price independently of the smaller networks. This is covered extensively in Section 6 of the Provisional Report.

275. Both Vodacom and MTN argue that they have in fact responded to Telkom's price reduction and they have provided evidence in this regard. Below we assess each of Vodacom's and MTN's alleged responses to Telkom's price reduction of 1GB bundle of data as well as the available evidence.

Vodacom's argument

276. During the public hearings held in October 2018, Vodacom was questioned as to why it did not respond to Telkom's price reduction for the 1GB prepaid data bundle. In responding, Vodacom made two arguments:

276.1 Firstly, it argued that it did not decrease the headline price for a 30-day 1GB bundle (the same product as Telkom) but responded in a different way by adding an extra 1GB of 'night' data. Vodacom however conceded that only consumers could judge whether this is comparable with Telkom's bundle.

276.2 Secondly, Vodacom argued that "... I have 80% of my customers buying daily, weekly bundles. So, that's what this is my response. I introduced R12, R29, R79, R99 bundles..."²⁴⁴ On this basis, Vodacom appeared to argue that they did indeed respond through the introduction of various smaller bundles with shorter validities, or at least lower prices on these bundles.²⁴⁵ In its response to the Provisional Report, Vodacom submits that "Vodacom in 2018 introduced new hourly and daily bundles at price points of R12 for 1 hour and R29 for a day, both for an allocation of 1GB"²⁴⁶ and this has been confirmed in subsequent communication²⁴⁷. This goes against the evidence initially presented by Vodacom because short-validity 1GB bundles at the reduced R12 and R29 price points were in fact only introduced in 2018 while Telkom's price reduction happened in August 2015.

277. While Vodacom has, in its submissions with respect to the Provisional Report, attempted to describe a number of its competitive responses or actions, there is in fact little

evidence that relates to the *specific* action of Telkom's dropping its price for the 1GB prepaid data bundle. Given the focus placed on this in the Commission's Provisional Report, this suggests that the evidence does not match the response given in the public hearings or that there is insufficient evidence of a response to Telkom. In short, the evidence presented by Vodacom in its response to the Provisional Report and the evidence gathered throughout the course of the Inquiry indicates that Vodacom did not respond in any significant manner to Telkom's price drop:

277.1 Firstly, it appears as if Vodacom has moved away from its initial position as argued during the public hearings that they responded to Telkom's price reduction of 1GB bundle of data by offering an extra 1GB of data in terms of night data. Vodacom does not refer again to this claim. The Commission's own research suggests that the 1GB night data was put in place in July 2010 and this was for contract customers, where if they buy 1GB of data on 'Broadband Advances', they get an additional 1GB free data to use between midnight and 5am.²⁴⁸ Notwithstanding this, and even to the extent that the claim made at the public hearings regarding the introduction of night data *and the timing thereof* is factually correct, it is still unlikely that such an action would represent a meaningful and direct response in any event.

277.2 Secondly, it is not clear that shorter-validity bundles or smaller bundles can be considered the best or closest substitute for the 1GB Telkom data bundle. If Telkom's drop in price truly led to a shift in consumers away from Vodacom and to Telkom, the product likely to be directly substitutable with

244 Vodacom's presentation at the public hearings held on 17-19 October 2018. See Day 2 transcripts, p. 45-46, line 15-27

245 Vodacom's presentation at the public hearings held on 17-19 October 2018. See Day 2 transcripts, p.30

246 Vodacom response to Provisional Findings Report of DSML. 14 June 2019, p.33 (Non-Confidential)

247 Vodacom's submission, 05 November 2019, p.3

248 Mybroadband.co.za (17 July 2010) *Buy one Gig, get one free: Vodacom Advanced Broadband*, [Online]. Available at : <https://mybroadband.co.za/news/broadband/13850-buy-one-gig-get-one-free-vodacom-advanced-broadband.html>. [Accessed on 10 September 2019]

the Telkom product would be the Vodacom 1GB product. While there may be some substitution for some customers between smaller or short-validity bundles and the Telkom bundle, it is less likely as a means for Vodacom to respond.

277.3 Thirdly, according to Vodacom's submission, hourly and daily bundles were introduced earlier i.e. [§<].²⁴⁹ Given that Vodacom's hourly and daily bundles were introduced prior to Telkom reducing their price for 1GB of data in August 2015, it is clear that their introduction was not in response to Telkom. At the public hearing, Vodacom appears to have argued that they responded to Telkom by introducing hourly and daily bundles while in their submission in response to the Provisional Report, Vodacom states that hourly and daily bundles were introduced in [§<], [§<] Telkom reduced their 1GB data bundle price. To the extent that Vodacom was in fact arguing that they merely adjusted pricing of the shorter-validity bundles, our research suggested that Vodacom did decrease their price of 20MB data bundle valid for a day from R12 to R5 in 2015 Q3, the same period Telkom reduced their price of 1GB data bundle in August 2015. However, the price for the 10MB bundle valid for 1 day did not change. We have no evidence of any other such price changes and indeed Vodacom has not provided any evidence in this regard. Vodacom also confirmed that weekly bundles were only introduced [§<]²⁵⁰, [§<] after Telkom reduced their price for 1GB bundle of data.

277.4 Fourthly, in its submission, Vodacom submits that [§<]²⁵¹ and [§<].²⁵² What this submission of Vodacom shows is, firstly, that hourly and daily bundles were

introduced for a reason not directly related to competitive rivalry. Similarly, the submission of Vodacom here is [§<]. [§<] - which contrasts with the submission that it responded to Telkom 1GB data bundle 30-day price reduction with products that were not directly comparable. Secondly, this directly contradicts Vodacom's submission that weekly bundles were a response to Telkom decreasing their price for the 1GB bundle, as per the public hearings.

277.5 Furthermore, as will be discussed in more detail below, Vodacom does present evidence of it responding to Telkom's pricing [§<]. It is telling that Vodacom's responses here are on more directly comparable products and terms, and with clear changes in headline prices, whereas on the 1GB 30-day prepaid data bundle, there is no directly comparable response from Vodacom.

277.6 Finally, there is simply no reference in Vodacom's submission in respect of the Provisional Report to the drop in the 1GB price of Telkom, despite the clear provisional findings on this evidence reached by the Commission. There is also no direct reference made by Vodacom to Telkom's price reduction of 1GB bundle of data in August 2015 as the reason weekly bundles²⁵³ were introduced in [§<]. Thus, the Commission can only conclude that Vodacom's did not in fact respond to Telkom's move to decreasing pricing for the 1GB bundle.

MTN's argument

278. Similarly, during the public hearings held in October 2018, MTN was asked why it did not respond to Telkom's price reduction for 1GB bundle of data. In this regard, MTN stated that *"I think the people who have got the mic are the ones who are talking about*

249 Vodacom's submission, 14 June 2019, p.132-133 (Confidential)

250 Vodacom's submission, 14 June 2019, p.133 (Confidential)

251 Vodacom's submission, 14 June 2019, p.132 (Confidential)

252 Vodacom's submission, 14 June 2019, p.133 (Confidential)

253 [§<]

149 because the majority of the people on the yellow network use the hourly bundles, the day bundles and the weekly bundles and the weekly bundles are actually cheaper than the monthly bundles..."²⁵⁴. The implication of MTN's response is that because most customers on MTN's network use short-validity bundles, and these are good value, it did not see the need to respond directly to Telkom's price decrease for a 1GB bundle of data valid for 30 days.

279. In its latest submissions with respect to the Provisional Report, MTN states that "over the last year alone, there have been significant activities in aggressive competition for post-paid and pre-paid subscribers."²⁵⁵ It then refers to a timeline which is held to detail "a selection of initiatives launched by different networks, indicating the competitiveness and the responsiveness of South African MNOs".²⁵⁶ The timeline presented depicts a number of actions and events from 2014 onwards.

280. A review of the evidence presented by MTN and the evidence available to the Commission suggests that the Commission's finding in the Provisional Report that MTN did not respond to Telkom's lower price for the 1GB prepaid data bundles is indeed correct:

280.1 Firstly, from the timeline as contained in MTN's submission, MTN states that it launched its daily, weekly and rush hour bundles [§<] to Vodacom. Thus, its daily, weekly and hourly bundles could not have been introduced in response to Telkom's price change in 1GB of data. We are also not aware of, and MTN has not presented, any evidence of any significant price changes for the smaller and lower-validity bundles in 2015.

280.2 Secondly, from the timeline as contained in MTN's submission, MTN states that it continued to offer "1GB promotion to new prepaid connections in order to

assist with driving across connections and increase data consumption. This was launched in Q3 2016 in response to similar offer launched by Vodacom, which had a significant impact on connections"²⁵⁷. What this submission of MTN shows is that the 1GB promotion was introduced in response to a similar offer by Vodacom "which had a significant impact on connections". This shows that, firstly, here MTN's response is direct - 1GB promotion in response to 1GB promotion - which contrasts the argument that because the majority of MTN's customers use short-validity bundles, MTN did not see the need to respond directly to Telkom's 1GB data bundle 30-day price reduction. Secondly, MTN responded to Vodacom because Vodacom's promotion had a competition effect on it. Thus, it shows that MTN does respond to initiatives that have a competitive effect on it.

280.3 Thirdly, and more broadly, MTN's evidence, both in respect of the Provisional Report and in previous submissions, on its response to competition of other MNOs does not mention Telkom's reduction of 1GB of data in any way.

281. Therefore, the available evidence suggests that MTN engaged in no direct response to Telkom's dropping of its 1GB prepaid data bundle price.

282. Importantly, as we have discussed previously, headline prices are important and significant indicators of pricing levels. While Vodacom and MTN have suggested that the focus on headline prices in our assessment of competition is unjustified, looking at movement in effective prices does not assist in understanding competition as even a monopoly may use price discrimination to increase volume and profits, thus lowering effective prices. Therefore, headline prices

254 MTN's presentation at the public hearings held on 17-19 October 2018. See Day 2 transcripts, p. 100, line 15-18

255 MTN's submission, 14 June 2019, p.46 (Non-Confidential)

256 MTN's submission, 14 June 2019, p.46 (Non-Confidential)

257 MTN's submission, 14 June 2019, p.46 (Non-Confidential)

are important and looking at a specific action by Telkom is key and indicative of broader competitive dynamics. Moreover, a reference to effective prices does not help either of the operators as their revenue per GB is considerably higher than that of Telkom which indicates that even on this measure there was no response.

283. Furthermore, while we do not have comparable data for MTN, as we show in paragraph 286.3, the 1GB 30-day bundle [redacted].

General evidence of competitive responses in the market

284. In this sub-section, we consider general evidence of competitive responses as submitted by Vodacom and MTN in their submissions in response to the Commission's Provisional Report.

Vodacom's evidence of general competitive response

285. In its response to the Provisional Report, Vodacom effectively concedes that it does not respond to Telkom. It points to a limited ability to respond which itself is held to be driven by capacity constraints. It argues that *"the CC fails to recognise that Vodacom's ability to respond to Telkom is limited by capacity constraints, which stands in contrast to Telkom's high levels of capacity, which is directly as a result of Telkom's privileged access to a substantial amount of high demand spectrum and its underlying fibre network which it can use to provide backhaul"*.²⁵⁸ From this argument, Vodacom states that Telkom is a competitor, but Vodacom claims that it cannot lower prices to match Telkom as this would affect its quality due to capacity constraints. Yet if Telkom was truly competing, they would be taking customers away from Vodacom, relieving its capacity constraint and therefore it

(Vodacom) would have capacity to respond. If Vodacom does not in fact have capacity (as it claims), this is evidence in itself of the fact that Telkom does not constrain them. Therefore, Vodacom need not respond to Telkom's competitive actions.

286. For other products besides data bundles, Vodacom did provide evidence of competitive responses [redacted]. For instance, Vodacom argues that [redacted].²⁵⁹
287. The overarching observation from Vodacom's evidence in relation to data products is that it responded to Telkom [redacted]. In this regard, Vodacom argues that [redacted].²⁶⁰
288. Therefore, as per Figure 44 (Figure 108 in Vodacom's submission), for data bundles, the evidence presented by Vodacom and the evidence more broadly in relation to data offerings suggests that Vodacom only provided competitive responses to Telkom relating [redacted] In the context of this market, these responses however cannot be regarded as evidence that the market is competitive:

- 288.1 Firstly, Vodacom only provided evidence of competitive responses relating to Telkom's [redacted]. We however know that Telkom pursued an aggressive pricing strategy even in the prepaid segment, the key example being the 45% decrease in the price of 1GB bundle of data in August 2015. Further, the majority of Vodacom's customers are prepaid. According to their data, [redacted].²⁶¹ Vodacom had 43 million subscribers for the quarter ended 30 June 2019, and only 5 million were post-paid customers.²⁶² So, at best, Vodacom's submissions show that its response covers only [redacted].
- 288.2 Secondly, even within [redacted]. This sub-segment represents a small portion of the [redacted].

258 Vodacom's submission, 14 June 2019, p.23 (Non-Confidential)

259 Vodacom's submission, 14 June 2019, p.142 (Confidential)

260 Vodacom's submission, 14 June 2019, p.142 (Confidential)

261 Vodacom Communication to the Commission dated 20 August 2019

262 Vodacom Group Trading update for the quarter ended 30 June 2019. Available <https://www.vodacom.com/pdf/quarterly-results/2019/vodacom-announcement-q1-24-07-2019.pdf> [Accessed 10 November 2019]

Figure 44: Record of Vodacom's responses to Telkom's monthly "big deals"



Source: Vodacom²⁶³

288.3 Thirdly, [redacted] or more per month is unlikely to constitute the largest share of the [redacted] segment. Evidence from the prepaid segment shows that usage is typically much less. Vodacom submits that [redacted].²⁶⁴ An examination of Vodacom's packages shows that there are [redacted] included, ranging from as little as 500MB per month. Therefore, based on Vodacom's submission, it appears that its response to Telkom is [redacted].

288.4 This shows that, on the evidence presented by Vodacom, it has only responded to Telkom in a [redacted]. It suggests that it is only in this area of the market where Telkom has impacted Vodacom's profits to a sufficient degree. This suggests that this is one area of the market where consumers perhaps have [redacted]. The fact that Vodacom can partition this group of customers successfully such that its pricing elsewhere does not need to respond is also indicative

of successful partitioning and price discrimination strategies which enhance market power. This is covered in the next section.

288.5 While we note that Vodacom has very recently decreased the price of a 1GB data bundle from R149 to R115, and the 1GB bundle is also available at R99 when one purchases the bundle through its app. The R115 1GB data bundle price was introduced by Vodacom four years after Telkom's drop-in prices and is therefore more likely a result of other market dynamics than a response to Telkom.

288.6 Thirdly, it is telling that when discussing competition and responses to competitors, Vodacom does not mention Cell C at all. It does not point to responses relating to Cell C's products or to responses relating to data offerings by Cell C. If the market was competitive

263 Vodacom's submission, 14 June 2019, p.142 (Confidential)

264 Vodacom's submission, 14 June 2019, p.46 (Confidential)

as argued by Vodacom, the competitive responses as argued by Vodacom would surely include offerings by the other three MNOs, including that of Cell C. Furthermore, it appears that Cell C in fact lowered their prices again, with their 1GB 30-day data bundle reduced to R100 in around November 2018²⁶⁵. Vodacom has not pointed to or mentioned any response to this change in price by Cell C.

MTN's evidence of general competitive response

289. In its submission with respect to the Provisional Report, MTN states that “*over the last year alone, there has been significant activities in aggressive competition for post-paid and pre-paid subscribers.*” It then refers to a timeline which is held to detail “*a selection of initiatives launched by different networks, indicating the competitiveness and the responsiveness of South African MNOs*”.²⁶⁶ The timeline presented depicts a number of actions and events from 2014 onwards. A review of this timetable submitted by MTN has led the Commission to conclude that these initiatives cannot be regarded as evidence of competitive rivalry in this market:

289.1 Firstly, the timetable only shows two instances where MNOs explicitly responded to a competitive initiative of other MNOs. Firstly, it shows MTN responding to Vodacom by also launching a 1GB promotion data to new prepaid customers. Secondly, it shows Telkom responding to MTN by launching a WhatsApp bundle at R15. Thus, the evidence shows that MTN has responded to Vodacom, but it does not evidence of MTN responding to Telkom or Cell C. Thus, evidence presented cannot be used to infer that there is sufficiently competitive rivalry whereby MTN faces a real competitive constraint from Telkom or Cell C.

289.2 Secondly, overall the timetable mainly shows short-term or temporary promotions by MNOs rather than evidence of MTN or other MNOs responding to reductions in headline data prices by another MNO. This focus on promotions and short-term plans is also a feature of MTN's original submission to the Commission.²⁶⁷ While this may be an area of the market where there is more competition, it cannot by itself be held as evidence of healthy or significant levels of competition in the market. These promotions are only likely to be taken advantage of by more savvy customers rather than the broader customer base²⁶⁸, and may also be a feature of firms' own price discrimination strategies rather than an example of competitive responses. It is also telling that the competitive actions of Telkom and Cell C are also focused on headline prices such as a 1GB 30-day data bundle which points to the relevance of these products.

290. Therefore, the evidence submitted by MTN in respect of the Provisional Report shows that its competitive responses are typically only in reference to actions by Vodacom rather than the other players. A broader reference to short-term promotions does not suggest a healthy competitive rivalry such that MTN is constrained by the smaller players.

Overall conclusion

291. The Commission in the Provisional Report conducted a pricing analysis, which also focuses on the key 1GB bundle of data valid for 30 days. Emanating from this analysis, the Commission argued in the Provisional Report that when Telkom reduced its price by 45% for the key 1GB bundle of data in August 2015, the other MNOs did not respond to Telkom's price change. Based

265 Mybroadband.co.za (20 November 2018) <https://mybroadband.co.za/news/cellular/285764-cell-c-launches-new-data-prices.html> [Accessed: 4 October 2019]

266 MTN's submission, 14 June 2019, p.48 (Non-Confidential)

267 MTN's submission, 27 November 2019, p.32 (Non-Confidential)

268 MTN's submission, 14 June 2019, p.21 (Non-Confidential)

on this, the Commission concluded that this is an indication of market power and competition concerns in the market as the evidence suggested that the larger networks, especially Vodacom, have not sought to respond with lower headline prices themselves.

292. The discussion above shows that despite MTN and Vodacom's objections to the Commission's conclusions, and their insistence that the market is competitive, the evidence presented by the two operators does not reveal any response to Telkom's pricing movements. Furthermore, the two operators have not provided any real evidence of competitive constraint or responses to the competitive constraints allegedly imposed by the smaller players. The only evidence presented to the Commission is a response by Vodacom to Telkom's pricing [3<]. This shows that there is weak competitive interaction amongst the MNOs.
293. The evidence presented suggests that MTN and Vodacom are more responsive to each other than the other players, but the Commission notes that the evidence here does not suggest that the level of competition is sufficiently vigorous to mean that there are no concerns for competition. And indeed, MTN and Vodacom's argument appears to be that there is competition amongst all four larger operators that drives competitive outcomes which is clearly not the case as the evidence presented in fact point to the lack of competitive interaction amongst the MNOS.


4.4 FINDINGS

294. Our assessment of the evidence and submissions received, particularly those of MTN and Vodacom, in the discussion above shows clearly that there are material competition concerns in the retail mobile market. The evidence is consistent with an uncompetitive market where the largest players can to a large extent price

independently of the smaller players. The analysis above reinforces the provisional findings of the Commission that there remain competition concerns in this market that need to be addressed in order for consumers to see more affordable prices for data services. It is also consistent with the findings that South Africa's prices are higher than other countries, as per Section 3 above.

295. While Telkom has shown improvement across key indicators for its mobile business,²⁶⁹ its growth in market shares has come off a low base and has not disrupted the overall entrenched market positions of the large players to any significant degree. While Vodacom in particular has pointed to certain advantages of Telkom, what this shows that is only with the alleged advantages that Telkom could begin to compete with Vodacom. However, it is still the smallest player in the market and Vodacom's apparent suggestion that it will continue to grow into a large player in future do not necessarily account for the likely market dynamics in the sector, including that Vodacom and MTN have not yet responded to Telkom to any significant degree and that Telkom's own incentives will change as it grows.
296. Furthermore, it is clear that that MTN and Vodacom have been able to sustain abnormal profits despite the alleged competitive constraints and 'fierce' competition that is asserted to be observable in the market. Vodacom in particular has shown sustained and significant returns that far exceed a 'fair' return on capital invested. This is inconsistent with a competitive market. Indeed, there is a *prima facie* case for excessive pricing against, at least, Vodacom.
297. Submissions received from MTN and Vodacom appear to concede that first-mover advantages were enjoyed by these firms, they also argue that these have been mitigated and are less significant now due to a number of factors. However, it is clear

269 Telkom Group Provisional Annual Results 2019.



from the above, that these firms enjoy a formidable and robust market position and the smaller firms do not exert a sufficient competitive constraint on them. Ultimately, whether first-mover advantages do or don't exist any longer is largely immaterial given historic advantages have placed these two into a clear position of market power that the largest operators continue to hold.

298. Furthermore, what the evidence presented to the Commission suggests is that the alleged advantages of Telkom have allowed Telkom to grow in the market, while Cell C which is without such advantages has failed to grow its share of the market. What this means therefore is that smaller firms such as the challenger networks, the WOAN, and new entrants require advantage in order to begin to compete with the larger firms. One element of this advantage may be additional spectrum assignments relative to the larger firms.

299. Lastly, and importantly, a review of the evidence provided affirms the Commission's view that the large operators failed to respond to Telkom's price changes in 2015, particularly the important 1GB bundle. More broadly, the evidence pointed to by MTN and Vodacom in support of their arguments in fact shows that these firms primarily respond to each other rather than one or both of Cell C and Telkom.

5. THE STRUCTURE OF DATA PRICES AND “ANTI-POOR” PRICING

5.1 SUMMARY OF PROVISIONAL FINDINGS

300. While investigating the Minister’s concern about the ostensibly high data prices in South Africa, the Commission received adjacent submissions showing that prices are not only high but are also anti-poor, i.e. poor consumers pay more for data on a ‘Rand per megabyte’ basis than wealthier consumers.

301. The Commission undertook to examine this claim by assessing (i) headline prices and (ii) effective prices of both Vodacom and MTN to establish whether poor consumers do in fact pay more for data than wealthier consumers on a Rand per MB basis and the possible reasons explaining these outcomes.

301.1 Using headline data prices of the four major MNOs, we found that it is true that prices of smaller data bundles are higher than the prices of larger data bundles on a per megabyte basis in multiples of up to six times. This was shown in Table 12 of the Provisional Report, which we

reproduce as Table 29 below for ease of reference. This trend was observed to have been persistent over a long period of time.

301.2 The MNOs accepted that this is what headline prices revealed, but argued in the public hearings that the gap between the price paid by low-volume consumers and high-volume consumers narrows when one looks at effective prices. MTN and Vodacom went on to claim that lower income consumers in fact pay less for data than higher income consumers when effective prices are considered. Effective prices are average prices that include all bundles used including short-validity bundles, promotional bundles and free data. The Commission tested this assertion using sample data provided by MNOs and found that this is not the case. Table 30 and Table 31 below (a replica of Table 15 and Table 16 in the Provisional Report) which present the provisional findings of the Commission’s assessment of MTN’s and Vodacom’s effective prices respectively (note that prices were indexed for confidentiality reasons with

Table 29: Replica of Table 12 of Provisional Report - The extent to which the implied prices of smaller bundles (i.e. 5MB, 10MB, 50MB, & 100MB) in South Africa exceed the prices of larger bundles (i.e. 1GB & 2GB) (Dec 2018)

	% higher than 1GB			5MB	% higher than 2GB		
	20-30MB	50MB	100MB		20-30MB	50MB	100MB
Cell C	236%	115%	95%		302%	157%	133%
MTN	275%	213%	119%	515%	362%	285%	169%
Telkom	193%	193%	193%		317%	317%	317%
Vodacom	168%	236%	95%		221%	302%	133%

Source: Own calculations based on information collected from MNOs’ websites

the in-bundle price for 1GB to 2GB rebased to 100). The tables show that customers in the lower in-bundle data usage brackets face higher in-bundle data rates compared to those in higher in-bundle usage brackets and that they face relatively higher OOB rates. For example, considering MTN data presented in Table 30 below, we found that customers using between 5-10MB of in-bundle data face an effective price (index) of 2,156,

which is more than 20 times the price of 100 faced by consumers in the 1-2GB usage bracket. Users in the smaller usage brackets also face higher OOB rates. For example, users in the 5-10MB in-bundle usage bracket pay an out-of-bundle rate that is 16.8% more than the out-of-bundle rate facing customers in the 1-2GB in-bundle usage bracket. These trends are also observed for Vodacom as shown in Table 31.

Table 30: Replica of Table 15 of Provisional Report - Effective prices for various bands of data usage on the MTN Network (July 2018) ²⁷⁰

In-bundle data usage	OOB price index**	In-bundle price index**	Price index for data without free data***	Price index for data with free data****	Observations	Percentage of sample
0	-	-	-	-	608,807	71.8%
0-1MB	-	-	-	-	3,126	0.4%
1-5MB	2,972	5,829	3,932	2,187	4,675	0.6%
5-10MB	2,714	2,156	2,042	1,163	3,746	0.4%
10-20MB	2,742	817	1,021	583	11,612	1.4%
20-50MB	2,425	652	840	513	20,150	2.4%
50-100MB	2,277	460	607	399	23,059	2.7%
100-500MB	2,421	285	381	273	71,839	8.5%
500MB-1GB	2,619	136	191	152	36,762	4.3%
1-2GB*	2,544	100	135	112	39,022	4.6%
2-3GB	2,398	108	134	114	13,706	1.6%
3-5GB	2,270	113	142	125	8,195	1.0%
5-10GB	2,298	88	121	109	3,188	0.4%
10-50GB	2,113	74	85	81	560	0.1%
Total sample	-	-	-	-	848,447	

Notes

*Index explained - The index uses in-bundle consumption in the 1-2GB usage band as a base. The index indicates the positions of effective prices of different usage bands (e.g. 10-20MB) across different types of consumption (e.g. OOB) relative to the effective price of the 1-2GB usage band on the in-bundle consumption type which we use to represent the minimum for high-volume usage. In constructing the index, we set the price of the 1-2GB usage band of in-bundle consumption type at 100. We then computed the relative positions of the effective prices of all the other bands across consumption types to the 1-2GB bracket. The index is a pure number and has no unit of measurement.

**OOB and In-bundle price index refers to the indexed effective prices of OOB and In-bundle rates respectively. For each usage band, the effective rates were computed by dividing the total revenue earned by total traffic.

***Price index for data without free data refers to the indexed effective price of data without free data. Data without free data is the sum of OOB bundle and in-bundle data used by a subscriber. Therefore, the effective rate for this category divides the sum of OOB and in-bundle revenue by the sum of OOB and in-bundle traffic.

****Price index for data with free data refers to the indexed effective price of data with free data. The effective price of data with free data, is the sum of OOB and in-bundle data revenue (no revenue is earned on free data) divided by the sum of OOB, in-bundle, and free data traffic.

270 The period of analysis was mislabelled in the Provisional Report as 'Feb 2018-Jun2018. It should have been July 2018.

Table 31: Replica of Table 16 of the Provisional Report - Effective prices for various bands of data usage on the Vodacom network (indexed) (Jan 2016-Aug 2018)

In-bundle data usage	OOB price index**	In-bundle price index**	Price index for all data***	Observations	Percentage of sample
0	-	-	-	392,332	61.4%
0-1MB	-	-	-	9,120	1.4%
1-5MB	825	1,151	956	10,692	1.7%
5-10MB	781	571	576	7,149	1.1%
10-20MB	762	368	423	11,194	1.8%
20-50MB	783	230	297	28,017	4.4%
50-100MB	779	196	248	27,785	4.3%
100-500MB	781	161	196	83,578	13.1%
500MB-1GB	726	127	145	28,221	4.4%
1-2GB*	694	100	112	22,018	3.4%
2-3GB	674	89	98	8,276	1.3%
3-5GB	652	80	87	6,163	1.0%
5-10GB	637	68	74	3,078	0.5%
10-50GB	549	51	55	1,140	0.2%
Total sample	-	-	-	638,763	

Notes

* Index explained - The index uses in-bundle consumption in the 1-2GB usage band as a base. The index indicates the positions of effective prices of different usage bands (e.g. 10-20MB) across different types of consumption (e.g. OOB) relative to the effective price of the 1-2GB usage band on the in-bundle consumption type which we use to represent the minimum for high-volume usage. In constructing the index, we set the price of the 1-2GB usage band of in-bundle consumption type at 100. We then computed the relative positions of the effective prices of all the other bands across consumption types to the 1-2GB bracket. The index is a pure number and has no unit of measurement.

**OOB and In-bundle price index refers to the indexed effective prices of OOB and In-bundle consumption respectively. For each usage band, the effective rates were computed by dividing the total revenue earned by total traffic. Note that total traffic for both OOB and in-bundle consumption includes free data. Some free data is allocated to in-bundle consumption whereas other free data is allocated to OOB consumption by Vodacom.

301.3 The Commission in the Provisional Report probed the claim by Vodacom and MTN that poorer customers pay better prices than wealthier customers by considering usage trends between these two groups of customers. If this claim by the MNOs was true, traffic among prepaid customers (which we assumed represent the poor) would be expected to grow faster than traffic amongst postpaid customers (which we assumed represent wealthier customers). However, the data analysed by the Commission in the Provisional Report showed the opposite which is consistent with the finding that prepaid consumers face significantly higher

prices than postpaid consumers.²⁷¹

301.4 The Commission found that the price differentials could not be justified on a cost basis, but could likely be explained by the relative inelasticity of poorer consumers to price changes as a result of having fewer off-load opportunities such as fixed broadband at home and Wi-Fi at work *inter alia*, the opportunities wealthier consumers typically have.

302. The Provisional Report therefore concluded that the pricing structure for data in South Africa disadvantages poor consumers and that steps need to be taken to remedy this pattern of pricing.

271 DSMI Provisional Report, 24 April 2019, p. 11, para 6 (Non-confidential)

5.2 SUBMISSIONS IN RESPECT OF PROVISIONAL FINDINGS

303. The Commission received a number of submissions relevant to the findings in the Provisional Report. For the most part, submissions supported the Commission's provisional findings:

303.1 SOS expressed its agreement with the Commission that the pricing structure of data disadvantages poor South African consumers. Its own calculations suggest that data for consumers of small bundles cost upwards of 300% more than the per megabyte price of larger-sized bundles. This disparity, according to SOS, is further exacerbated by the increasing availability of "high-bandwidth, high-quality fibre services for affluent households at even lower unit costs".²⁷² In light of this, SOS supports measures to address this problem.²⁷³ This includes the proposed short-term regulatory intervention to limit differential pricing of data bundles. In fact, SOS advocates for the imposition of full parity pricing per MB, which it says would promote universal access. Furthermore, it suggests a provision of a mandatory 'lifeline' data allocation per user as is the case with water service provision.²⁷⁴

303.2 *amandla.mobi* noted that its research confirms that of the Commission indicating that lower income consumers are exploited much more than wealthier consumers. They would suggest however that wealthier customers are buying even larger bundles (pre- and postpaid) than those used in the Commission's study, which would likely

show an even larger difference in prices on a per MB basis.²⁷⁵ It also voiced agreement that mobile data pricing is very complex and very difficult for consumers to follow at present. It views a lack of transparency as being likely to reduce competition.²⁷⁶ With these points in mind, *amandla.mobi* endorsed the approach and recommendations of the Commission.

303.3 According to RIA, the Commission's finding that the approach to, and structure of, data pricing in the South African market inhibits competition is consistent with its own research. In its Policy Brief no.3 (2017), RIA showed that data pricing innovations made it difficult for consumers to identify which packages are the most practical and cost-effective for them which raises their costs significantly.²⁷⁷ RIA submitted that the Commission's finding that mobile operators overcharge low-income users is confirmed by its research.²⁷⁸ RIA expressed particular concern with Vodacom's personalised pricing, where prices are differentiated by consumers' consumption patterns. This, RIA argues, tends to result in low-income consumers being overcharged.

303.4 The Right2Know Campaign (R2K) welcomes the Commission's findings²⁷⁹ and further emphasized the negative impact the high cost of data has on low-income consumers, rural customers, small business and the unemployed.²⁸⁰ R2K submits that in the transitory period while the government prepares a plan to rollout Wi-Fi, there needs to be immediate decreases in prices of data,

272 SOS submission, 14 June 2019, p.8

273 SOS submission, 14 June 2019, p.8

274 SOS submission, 14 June 2019, p.10

275 *amandla.mobi*'s submission, 14 June 2019, p.2

276 *amandla.mobi*'s submission, 14 June 2019, p.3

277 RIA's submission, 14 June 2019, para. 8.1.1

278 For a 15MB monthly data package Vodacom charges an in-bundle rate of 66c per MB, for a 1GB it charges 15c (4 times less than what a 15MB consumer is paying) and for a 20GB it charges 5c (3 times less than what a 1GB subscriber pays) which is 13 times less than the price paid by 15MB subscriber and 4 times less than the amount paid by a 500MB consumer. Source: RIA's submission, 14 June 2019, para. 8.11

279 R2K's submission, 14 June 2019, p.2

280 R2K's submission, 14 June 2019, p.5-6

especially of smaller bundles.²⁸¹ R2K supports the call for more transparency in the pricing of data and calls for there to be a publicly available record of true data pricing to allow consumers to compare and break down their cost of data so they can make informed decisions.²⁸² This view was echoed by Sutherland who proposed, as a possible way to improve transparency, that operators be required *“to disclose effective rates to customers, perhaps with an app to show how much data was really costing.”*²⁸³

- 303.5 Afrihost agreed with the Commission’s findings that [§<].²⁸⁴
- 303.6 MMA welcomed the findings (and recommendations) regarding the structure of pricing in the telecommunications sector being anti-poor.²⁸⁵
- 303.7 In principle, Telkom supports the recommendation that there should be an industry-wide approach to the zero-rating of content from public benefit organisations and education institutions.²⁸⁶
- 303.8 In its submission, ICASA agrees with the Commission’s analysis of effective prices as well as the impact of data pricing structure on poor consumers.²⁸⁷ It notes the Commission’s concern regarding zero-rating of (public benefit organisations) PBO content being voluntary, inconsistent and in need of regulation.
304. However, a number of criticisms, or alternative views, were also offered by stakeholders. These are summarised below:
- 5.2.1 POOR CUSTOMERS APPARENTLY DO NOT PAY HIGHER PER MB RATES THAN WEALTHY CUSTOMERS**
305. Both Vodacom and MTN have taken exception to the Commission’s accusation that their pricing structure is anti-poor, arguing that poor customers have the same or lower effective prices than rich consumers.²⁸⁸ Vodacom and MTN have argued that the Commission’s characterisation of poor customers as being small-bundle users is oversimplified and incorrect.²⁸⁹ They offer two alternative methods for identifying poor and wealthy customers. MTN measures the income of consumers based on how much they spend on all mobile services (data, voice, and SMS revenues). Therefore, low-income consumers are considered to be those who spend smaller amounts on mobile services (lower ARPU) whereas high-income consumers spend larger amounts on mobile services (higher ARPU).²⁹⁰ Vodacom estimated the income decile for its subscribers based on (a) the base station that they most frequently use during off-peak evening hours over a two month period and (b) Stats SA Census data from 2011 capturing average household incomes per small geographical area.²⁹¹
306. Based on these alternative methods for measuring income, both operators allegedly show that the effective rates facing low-income consumers are now similar or even lower than that faced by higher income consumers, even if they were higher in the past.²⁹²

281 R2K’s submission, 14 June 2019, p.7

282 R2K’s submission, 14 June 2019, p.6

283 Ewan Sutherland’s submission, p.3

284 Afrihost’s submission, 14 June 2019, p. 2 (Confidential)

285 Media Monitoring Africa submission, 14 June 2019, p.2

286 Telkom’s submission, 14 June 2019, p.49, para. 97 (Non-Confidential)

287 ICASA written submission to the Provisional Findings Report of DSML, 26 June 2019, p.6

288 Vodacom’s submission, 14 June 2019, p.44 (Non-Confidential); MTN’s submission, 14 June 2019, p.17 (Non-Confidential)

289 Vodacom’s submission, 14 June 2019, p.42 (Non-Confidential); MTN’s submission, 14 June 2019, p.18, para. 3.7 (Non-Confidential)

290 MTN’s submission, 14 June 2019, Annexure C, p.14 (Non-Confidential)

291 Vodacom’s submission, 14 June 2019, p.42-43 (Non-Confidential)

292 Vodacom’s submission, 14 June 2019, p.40, 45 (Non-Confidential); MTN’s submission, 14 June 2019, Annexure C, p.14, para.32 (Non-Confidential)

307. Vodacom criticised the Commission’s use of headline prices of large and small monthly bundles as proxies for the price of data for poor and wealthy customers respectively, which it says has “exaggerate(d)” price differences.²⁹³ Firstly, based on their classification of various customer segments by income, it is not only [X] consumers who consume [X] bundles.²⁹⁴ Secondly, [X].²⁹⁵ Thirdly, headline rates cannot account for customers’ use of zero-rated data, free data, and personalised offers.²⁹⁶ Comparisons using differences in headline rates will therefore overestimate the difference in the per MB rates faced by poor and wealthier consumers.
308. In response to the Provisional Report’s finding that poorer prepaid consumers pay more for data than wealthier postpaid consumers, Vodacom submits that effective prices have [X] over the past year. Vodacom’s data on effective rates (calculated from total usage divided by total expenditure across all users) allegedly shows that [X].²⁹⁷
309. MTN submits that effective prices have decreased for all ARPU groups. MTN’s data analysis showed, using data between February 2018 to July 2018, that the effective price for data fell for all ARPU groups.²⁹⁸ It also showed that effective rates by ARPU group have declined over a longer period (April 2018 - April 2019).²⁹⁹ MTN’s data analysis also apparently showed that subscribers who spend less on all mobile services enjoy the lowest effective rates whereas those who spend the most are subject to the highest effective rates.³⁰⁰ This is allegedly due to the fact that high proportions of free data is used by subscribers who spend small amounts on all mobile services and on data services.³⁰¹
310. Vodacom also showed that, in terms of data usage between [X] and [X], usage per active prepaid subscriber grew at an average rate of [X] per year compared with [X] for postpaid subscribers.³⁰² MTN similarly rejected the notion that prepaid volume growth has been “sluggish”. It argued that the growth of prepaid and postpaid volumes have instead been similar over the last three years.³⁰³
311. In terms of OOB spend, Vodacom addressed the Commission’s claim that OOB spend is higher for low-income users. It showed based on its classification of low, medium, and high-income customers that out-of-bundle spend as a percentage of total revenue fell significantly across all income segments but especially in the low-income segment.³⁰⁴
312. The economic experts acting for MTN, RBB, has also levelled a number of technical critiques against the Commission’s analysis of various bundle sizes. Firstly, it has criticised the Commission’s finding that shorter-validity bundles are more expensive on a per GB basis than longer-validity bundles arguing that it is based on an ‘apples-and-oranges’ comparison and as such is misleading. Secondly, RBB has criticised the Commission for oversights in cleaning the 1 million customer sample that MTN provided to the Commission which it used to estimate effective rates per volume of data consumed. On this basis, it argues

293 Vodacom’s submission, 14 June 2019, p.40 (Non-Confidential)

294 Vodacom’s submission, 14 June 2019, p.48-50 (Confidential)

295 Vodacom’s submission, 14 June 2019, p.48-50 (Confidential)

296 Vodacom’s submission, 14 June 2019, p.57 (Non-Confidential)

297 Vodacom’s submission, 14 June 2019, p.60 (Confidential)

298 MTN’s Figure 3 and Figure 4 show the average effective data price, on a volume-weighted basis, by total spend percentile, where each data point represents 1% of MTN’s prepaid subscribers who use between 5MB and 4GB of data per month and have an ARPU of less than R600. Source: MTN’s submission, 14 June 2019, p.25-26, p.17 (Non-Confidential) Appendix C, p. 13 (Non-Confidential)

299 MTN’s submission, 14 June 2019, Annexure C, p. 21, para. 45 (Non-Confidential)

300 MTN’s submission, 14 June 2019, Appendix C, p.15, para.33 (Non-Confidential)

301 MTN’s submission, 14 June 2019, Annexure C, p.16, para. 36 (Non-Confidential)

302 Vodacom’s submission, 14 June 2019, p.61 (Confidential)

303 MTN’s submission, 14 June 2019, Annexure C, p.22, para. 49 (Non-Confidential)

304 Vodacom’s submission, 14 June 2019, p.58 (Non-Confidential)

that the Commission likely overstated the extent of the true differences in the effective rates of different data volumes.³⁰⁵

313. Mr Walter Brown, who made a submission in his personal capacity, also criticised the Commission for not identifying “the poor” nor their specific ICT needs.³⁰⁶

5.2.2 PRICE DIFFERENTIALS ARE APPARENTLY A NORMAL FEATURE OF WELL-FUNCTIONING MOBILE MARKETS

314. Vodacom has argued that material differences between headline prices on a per MB basis between large and smaller bundles are a universal feature of mobile markets and that differences in South Africa are in fact relatively small.³⁰⁷ Cell C noted that even in competitive and developed markets such as the UK, there is a “non-linear gradient for price versus consumption”.³⁰⁸ It showed this by [X].³⁰⁹ Telkom noted that tiered pricing is used across the entire spectrum of the mobile market. In fact, as far as Telkom is aware, flat pricing is not a feature of any significant mobile telecommunication markets.³¹⁰

315. The operators have attempted to justify any differences in prices, be they between bundles of different sizes, in-bundle and out-of-bundle prices, and prepaid and postpaid bundles.

- 315.1 In terms of bundle sizes, Vodacom and Telkom have argued that differences in low-volume and high-

volume customers may be explained by differences in the costs of serving them.³¹¹ They argue that mobile networks have high fixed costs implying higher unit costs for smaller bundles relative to larger bundles.³¹² Besides cost justifications, Vodacom and Cell C justify different per MB prices on the basis that they reflect declining marginal utility for each megabyte of data consumed.³¹³

- 315.2 In terms of in-bundle and out-of-bundle price differentials, Vodacom submitted that the different in-bundle pricing is justifiable.³¹⁴ It referred to Mr Richard Feasey’s³¹⁵ argument that out-of-bundle rates which have unlimited validity ought to be higher than in-bundle rates in order to incentivise consumers to purchase bundles.³¹⁶

- 315.3 In terms of price differentials between prepaid and postpaid bundles, Telkom has submitted that prepaid customers need to be priced at a [X] per MB rate in order to [X].³¹⁷

316. On a related note, MTN argued that it is typically more expensive for MTN to provide data services to its customers in poor areas due to distribution costs (of SIM cards and recharge packages) and lower spectral efficiency (i.e. the spectrum required to provide customers in an area with a given volume of data over a given period of time).³¹⁸

305 MTN’s submission, 14 June 2019, Annexure C, p.28-36 (Non-Confidential)

306 Mr Walter Brown’s submission, 13 June 2019, p.2

307 Vodacom’s submission, 14 June 2019, p.62-64 (Non-Confidential)

308 Cell C’s submission, 14 June 2019, p.11-12 (Non-Confidential)

309 Cell C’s submission, 14 June 2019, p.12 (Confidential)

310 Telkom’s submission, 14 June 2019, p.22-23 (Non-Confidential)

311 Vodacom’s submission, 14 June 2019, p.66-69 (Non-Confidential); Telkom’s submission, 14 June 2019, p.19-22 (Non-Confidential)

312 Vodacom’s submission, 14 June 2019, p.68 (Non-Confidential); Telkom’s submission, 14 June 2019, p.19-21 (Non-Confidential)

313 Vodacom’s submission, 14 June 2019, p.66-68 (Non-Confidential); Cell C’s submission, 14 June 2019, p.11 (Non-Confidential)

314 Vodacom’s submission, 14 June 2019 (Non-Confidential), p.184

315 Mr Feasey is a former employee of Vodafone and Frontier Economics and currently a panel member at the Competition and Markets Authority in the UK and Commission of the National Infrastructure Commission for Wales

316 Vodacom’s submission, 14 June 2019, p.184 (Non-Confidential)

317 Telkom’s submission, 14 June 2019, p.21, para.42-43 (Confidential)

318 MTN’s submission, 14 June 2019, p.23-24 (Non-Confidential)

317. Vodacom, supported by Mr Feasey, accused the Commission of overlooking the fact that price discrimination can enhance welfare by increasing the consumption among consumers with lower willingness to pay. This it says *“is borne out by the evidence which indicates that lower income customers in fact typically pay comparable (or lower) effective rates to those paid by higher income consumers.”*³¹⁹ Vodacom went on to suggest that the fact that price discrimination is common in most markets is testament to the positive effect it has on welfare.³²⁰

318. Furthermore, Telkom has argued that it is incorrect to present only the relative differences in the per MB rates of large and small bundles per operator in order to measure the degree to which operators’ pricing structures are anti-poor. The Commission should, according to Telkom, compare the price levels of small bundles of each operator in addition to the price differences between small and large bundles in its assessment of how operators stack up in terms of their value offering to the poor.³²¹

5.2.3. THE COMMISSION’S RECOMMENDATIONS ON THE LEVEL AND STRUCTURE OF PRICING ARE APPARENTLY UNJUSTIFIED AND MISGUIDED

319. This section summarises the views from stakeholders (mostly operators) who interpret the Commission’s recommendations on the level and structure of pricing as being unjustified and misguided in so far as these recommendations relate to the reduction of headline tariffs to effective prices and price discrimination.

320. MTN argues that the Commission cannot justify changing the retail price structure as its findings on anti-poor pricing are incorrect.³²² Furthermore, it has not done a cost-benefit analysis (taking into account potential unintended consequences) that would support the implementation of price regulation, and in the form it has proposed.³²³ In addition, the dynamism in the industry will make price regulation untenable.³²⁴ MTN views the recommendations on retail price structure as inappropriate and unnecessary as MTN has implemented many initiatives to lower retail prices which have occurred without any regulatory interventions such as new lower OOB rates for customers using less than 5MB of OOB data on certain price plans (as of 1 December 2017).³²⁵ Vodacom considers the recommendation to reduce headline tariffs to actual effective prices as likely to result in fewer promotional offers and less personalised pricing going forward (as these could increase the difference between headline and effective prices) and that this could have negative outcomes for low income consumers in the longer term.³²⁶

321. Vodacom, MTN and Telkom have all argued that price regulations intended to reduce the gap between the per MB rates of large and small bundles and in-bundle and OOB rates will likely reduce competition, innovation, and choice which may harm the poor.³²⁷

321.1 Vodacom, MTN, and Telkom believe that the regulations are likely to adversely affect poor consumers. Telkom argued that besides being impractical, they may potentially create adverse incentives for operators, which would result in poor consumers being worse off.³²⁸ Vodacom referred to Mr Richard Feasey’s report

319 Vodacom’s submission, 14 June 2019, p.66 (Non-Confidential)

320 Vodacom’s submission, 14 June 2019, p.66 (Non-Confidential)

321 Telkom’s submission, 14 June 2019, p.16-19 (Non-Confidential)

322 MTN’s submission, 14 June 2019, p.50, para. 5.13 (Non-Confidential)

323 MTN’s submission, 14 June 2019, p.51, para.5.17 (Non-Confidential)

324 MTN’s submission, 14 June 2019, p.51-52, para.5.19 (Non-Confidential)

325 MTN’s submission, 14 June 2019, p.51, para. 5.18 (Non-Confidential)

326 Vodacom’s submission, 14 June 2019, p. 182 (Non-Confidential)

327 Vodacom’s submission, 14 June 2019, p.180-181; 183-184 (Non-Confidential); MTN’s submission, 14 June 2019, p.52, para. 5.19.3 (Non-Confidential); Telkom’s submission, 14 June 2019, p.46-47, par. 91 (Non-Confidential)

328 Telkom’s submission, 14 June 2019, p.46, para. 90 (Non-Confidential)

in which he argued that the regulation proposed by the Commission will have the effect of forcing low-income consumers to spend more and high-income consumers to spend less.³²⁹ MTN noted that the recommendations will hinder innovation, the number of competitive offers available, and the ability of subscribers who spend the least on mobile services to enjoy lower effective rates.³³⁰

- 321.2 Vodacom, Cell C, and Telkom have all argued that the use of a 1GB bundle as a reference tariff will have unintended and undesirable consequences. Vodacom has suggested that mobile operators may circumvent the legislation by introducing new bundle sizes just above the 1GB level.³³¹ Cell C argued that the proposal of setting a 25% price differential may lead to a number of unintended consequences. In this regard, Cell C argued that since the [X].³³² Telkom has noted that operators may respond to the regulations by raising the effective price of 1GB bundles instead of lowering the price of small bundles.³³³ In addition, Vodacom noted that the reduction in the variance between in-bundle and out-of-bundle rates are likely to put upward pressure on in-bundle rates.³³⁴
322. Mr Richard Feasey, on behalf of Vodacom, further argued that the Commission's proposed 25% difference in the per MB rate of bundles below 1GB and the 1GB bundle as well as in-bundle and out-of-bundle data is arbitrary and unjustified.³³⁵ MTN also criticised the recommendation of a 25% difference across different size bundles
- and between in-bundle and out-of-bundle data as not being substantiated and thus arbitrary.³³⁶ ICASA submitted that it is not certain as to how the Commission arrived at the proposed 25% maximum difference between the price of bundles smaller than 1GB and the average effective 1GB bundle price as well as the same maximum difference for OOB data rates relative to in-bundle rates. ICASA states it would be appropriate to conduct a cost analysis study to determine the suitable figure here (if any).³³⁷
323. Regarding the recommendation that MNOs voluntarily commit to changing the structure of retail pricing by reducing the differential between the price of smaller and larger volume bundles, MWEB suggests that if licensees were to sell prepaid and postpaid bundles of 500MB or less for the same price, the playing field between consumers will be levelled to some extent without disrupting the operating models of licensees.³³⁸
324. The operators submit that the Commission's concerns over out-of-bundle prices relative to in-bundle prices have already been addressed. Vodacom noted that its out-of-bundle charges have already been reduced significantly.³³⁹ Cell C also argued that the Commission's concerns about out-of-bundle rates have been effectively addressed by the ICASA's End User Regulations and no further intervention is required.³⁴⁰
325. Telkom has noted that the Commission's recommendations on price convergence of different sized bundles is unclear. In particular, it requires clarity on aspects such as which validity period is applicable, whether the reference price is the standalone

329 Vodacom's submission, 14 June 2019, p. 183 (Non-Confidential)
 330 MTN's submission, 14 June 2019, p.52, para. 5.19.3 (Non-Confidential)
 331 Vodacom's submission, 14 June 2019, p. 183-184 (Non-Confidential)
 332 Cell C's submission, 14 June 2019, p. 13 (Confidential)
 333 Telkom's submission, 14 June 2019, p.46, para. 90.1 (Non-Confidential)
 334 Vodacom's submission, 14 June 2019, p. 184 (Non-Confidential)
 335 Vodacom's submission, 14 June 2019, p.183 (Non-Confidential)
 336 MTN's submission, 14 June 2019, p.51, para. 5.17 (Non-Confidential)
 337 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p.2.
 338 MWEB's submission, 14 June 2019, p.1
 339 Vodacom's submission, 14 June 2019, p.185 (Non-Confidential)
 340 Cell C's submission, 14 June 2019, p.14, para. 4.4.12 (Non-Confidential)

price of a 1GB bundle or the effective price of 1GB of data, and how promotions will be accounted for.³⁴¹

5.2.4. THE CONSIDERATION OF DATA SERVICES AS A BASIC RIGHT AND HANDSET PRICING AS A BARRIER TO ACCESS AND AFFORDABLE DATA SERVICES FOR LOW-INCOME CONSUMERS

326. In response to the Commission's Provisional Report, many stakeholders (to the exclusion of operators) have shared their views on data services in South Africa within the broader context of accessible and affordable communication and internet services, which some stakeholders submit should be considered as a basic right to citizens. The submissions reflect a need for greater affordability and therefore access for the poorest citizens of South Africa. These submissions are presented below.

327. In SOS's submission following the Provisional Report, concern was raised about the insufficient attention paid to the lack of availability of end-user access devices at affordable prices.³⁴² Notwithstanding the recent introduction of sub-R500 smartphones by the two major operators, handset pricing still limits access to data services by poor consumers, which SOS state is a finding supported also by RIA research showing that the cost of smart devices are the primary reason for not being 'online'.³⁴³ The Commission ought to, according to SOS, factor in the total cost of access to data services, which includes both the cost of a device and data.³⁴⁴ SOS also referred to StatsSA research showing

that 35% of South African households do not have access to internet in any form (including internet cafes) and that just 10% of households have internet at home.³⁴⁵ Therefore, interventions ought not only to be focused on driving down data costs but also on ways to promote universal access.³⁴⁶ Furthermore, SOS advocate for "the provision of a mandatory 'lifeline' data allocation per user, along the lines of lifeline tariffing as applies to the provision of water services".³⁴⁷

328. Right2Know state that "in the age of the industrial revolution rights like access to communication and internet become basic rights."³⁴⁸ Right2Know emphasise the importance of data for poorer households as they submit that "the lower income homes that have no access in general to data, these homes who according to our research done through the link center these homes have to choose between bread and data."³⁴⁹ Affordable data prices, according to Right2Know, are important as they allow households to conduct everyday tasks which may seem basic but are essential and "directly translatable into cash and time savings, as well as safety benefits for low income households".³⁵⁰ As part of their recommendations, Right2Know view that "communications must be universal. Everyone has the right to communications that are available and affordable" and furthermore, they recommend that "everyone in the lower income block should get a free basic amount of airtime and data in the same way that we have free basic water and electricity".³⁵¹

341 Telkom's submission, 14 June 2019, p.47-48 (Non-Confidential)

342 SOS submission, 14 June 2019, p.6-7

343 SOS submission, 14 June 2019, p. 6-7. See Gillwald, A. Mothobi, O., and Rademan, B., July 2018, "The State of ICT in South Africa", *Research ICT Africa*, p.7, Available at: https://researchictafrica.net/wp/wp-content/uploads/2018/10/after-access-south-africa-state-of-ict-2017-south-africa-report_04.pdf [Accessed 27 June 2019]

344 SOS submission, 14 June 2019, p.7

345 SOS submission, 14 June 2019, p.7. See *General Household Survey, 2018*, in StatsSA, p.57-58, Available at: <http://www.statssa.gov.za/publications/P0318/P03182018.pdf> [Accessed 27 June 2019]

346 SOS submission, 14 June 2019, p.7

347 SOS submission, 14 June 2019. p.10

348 Right2Know submission, p. 3

349 Right2Know submission, p. 3

350 Right2Know submission, p. 6

351 Right2Know submission, p. 6

329. MMA indicated that in addition to the Commission's provisional findings and recommendations, there is still more that needs to be done in order to ensure meaningful and universal access for all. In this regard, MMA's submissions are summarised below.

329.1 Firstly, MMA submits that the findings and recommendations of the Inquiry should have expressly considered issues of public interest such as (i) the creation of pricing structures and subsidies that facilitate affordable access, with a particular focus on marginalised groups, including women, persons living in rural or peri-urban areas, persons with disabilities and children; (ii) a clear inclusive and cohesive regulatory framework; and (iii) dealing with issues such as cost of devices, digital literacy, and availability of content in local languages.³⁵²

329.2 Secondly, MMA emphasised the importance of realising the internet as a basic human right. In this regard, MMA cites a number of authorities and projects (including UNESCO, UN HRC, UN SDG, ACHPR) that recognise the internet as a human right and a tool used to empower previously disadvantaged persons. MMA therefore considers it *"a grave and deeply-concerning indictment"*³⁵³ that a commodity that should be considered a human right is found to be priced in a manner that is seen to *"exploit consumers with a lack of market alternatives, and penalise poorer consumers."*³⁵⁴ MMA blames this outcome not only on operators, but also on ICASA and the DTSP. As such, MMA calls for the Commission to make a further recommendation calling for parliament to require the operators, ICASA and the DTSP *"to explain under*

*oath why this position was allowed to have arisen and persisted, who ought to have been responsible for this, and why there was a failure to exercise oversight in order to prevent this."*³⁵⁵

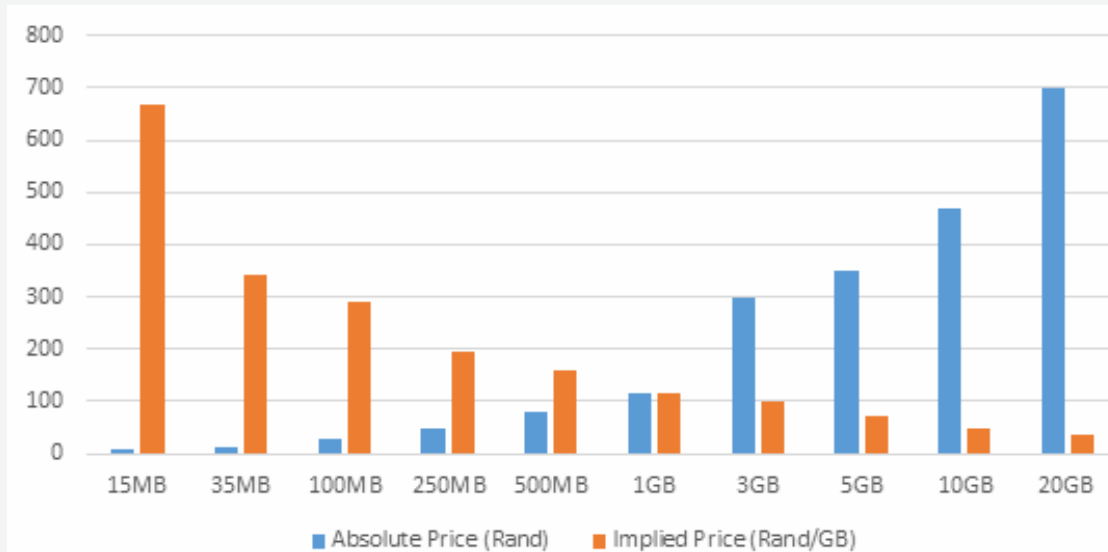
330. Sutherland criticised the Commission for not addressing the 'central problem' that large numbers of people in South Africa have no data access on their phones or no phone at all. He averred that the dynamics of the market cannot be analysed without considering how reducing prices might encourage more people to use mobile internet access.³⁵⁶ Sutherland submits that *"access to data requires a smartphone, which for many people is unaffordable and likely to remain so for the foreseeable future."*³⁵⁷

5.3 COMMISSION'S RESPONSE ON EFFECTIVE PRICE CALCULATIONS

331. What is clear from the Provisional Report is that headline prices and the pricing structures inherent in the headline prices charged by the operators is anti-poor on a like-for-like basis. Smaller bundles are priced lower in absolute terms but higher on a 'per GB' basis. In other words, the effective price for a smaller bundle is higher. This is shown in the following figure below which shows a selection of Vodacom's prepaid data bundles (all 30-day validity). While the absolute price for the 20GB bundle is 70 times higher than the absolute price for a 15MB bundle, the 'per GB' price for the 15MB bundle is 19 times higher than that of the 20GB bundle. This is not in dispute as it can be read simply from the tariffs posted by the operators. As stated in section 3.3 above, while Vodacom recently dropped the prices of two of its sub-1GB data bundles namely the 500MB (from R100 to R79) and the 250MB (from R63 to R49), it did not drop

352 MMA's submission, 14 June 2019, p.4
353 MMA's submission, 14 June 2019, p.8
354 MMA's submission, 14 June 2019, p.8
355 MMA's submission, 14 June 2019, p.8
356 Ewan Sutherland's submission, p. 16
357 Ewan Sutherland's submission, p. 1

Figure 45: Example of Vodacom's price discrimination by bundle size (2019)



Source: Own construction based on data collected from Vodacom's website (November 2019)

the prices of its smallest data bundles, i.e. 100MB and smaller, remain unchanged. This coupled with the significant reduction of the larger bundles, namely the 5GB (from R405 to R349), 10GB (from 605 to R469) and 20GB (from R1010 to R699) means that the price gap on a Rand per GB basis between smaller and larger bundles has widened.

332. What the large operators argue instead is that the poor have been able to reduce the effective prices they pay primarily through the use of short-validity bundles along with promotional or free data. It is on this basis that the large operators argue that the poor get effective prices at the levels of wealthier subscribers. As is discussed in the next subsection, even if the poor are able to reduce their effective price to that of the wealthier subscribers, this is not a like-for-like comparison as the poor would only have achieved this through accepting an inferior service. It is an inferior service insofar as it is for short periods only and the poor are not able to secure a consistent data service at a low price.
333. However, there still remains the factual contention as to whether the poor do indeed

reach the lower prices charged to wealthier subscribers even when using the short-validity bundles and occasional promotional free data. This requires a consideration of effective prices for subscribers, and a delineation of subscribers by income levels.

334. Given that information on the incomes of subscribers is not available to operators, it is difficult to definitively identify poor and wealthier subscribers. As a result, an estimation of which subscribers fall into which income categories is required, which inevitably will be imperfect. The Commission has broadly considered the following three approaches to finding a proxy for the income levels of mobile data subscribers. Each of these measures is imperfect but collectively they may provide some understanding of the effective data prices facing different income groups in South Africa.
- 334.1 **The Commission's approach.** The approach taken by the Commission in its Provisional Report was to use monthly in-bundle data volumes (excluding free data) as a proxy for income. In other words, smaller volume use was associated with lower income

subscribers on the basis that in general the poor are likely to consume less than the wealthy. Obviously, not all wealthy customers will buy large amounts of data (e.g. many may rely on fixed-line data services at work or at home). It is also possible that some lower income customers will buy greater volumes of data (e.g. if they need to rely on data for their livelihoods) but, given that they are limited by their income constraints, this is likely to be less common than richer consumers consuming smaller volumes of data.

334.2 **MTN's approach.** MTN's analysis of its pricing structure mainly focussed on using the Average Revenue per User ("ARPU") measure as a proxy for income levels.³⁵⁸ This is not dissimilar to the Commission's approach insofar as volume may have some relationship to spend. However, as will be discussed further below, there is a risk of circularity or endogeneity inherent in the use of ARPUs to measure incomes (i.e. lower effective rates would reduce customers' ARPUs) which has the potential to lead to misleading results. Furthermore, much like the Commission's volume measure, it is likely that there are some high-income customers among low-ARPU customers and similarly some low-income customers that have higher ARPUs.

334.3 **Vodacom's approach.** Vodacom estimated the incomes of its customers using a geographic analysis in which it linked its subscribers to income levels based on their night-time location with the help of the 2011 Census. Using this income information, Vodacom estimated average income levels for the areas served by each of its sites and then created site "deciles". This is a complex and imperfect exercise

insofar as not everyone within the range of a particular site will have the same income. Based on an examination of the median total ARPU of each income decile relative to average income per decile, it is clear to the Commission that income deciles - especially those representing lower income customers - are likely to be 'blended' in that they include customers who have incomes that are vastly different to the average income level of that decile.

335. Below, we consider each approach in more detail in order to better understand the effective rates of the poor relative to the wealthy. This is used to assess whether, on an effective price comparison, the poor are able to reach the lower rates charged to the wealthy even when making use of short-validity bundles. The findings on the Commission volume-based measure remains unchanged from the Provisional Report. The finding on the MTN analysis on ARPU-based measures is that the claimed results of lower effective prices for the poor are not only counterintuitive but also entirely determined by the approach to weighting, cleaning and large data promotions at the time. Correcting for these results in the data shows that poor consumers have higher effective prices than the wealthy. The finding on Vodacom's analysis using location-based measures is that the dataset has material issues with it and hence the results are unreliable. However, even on the best case, the Vodacom data indicates that the poor have historically paid higher effective prices and that gap has been eliminated at best and only after [§<].

336. However, at the outset it is important to note that all of these exercises examine prepaid subscriber data only. As such, none of them are able to answer how lower income prepaid subscribers compare to the most wealthy postpaid subscribers. Given

358 RBB also conducted a geographic analysis although at a more aggregated level than Vodacom and focussed only on two cities (i.e. [§<] and [§<]). See MTN's Submission, 14 June 2019, Annexure C, p.23-24 (Confidential). However, given that MTN did not send it the simple average effective rates per suburb (its analysis was based on volume-weighted average effective rates) on the basis that [§<], the Commission has not dwelled on the results of this analysis. Source: MTN's submission, 25 October 2019, p. 10-11

the evidence presented further below on the partitioning of postpaid and prepaid subscribers and the lower postpaid rates specifically, it is inevitable that the poorer prepaid consumers will fare less favourably against postpaid than against wealthier prepaid subscribers.

5.3.1. THE COMMISSION'S APPROACH

337. As discussed in Section 5.1, the Commission showed in its Provisional Report that using volume purchased as a proxy for income level, low-volume customers face higher in-bundle and out-of-bundle effective rates than high-volume customers. Based on this, as well as the inherent differences in headline prices, the Commission concluded that the pricing structure for data in South Africa disadvantages poor consumers relative to wealthier ones.

338. As with all proxies, volume may not be a perfect discriminator between poor and wealthy customers. For example, not all wealthy customers may buy large amounts of data (e.g. many may rely on fixed-line data services at work or at home or many may not purchase data services, instead relying on other mobile services such as voice and SMS) or some household members may also not do so (e.g. children). Although it is possible that some lower income customers will buy greater volumes of data (e.g. if they need to rely on data for their livelihoods), given that they face income constraints, it is fair to say that there are likely to be fewer of them compared to the number of wealthy customers who purchase small volumes of data.

339. Vodacom did not contest the Commission's calculations of effective rates by volumes purchased. In fact, it even confirmed that if one compares effective prices within the same validity period, bundles of a smaller

size are typically associated with higher prices than bundles of a larger size, thereby revealing "a similar pattern to that observed in the CC's analysis".³⁵⁹

340. MTN took issue with certain of the Commission's assumptions in its data cleaning process, suggesting that the Commission's data cleaning operations lead to effective price differences that were larger than the true differences in effective rates across different bands of volume purchases. However, using MTN's approach to data cleaning does not generate fundamentally different results.³⁶⁰ In fact, when the appropriate month (July 2018) is used, MTN's approach results in price differentials that are comparable to those using the Commission's approach to data cleaning. The reasons why July 2018 is the most appropriate month to examine using MTN's data is explained below when we discuss MTN's analysis in more detail. Below, we present the results for July 2018 using MTN's data cleaning operations.³⁶¹

341. Table 32 shows that using MTN's data cleaning operations result in price differentials that are almost identical to the price differentials when the Commission's data cleaning operations were used (See Table 24). For example, the effective price facing customers who consume between 5 and 10MB of in-bundle data per month is more than 20 times the price of customers consuming between 1 and 2GB of in-bundle data per month on a per megabyte basis.

342. Although both Vodacom and MTN argued that low-volume consumers cannot be equated with the poor and put forward alternative ways in which to identify them, [X]. This is intuitive and unsurprising given the income constraints faced by the poor in South Africa.

359 Vodacom's submission, 14 June 2019, p. 52 (Non-Confidential)

360 The main difference between the Commission and MTN's data cleaning process was that MTN removed the coincidence of positive in-bundle and positive out-of-bundle data spend and zero in-bundle and zero out-of-bundle data usage respectively. Source: MTN's submission, 14 June 2019, Annexure C, p. 33 (Non-Confidential)

361 The in-bundle data usage bands of MTN did not completely match up to the bands used by the Commission. In MTN's case, the lower end of the band was included whereas the top end of the band was excluded. In the Commission's case, the upper end of the band is included whereas the bottom was excluded. For the sake of comparison, the Commission adjusted MTN's bands so that they match the bands used by the Commission (the upper end of the band is included whereas the bottom is excluded).

Table 32: Effective prices for various bands of data usage on the MTN Network (July 2018) ³⁶²

In-bundle data usage	OOB price index**	In-bundle price index**	Price index for data without free data***	Price index for data with free data****	Observations	Percentage of sample
0	-	-	-	-	183 095	23.9%
0-1MB	-	-	-	-	3 126	0.4%
1-5MB	2 972	5 829	3 932	2 187	4 675	0.6%
5-10MB	2 714	2 156	2 042	1 163	3 746	0.5%
10-20MB	2 742	817	1 021	583	11 611	1.5%
20-50MB	2 425	652	840	513	20 150	2.6%
50-100MB	2 277	460	607	399	23 059	3.0%
100-500MB	2 421	285	381	273	71 839	9.4%
500MB-1GB	2 619	136	191	152	36 762	4.8%
1-2GB*	2 544	100	135	112	39 021	5.1%
2-3GB	2 398	108	134	114	13 706	1.8%
3-5GB	2 270	122	142	125	8 195	1.1%
5-10GB	2 297	107	121	109	3 188	0.4%
10-50GB	2 109	79	85	81	559	0.1%
Unclassified					343 600	44.8%
Total sample	-	-	-	-	766 332	

Notes

Index explained – The index uses in-bundle consumption in the 1-2GB usage band as a base. The index indicates the positions of effective prices of different usage bands (e.g. 10-20MB) across different types of consumption (e.g. OOB) relative to the effective price of the 1-2GB usage band on the in-bundle consumption type which we use to represent the minimum for high-volume usage. In constructing the index, we set the price of the 1-2GB usage band of in-bundle consumption at 100. This usage band excludes usage of exactly 2GB which falls into the next bracket. We then computed the relative positions of the effective prices of all the other bands across consumption types to the 1-2GB bracket. The index is a pure number and has no unit of measurement.

***OOB and In-bundle price index refers to the indexed effective prices of OOB and In-bundle rates respectively. For each usage band, the effective rates were computed by dividing the total revenue earned by total traffic.*

****Price index for data without free data refers to the indexed effective price of data without free data. Data without free data is the sum of OOB bundle and in-bundle data used by a subscriber. Therefore, the effective rate for this category divides the sum of OOB and in-bundle revenue by the sum of OOB and in-bundle traffic.*

*****Price index for data with free data refers to the indexed effective price of data with free data. The effective price of data with free data, is the sum of OOB and in-bundle data revenue (no revenue is earned on free data) divided by the sum of OOB, in-bundle, and free data traffic.*

343. The Commission’s initial analysis of effective price differentials has merit and suggests that the poor are being disadvantaged by the pricing of both Vodacom and MTN even when they make use of short-validity bundles and promotional offers. Neither operator (successfully) refuted the Commission’s analysis of effective price differentials across volume purchases. Furthermore, both the approaches of Vodacom and MTN support

the Commission’s assumption that [36].

5.3.2. MTN’S APPROACH

344. Although MTN has attempted to show with its customer data sample and its own estimation of customer wealth that the poor face lower effective rates than the rich, its calculations are problematic for multiple reasons that are provided below. Once these issues in the calculations are corrected, the

362 The period of analysis was mislabelled in the Provisional Report as ‘Feb 2018-Jun2018. It should have been July 2018.

Figure 46: MTN's paid in-bundle data usage (excluding free data) per subscriber by ARPU percentile, July 2018



Source: MTN's sample data, resent on 14 October 2019 (Confidential)

Notes: (i) Simple averages were used; (ii) MTN's data cleaning operations were employed

data shows that the poor mostly face similar or worse effective prices compared to the wealthy based on MTN's own classification of the income of its subscribers. Once free data is removed from the equation, the picture looks even worse, with more of the poor facing much worse effective data prices than the wealthy.

345. In order to identify and classify consumers by income-level and therefore understand which consumers are 'poor', MTN has used average revenue per user ("ARPU") as a proxy for income level, which it argues is better than using the volumes purchased as a proxy for income levels. MTN has used ARPUs to classify its consumers into different ARPU percentiles. ARPU contains revenue from all mobile services including data, voice and SMS and thus represents the consumer's average spend on mobile telecommunications services. In many respects this is not dissimilar to the volume approach insofar as volume of data use will have some relationship to total spend, with some of the same potential imperfections.

346. In fact, [345] the figure above which presents the average paid in-bundle data usage per subscriber for each ARPU percentile in July 2018 for MTN.

347. All that MTN's approach potentially identifies differently to the Commission are subscribers that spend large amounts on other mobile services but make use of limited data volumes on the same SIM card. However, it too is still not a perfect measure of income as wealthy consumers may have multiple devices with multiple SIMs and therefore lower revenue on one may be incorrectly identified as low-income.

348. More concerning is that there is likely to be a degree of circularity or endogeneity inherent in the use of ARPU to measure incomes as an analysis of effective prices per ARPU percentile³⁶³ as well as the split in volumes of in-bundle, out-of-bundle, and free data used by MTN's customers³⁶⁴ suggests. The fact that, according to MTN, effective rates are lower for lower ARPUs and out-of-bundle data comprise a smaller proportion of total data use for those

363 MTN's submission 14 June 2019, Appendix C, p.15 Figure 2 (Confidential)

364 MTN's submission 14 June 2019, Appendix C, p.17 Figure 4 (Confidential)

prepaid customers with lower ARPU may in fact be because lower effective rates and smaller proportions of out-of-bundle data usage contribute to subscribers having lower ARPUs. Therefore, there may be other explanations for why lower ARPU percentiles could have lower effective rates and lower proportions of spend on out-of-bundle data, other than low-income customers taking advantage of promotional deals and lower validity bundles (as MTN submits).

349. A particular case in point is the fact that MTN ran a large and successful promotion in the months of the analytical period in which they offered 1GB of data free to those signing onto their network. As discussed in more detail below, this resulted in the sale of [redacted]³⁶⁵ of SIMs, and customers also signing up for multiple SIMs to exploit the promotion.³⁶⁶ The result is that there would be large parts of the subscriber base with high data use but low ARPUs as they signed up for the promotion, and these would all be classified as low-income in the approach adopted by MTN. However, this would clearly distort the analysis significantly, a point to which we return later in this sub-section.
350. Finally, we note that the results provided by the RBB analysis of the MTN data are in any event counterintuitive as they suggest a positive relationship between income levels and effective prices which not even the operators have argued for. This should have been a signal that something was wrong in the data analysis which is evident from the Commission's own assessment.

5.3.2.1. MTN'S METHOD FOR CALCULATING EFFECTIVE RATES LEADS TO MISLEADING RESULTS

351. The aforementioned suggests that MTN's approach to proxy income levels is not

without imperfections either. Beyond this, the Commission has broadly three criticisms of the approach taken by MTN to analyse effective rates by ARPU percentile. Firstly, examining effective rates over time may not be appropriate with the sample provided by MTN. Secondly, MTN's use of a weighted rather than simple averages in its estimation of effective rates creates a bias which leads to misleading results. Thirdly, the data cleaning operations MTN used have the effect of reducing the prices of low-ARPU customers and increasing the prices of higher ARPU customers. Addressing these three problems has a notable effect on the results.

Time-based analyses are inappropriate

352. MTN provided the Commission with a sample of 1 million MSISDN-tariff type combinations³⁶⁷ containing monthly data over the February - July 2018 period.³⁶⁸ It used this dataset to examine trends in effective rates and work out average effective rates over the period. The Commission's view is that doing such analyses on the basis of this sample may be inappropriate.
- 352.1 Firstly, the MSISDN numbers (upon which the sample is based) may not necessarily represent the same subscribers over the full February to July 2018 period. This is as [redacted].³⁶⁹
- 352.2 Secondly, the 1 million large sample of MSISDN-tariff type combinations MTN sent the Commission was drawn from a population of MSISDNs that were active in July 2018. Therefore, if an MSISDN number was not active in July 2018, then it would have been excluded from the sample. This would explain why the sample is the largest in July and largely declines as it moves backwards

365 MTN's submission 14 June 2019, p.17-18 (Confidential)

366 MTN's submission 14 June 2019, p.17 Appendix C (Non-Confidential)

367 An MSISDN number identifies a mobile phone number and the tariff type indicates the tariff plan for a given month. Customers can use more than one tariff type per month and so the same MSISDN number may be associated with different tariff types. Since MSISDN numbers may be passed between individuals on the MTN network, MSISDN numbers do not necessarily identify individual customers. See p.11 of MTN's submission, 14 June 2019, Annexure C (Non-Confidential)

368 MTN's submission, 14 June 2019, Annexure C, Figures 2,3, 7 (Confidential)

369 MTN's Submission, 1 March 2019, para. 17.3.1, p.12

Table 33: MTN sample size (MSISDN-tariff combinations) used to generate Figure 7 of MTN's Appendix C, February-July 2018

	February	March	April	May	June	July
MSISDN-tariff combinations	223 773	225 181	244 446	285 886	277 061	286 325

Source: MTN's sample data, resent on 14 October 2019

to February (See the table above). The implication of this is that the samples in each month may not be comparable to one another. Whereas the sample in July includes MSISDN numbers which terminated in July 2018, the samples in previous months do not include numbers which terminated in those months. As a result, using MTN's data to examine trends over the February to July 2018 period or taking an average over the 6-month period may be inappropriate and may result in sample selection biases.

353. It is because of these two factors that the Commission conducted its analysis in Table 15 of the Provisional Report with respect to July 2018 only, although the Table was mistakenly labelled as being applicable to February 2018 to June 2018. The Commission presented data for July 2018 only, since this is when the sample

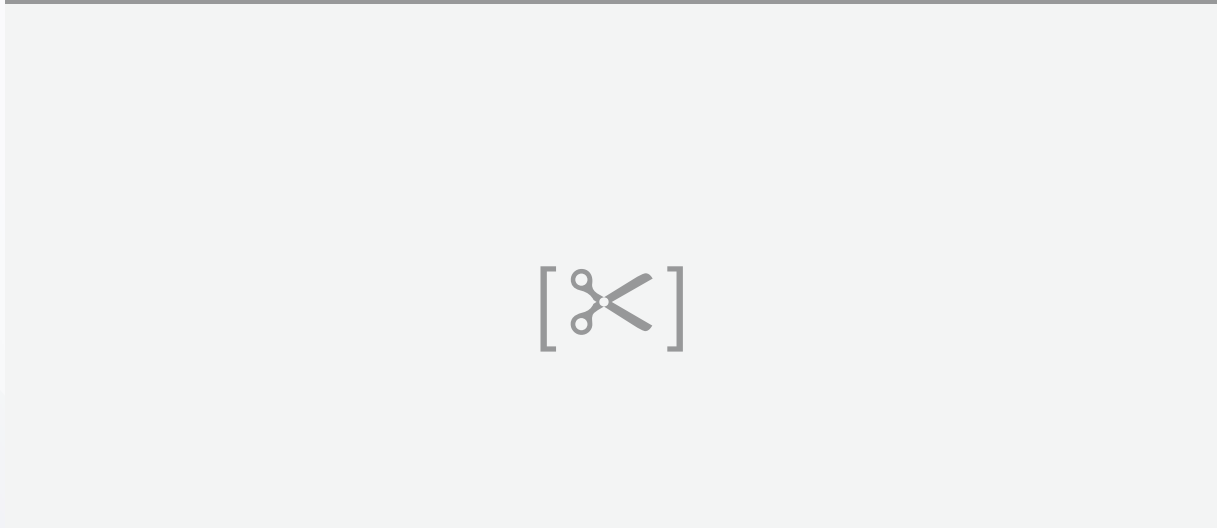
was the largest and likely also the most representative of the entire MTN customer base at the time.

The use of volume-weighted average effective rates leads to misleading results

354. In estimating effective rates for different ARPU percentiles, RBB has made use of volume-weighted effective rates rather than simple average effective rates. This appears to have distorted the relationship between effective rates and ARPUs.

355. The use of ARPU percentiles is intended to separate customers into different *income* groups in order to understand the relationship between income levels and effective prices. However, using a volume-weighted average within each income group such that greater weight is placed on higher-volume customers risks compromising the analysis. MTN itself has objected to the analysis of the Commission

Figure 47: Weighted average effective rates (left) versus simple average effective rates (right) by ARPU percentile, July 2018



Source: MTN's sample data, resent on 14 October 2019 (Confidential)

Notes: (i) Simple averages were used; (ii) MTN's data cleaning operations were employed

Figure 48: MTN's restrictions including total data >5MB data restriction (left) versus MTN's restrictions except that total data is only restricted to ≥1MB data (right), July 2018



Source: MTN's sample data, resent on 14 October 2019 (Confidential)

Notes: i) Simple average effective rates are used ii) All of MTN's other restrictions are the same

where consumers are segmented by volume as it holds that data volumes are *not* a good indicator of income levels. Allowing the effective price for each percentile to be driven by the volumes of consumers in that percentile (by using a weighted average) effectively compromises the analysis as higher-volume MTN customers within each percentile - who tend to have lower effective rates - are given greater emphasis than low-volume MTN customers who tend to have higher effective rates. When calculating the effective price using a simple average, one is estimating the effective rate of the *average consumer* in that percentile. Using a simple average ensures that each subscriber in a percentile receives an equal weighting.

356. A comparison of volume-weighted versus simple averages of effective rates for July 2018 is presented in the Figure 47. The impact of using weighted averages is clearly substantial.
357. Once simple effective rates are used in the analysis, the relationship between effective rates and ARPU is less clear cut than what is presented by RBB. Simple effective rates are generally higher than weighted effective

rates across the ARPU distribution. More importantly, with simple averages, many lower ARPU percentiles exhibit similar effective rates to higher ARPU percentiles.

RBB's data cleaning operations unduly influences the depiction of effective rates across ARPU percentiles

358. RBB's cleaning operations have had the effect of reducing the effective prices of low-ARPU customers and raising the prices of higher ARPU customers in the sample, compared to what should have been the case.
359. For instance, RBB removed MSISDNs that showed usage of less than 5MB of data per month, making up approximately [X]³⁷⁰ of the prepaid subscriber base.³⁷¹ The figure above shows the impact of using the 5MB total data restriction of RBB versus the 1MB total data restriction of the Commission. The effect is notable.
360. The figure shows that the removal of MSISDNs with a monthly total data usage of less than 5MB (rather than 1MB) has the effect of lowering simple effective rates

370 MTN's submission, 14 June 2019, Annexure C, p.13 (Confidential)

371 MTN's submission, 14 June 2019, Annexure C, p.13 (Non-Confidential)

Figure 49: Simple effective rates including total restriction of <4GB (left) versus MTN's restrictions except that total data is only restricted to <50GB data (right), July 2018



Source: MTN's sample data, resent on 14 October 2019 (Confidential)

Notes: i) Simple average effective rates are used ii) All of MTN's other restrictions are the same

across the distribution but particularly for lower ARPU percentiles. RBB explained that it did this merely on the basis that MTN does not consider these subscribers to be data users but provided no further reasons as to why this is relevant for the analysis.

361. RBB also removed MSISDNs who use more than 4GB of data per month.³⁷² The figure above shows the impact of using the 4GB total data restriction of RBB versus the 50GB total data restriction of the Commission.

362. The figure shows that the removal of MSISDNs with a monthly total data usage of more than 4GB (rather than 50 GB) has the effect of raising simple effective rates across the distribution but particularly of higher ARPU percentiles, creating the impression that the highest ARPU percentiles have the highest effective rates. RBB's only explanation was that [X]³⁷³ of the remaining customers exhibited total monthly data volumes of less than 4GB.³⁷⁴ The less conservative selection of a 50GB limit by the Commission is more likely to exclude only genuine outliers.

363. MTN also removed MSISDNs if there was both positive in-bundle and out-of-bundle data spend and zero in-bundle usage and out-of-bundle data usage (of which there were none) respectively.³⁷⁵ Interestingly, MTN did not similarly remove customers if there was positive in-bundle and out-of-bundle data usage and zero in-bundle and out-of-bundle spend respectively.

364. These discrepancies are potentially due to timing issues with regards to how data usage and spend is captured into MTN's database. For example, a data bundle could have been purchased at the end of one month but usage of that data bundle may have only started in the next month. It is more difficult to explain why there is a discrepancy between out-of-bundle spend and usage. It could potentially be related to airtime being purchased in one month and data (which would be classified as out-of-bundle data) only being used in subsequent months yet being classified in the month in which the airtime was purchased. The Commission has removed data points

372 MTN's submission, 14 June 2019, Annexure C, p.13 (Non-Confidential)

373 MTN's submission, 14 June 2019, Annexure C, p.13 (Confidential)

374 MTN's submission, 14 June 2019, Annexure C, p.13 (Non-Confidential)

375 MTN's submission, 14 June 2019, Annexure C, p.13 (Non-Confidential)

Figure 50: Simple effective rates by ARPU percentile - MTN's restrictions (left) versus the Commission's restrictions (right), July 2018



Source: MTN's sample data, resent on 14 October 2019 (Confidential)

Notes: Simple average effective rates are used

where there are such discrepancies in out-of-bundle data usage and spend but not in-bundle data usage and spend.³⁷⁶

365. In order to get a sense of the cumulative impact of using MTN's restrictions versus its own, the Commission has provided a comparison of the simple average effective rates once all of MTN's restrictions are replaced with its own. The Commission's original data cleaning operations involved the removal of (1) missing data in July 2018, (2) negative free data usage, (3) negative out-of-bundle spend, (4) in-bundle data usage of 1MB or less, and (5) data usage of more than 50GB of total data. In addition to its original restrictions, the Commission has also, following its review of MTN's submissions and calculations on this, removed data points in which there is positive out-of-bundle data usage but zero out-of-bundle spend because, as discussed above, this is difficult to explain. MTN's method of data cleaning results in a sample of 286 325 MSISDN-tariff combinations whereas the Commission's method of data cleaning results in a sample of 314 822 MSISDN-tariff combinations. Whilst one

can debate whether the 1MB usage lower-bound and 50GB usage upper-bound for cleaning the dataset is more appropriate or not, it is clear that a) the assumptions of MTN have had a significant impact on the results of the analysis which at a minimum prompts some caution in how the results are interpreted and b) the Commission's approach does at least include more of the original dataset and therefore may have some more explanatory power.

366. The figures above show that MTN's data cleaning operations biases the results to show a greater portion of lower ARPU percentiles face higher effective rates than higher ARPU percentiles compared to when the Commission's data cleaning operations are used. The Commission's cleaning exercise indicates that lower ARPU percentiles, which MTN uses as a proxy for its lower income customers, mostly face similar or even worse effective rates than higher ARPU percentiles using simple averages.

376 Removing discrepancies between in-bundle data and spend consistently would result in a large reduction in the sample from 314 822 to 287 035 MSISDN-tariff combinations.

5.3.2.2 LARGE ONCE-OFF PROMOTIONAL DATA OFFER ALSO UNDULY SKEWS THE RESULT

367. MTN showed in its submission following the release of the Commission’s Provisional Report that free data makes up a larger proportion of total data volumes for prepaid consumers in the lower ARPU percentiles compared to those in higher ARPU percentiles.³⁷⁷ In fact, MTN stated that it had provided a large amount of free data to **new** prepaid customers, and this along with other promotions would explain why low-ARPU customers are able to lower the effective prices they pay for data.³⁷⁸ MTN made specific mention of its “1GB Data Giveback Promotion”, in which 1GB of free data was offered with each activated MTN SIM card.³⁷⁹
368. It turns out that this particular data promotion was hugely successful; between March 2018 and April 2019, when the promotion was in force, MTN activated between approximately [3<] and [3<] SIM cards with

1GB of free data each month. MTN also indicated that “[3<]”.³⁸⁰

369. It therefore seems apparent that such large once-off promotional activities may in fact skew the results derived by RBB which focused on this period even more as this was once-off at the time of signing up and not an ongoing provision of free data. In addition, as subscribers took advantage through multiple SIMs, these promotions would have typically been classified as low-ARPU and hence low-income by the analytical approach. As such, they are most likely to skew the results by reducing the effective rate of those who are classified as low-income.
370. Consequently, the Commission has examined the simple average effective rates when free data has been excluded (See the figure below). This confirms the bias in the results as a function of this promotion are substantial. Once such data is excluded, then the results clearly demonstrate that lower ARPU consumers, who MTN classify

Figure 51: Simple effective rates by ARPU percentile when free data has been excluded



Source: MTN’s sample data, resent on 14 October 2019 (Confidential)

Notes: Simple average effective rates are used

377 MTN’s submission, 14 June 2019, Annexure C, p.17 (Non-Confidential)
 378 MTN Submission, 14 June 2019, Annexure C, p.17 (Non-Confidential)
 379 MTN Submission, 14 June 2019, Annexure C, p.17-18 (Non-Confidential)
 380 MTN’s submission, 25 October 2019, p. 3, para. 5.3

Figure 52: ARPU analysis with RBB data cleaning and no free data



Source: MTN's sample data, resent on 14 October 2019 (Confidential)

as poorer consumers, pay materially higher effective rates per MB than wealthier, higher ARPU consumers. This is consistent with the results derived by the Commission in its analysis.

371. In fact, just removing the free data bias introduced by this promotion and not even correcting for the data cleaning issues in the RBB analysis shows that poorer consumers pay higher effective rates than wealthier consumers on the MTN ARPU proxy for income. This is reflected in the figure above which retains the RBB data cleaning methodology but simply removes free data and discloses simple averages not weighted averages.
372. The picture painted by MTN showing that the poor face a lower effective rate than the wealthy is essentially incorrect once their data analysis is corrected for obvious points of bias. In fact, MTN's low-ARPU customers face effective prices that are mostly worse than those facing its high-ARPU customers on aggregate, and when one excludes free data, effective prices are in many cases much higher for poorer consumers (assuming ARPU is a good proxy for income).

5.3.3 VODACOM'S APPROACH

373. Vodacom used a sophisticated method to estimate the income levels of its subscribers using big data. It did this by linking the cell site each subscriber most commonly used after hours over a 2-month period to Census data regarding income by location. In particular, each small area layer ("SAL")³⁸¹, was assigned to Vodacom's nearest cell site based on the assumption that this site was most likely to be the one that served households in that SAL. The Census household income data, which was captured within income bands, was then 'aggregated' at the site level in order to calculate an estimated average income level for the specific cell site. This figure was then used as a proxy for the incomes of Vodacom's subscribers associated with each cell phone site. From this information, Vodacom created site deciles, which it did by ranking cell sites based on wealth from poorest to richest and then dividing these sites into ten equally sized groups. Decile 0 therefore represents the poorest (lowest income areas) 10% of Vodacom's cell sites and Decile 9 the richest. These deciles were then classified into low-income (deciles

381 A SAL is a small geographic area defined by Stats SA for the Census.

0-3), middle-income (deciles 4-7), and high-income (deciles 8-9) segments.³⁸²

374. Vodacom's approach to identifying the poor [X] that the poor consume [X] paid in-bundle data on average than the wealthy. The bar chart below depicts the paid in-bundle usage per prepaid subscriber per month for each of the three broad income segments defined by Vodacom. It shows that [X] customers followed by [X] customers use [X] paid in-bundle data per subscriber than [X] subscribers. This contradicts Vodacom's assertion that the assumption that low data users are poor users is "undermined by Vodacom's analysis of the demographics and usage of its customer base".³⁸³

5.3.3.1 CONCERNS OVER THE RELIABILITY OF VODACOM'S DATA

375. The Commission is concerned about the reliability of Vodacom's data. Besides the usual inaccuracies that inevitably result from estimating the income of customers, especially using 8 year old census data, the Commission has uncovered a number of oddities in the data, and continues to uncover more, that Vodacom has struggled

to explain. Below, we discuss how Vodacom's approach to estimating the income of its customer base inevitably leads to income deciles containing some customers with very different income profiles to the average income of the decile. Then, we highlight the gaps and oddities in the data that suggests that the data underlying Vodacom's analysis is unreliable.

Vodacom's approach to aggregating the data also leads to 'blending'

376. As with the Commission and MTN's approach to identifying customers of different income groups, Vodacom's approach to aggregating the data also involves some noise. This has been contributed to by the fact that (i) Vodacom has used the midpoint of the income bands contained in the Census, (ii) a single household income level has been assigned to all households associated with a particular cell phone site, and (iii) the average incomes in the Census include many people who would not count among Vodacom's mobile prepaid data customers. This has ultimately led to some customers being incorrectly classified into particular

Figure 53: In-bundle (paid) data per subscriber living in low-income, middle income, and high-income areas, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

382 Vodacom's submission, 14 June 2019, p.42-43 (Non-Confidential)

383 Vodacom's submission, 14 June 2019, p.40 (Non-Confidential)

income deciles, as will be illustrated by comparing ARPUs to household incomes assigned to customers in each decile.

377. The Census survey presented respondents with the option of twelve income bands from which to choose, and these were relatively large³⁸⁴. As an illustration of the size of these bands, both sites that Vodacom classified as serving decile 7 subscribers - and so middle-income - and sites that Vodacom classified as serving decile 8 subscribers - and so high-income - would have been classified as one income band on the Census (Choice 9: R307 201- R614 400)³⁸⁵. We understand that, in estimating an average income for an area related to a specific cell site, individual households were assigned the midpoint of their selected income band. These midpoints were used to estimate average household incomes for each site, from which site deciles by income would have been calculated.³⁸⁶ This means that some precision would naturally have been lost.
378. Secondly, a single household income level/range is calculated for each site. Ideally when one is working out deciles, one would rank all customers by their income level and then divide them into equally sized groups. In this case, Vodacom has aggregated all the household incomes per cell site into a single level/range. Therefore, there may well be households affiliated with each cell site with far lower and/or far higher income levels than the aggregate level. Although Vodacom's subscribers assigned to each cell site will be classified as belonging to a specific decile, it is possible that many of its subscribers are in fact associated with different income deciles. What Vodacom refers to as low-income consumers are really customers in low-income areas and therefore may include a far greater range of income levels than what is represented.

379. Thirdly, the average incomes in the Census include many people who would not count among Vodacom's mobile prepaid data customers. These include (a) customers without internet access on their phone, (b) mobile data customers of other operators, and (c) the postpaid data customers of Vodacom. Using average incomes from the Census will therefore distort the estimated income distribution attributed to Vodacom's prepaid data customers.

- 379.1 Many people do not have internet access on their phone and so would not be among Vodacom's data customers. In fact, internet usage figures nationally show that 56.9% (39.6% in rural areas) of households in the country use mobile phones to access the internet.³⁸⁷ There would therefore be many people, and probably especially those in poorer areas of the country, who would bring the average income of these areas down but yet in fact are not data users. Thus, the average income ascribed to a particular cell site area might be far lower than the average income of actual mobile subscribers in the same area.
- 379.2 It is also arguable that Vodacom itself may tend to attract wealthier customers than other mobile operators given its relative pricing. To the extent that this is the case, this would lead to the average incomes ascribed to sites underestimating the income levels of Vodacom subscribers in that area.
- 379.3 Vodacom's analysis, like the Commission's analysis in the Provisional Report, considers only prepaid customers.³⁸⁸ Prepaid customers are typically considered, on average, to have lower incomes than postpaid consumers. Thus, the average income ascribed to a particular cell site area

384 Respondents were not required to additionally provide the exact amount of household income they earn.

385 StatsSA, Census 2011 Metadata, available at: http://www.statssa.gov.za/census/census_2011/census_products/Census_2011_Metadata.pdf [Accessed 21 November 2019]

386 Vodacom's submission, 25 October 2019, p. 8

387 Statistics South Africa (21 June 2018) General Household Survey 2017. [Online]. Available at: <http://www.statssa.gov.za/publications/P0318/P03182017.pdf>. [Accessed on 17 March 2018].

388 Vodacom has included postpaid subscribers to the extent they have purchased bundles over and above their contract.

Table 34: ARPU relative to household income per person, 2019

	Min ARPU - April 2019	Ave ARPU - April 2019	Max ARPU - April 2019	Min monthly income per person - 2019	Ave monthly income per person - 2019	Max monthly income per person - 2019	Max ARPU / Max Income	Ave ARPU / Ave Income
0	[R]	[R]	[R]	0	843	993	[R]	[R]
1	[R]	[R]	[R]	993	1 143	1 284	[R]	[R]
2	[R]	[R]	[R]	1 284	1 425	1 674	[R]	[R]
3	[R]	[R]	[R]	1 674	1 922	2 222	[R]	[R]
4	[R]	[R]	[R]	2 222	2 522	3 133	[R]	[R]
5	[R]	[R]	[R]	3 133	3 744	4 854	[R]	[R]
6	[R]	[R]	[R]	4 854	5 963	7 662	[R]	[R]
7	[R]	[R]	[R]	7 662	9 361	11 935	[R]	[R]
8	[R]	[R]	[R]	11 935	14 510	18 697	[R]	[R]
9	[R]	[R]	[R]	18 697	22 883	-	[R]	[R]

Sources: a) Vodacom's submission 14 June 2019, Figure 28 (Non-Confidential); b) Vodacom's submission, 25 October 2019, p.2; c) StatsSA Historical inflation rates, available at: <http://www.statssa.gov.za/publications/P0141/CPIHistory.pdf> [Accessed 22 October 2019]

Notes: i) The average, minimum and maximum total ARPUs of a particular site decile are the average, lowest, and highest ARPU of any Vodacom customer in a particular decile respectively, where ARPU contains revenue from all cell services including voice, SMS, and data; ii) The average income per person is the sum of all households per income band, multiplied by the mid-point of the band divided by the number of households, iii) The minimum and maximum household income per person is the cell site with the lowest and highest estimated income level respectively; iv) The average annual inflation rate over the January-August 2019 period was used to inflate the household income per person figures as provided in Figure 28 of Vodacom's submission, v) Note that the income data collected in the Census is gross income prior to deductions. Since South Africa has a progressive income tax system, the take-home salary of the upper and middle echelons of South Africa are likely to be significantly (and progressively) lower than their gross income levels.

might be higher than the average income of mobile prepaid subscribers in the same area.

380. The table above illustrates that Vodacom's method of estimating customers' incomes, like the methods of both the Commission and MTN, has inevitably led to some customers being misclassified. The table shows the average, minimum and maximum total ARPU in each income decile in April 2019 relative to the minimum, average and maximum monthly income of that income decile, inflated to 2019 numbers using average annual inflation rates.

381. The table shows that for the five lowest deciles, the [R] in April 2019 substantially

exceeds the maximum monthly household income per person by between [R] and [R]. Furthermore, the [R] in the next two deciles are greater than [R], which seems unlikely. This shows that there is likely a significant degree of overlap in the consumers captured by the lower income deciles.³⁸⁹ Put differently, it appears that the lower income deciles capture a range of consumers of different income levels. Decile 0 does not appear to capture only the poorest consumers given that there are consumers spending more on cell phone usage than their maximum monthly income.

382. Sophisticated as it is, there is also some imprecision inherent in Vodacom's method of categorising customers' income levels

389 This does not mean that the same does not apply to high-income deciles too but only that this table illustrates that there is likely to be a mix of income levels in the lower income deciles.

such that the various income deciles are blended together. There were clearly wealthier people in low-income areas and there were also likely poorer people in high-income areas. The Commission thus has concerns with the accuracy of the income segments defined by Vodacom in relation to the geographic areas (low-, middle-, and high-income areas) in which Vodacom's customers can be found after hours.

There are some gaps and oddities in Vodacom's data

383. There are gaps and oddities with Vodacom's data that suggest that it is not completely reliable. The oddities in particular, which the Commission discovered after having analysed an aggregated version of Vodacom's customer data and which Vodacom has struggled to explain, suggest that the data provided by Vodacom may be unreliable.
384. Vodacom's analysis is essentially an exercise in analysing big data, which inevitably involves some degree of coding to extract data, but then should require a review and data cleaning exercise to determine if there are errors in the coding and how it extracts the data, given the nature of the dataset. Unfortunately, the Commission does not have a view over exactly how Vodacom cleaned its customer-level dataset to get it into the form in which it was presented to the Commission. As shown above with the MTN customer sample, one's choice of data cleaning operations can have a significant impact on the results.
385. What is clear is that there are certainly problems with Vodacom's data. Following the receipt of the aggregated dataset from Vodacom on 23 August 2019 and the Commission's analysis thereof, the Commission sent a number of follow-up information requests in which it clarified results that looked odd. Following these questions, Vodacom has had to regenerate the data twice for the purpose of correcting

data inconsistencies (16 September 2019 and very recently on 19 November 2019).

386. Given the very late date of receipt of the newest rebuild of the aggregated customer dataset, the Commission has not been able to fully incorporate the changes to the data in the paragraphs that follow. We have presented our analysis based on the previous aggregated customer dataset received but have indicated whether or not these oddities are explained in the rebuild of the dataset as well as Vodacom's accompanying explanation thereof. Broadly speaking, the rebuild of the dataset does not give us any more assurance about the reliability of Vodacom's big data exercise. Instead, it shows that the dataset is complex and not necessarily well understood by Vodacom itself. There are also a number of outstanding queries.
387. Besides these, in dealing with questions on certain outcomes when assessing the data, Vodacom has in some cases merely excluded data which presents problems, thereby leading to gaps in the data used by Vodacom, as is described below.
- 387.1 Vodacom was unable to classify approximately [redacted] of its subscriber base into income deciles. The primary reason provided by Vodacom relates to there being [redacted].³⁹⁰ The other reasons cited by Vodacom are "[redacted]".³⁹¹ There may also be a timing issue in that there may not have been households in the coverage area in 2011 when the Census was conducted. This would help explain why subscribers were in the coverage area of these cell phone sites after hours in 2019 whereas there were no households associated with those sites in the 2011 Census.
- 387.2 Vodacom's [redacted] products were incorrectly classified when pulling out the raw data and as such Vodacom recommended excluding these products. In particular, while sales and revenue for each [redacted] bundle size was reported separately,

390 Vodacom's submission, 16 September 2019, para. 21.1

391 Vodacom's submission, 25 October 2019, p.4, para. 8

the associated usage was contained in a single bundle code. As a result, it is not possible to match revenue and usage for each [redacted] bundle size.³⁹²

387.3 Vodacom also recommended excluding [redacted] for certain analyses (i.e. Figures 6, 35, 36, 43, 44 in Vodacom's submission³⁹³ after the release of the Provisional Report) as usage was duplicated in that month.³⁹⁴ Therefore, only eleven months in 2018 were captured for these analyses.

387.4 There are minor differences between samples that have been sourced from the same underlying datasets using the same selection criteria. For example, the number of subscribers in January 2018 was [redacted] in one raw dataset and [redacted] in another. Vodacom was unable to explain these differences indicating that it generally tolerates minor differences (in the example, there was a [redacted] difference between the two).³⁹⁵

387.5 As will be discussed further below, the recent rebuild of the dataset excludes

further observations. In particular, the mismatch between bundle usage and allocation, which resulted in an overstatement of usage on some bundle sizes, lead to Vodacom excluding [redacted] million prepaid sales ([redacted] of the sample) from the database sent to the Commission on 19 November 2019.³⁹⁶

388. Although these gaps in the dataset appear to be relatively small individually, together they may impact on the results of Vodacom in a way that is not well understood by the Commission.

389. There are also a number of oddities regarding utilisation which Vodacom has acknowledged but has not as yet been able to adequately explain. These are of major concern to the Commission and suggest that the data underlying Vodacom's analysis of effective prices by income segment, especially from [redacted], is unreliable. The figure below shows the overall utilisation rates on a monthly basis of Vodacom's customers who purchased bundles between January 2016 and April 2019. It shows that prior to

Figure 54: Overall utilisation rates of (paid) bundles, January 2016 - April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

392 Vodacom's submission, 16 September 2019, p.9, para. 45.2

393 The content of these figures is confidential.

394 Vodacom's submission, 16 September 2019, p.12, para. 60.1

395 Vodacom's submission, 16 September 2019, p.2, para. 4.2

396 Vodacom's submissions, 26 September and 19 November 2019, Vodacom's aggregated dataset

Figure 55: Utilisation rates (Paid) per bundle validity, January 2016 - April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

[redacted], utilisation was relatively consistent at around [redacted] whereas subsequently, there were large fluctuations, ranging between [redacted] and [redacted]. This may suggest that there is an error in Vodacom's data between [redacted] and [redacted].

390. Vodacom's rebuild of the dataset, which was sent to the Commission on 19 November 2019, presents a similar picture of overall utilisation rates of bundles. Utilisation was relatively constant at [redacted] until [redacted], after which it [redacted] (more so than in the Figure shown above) and started fluctuating wildly (with utilisation rates ranging between [redacted] and [redacted]). In Vodacom's response to the Commission on 19 November 2019, Vodacom indicated that the fluctuations seen at the end of the period "[redacted]".³⁹⁷ The Commission remains dissatisfied with this explanation. Although it potentially explains why the change appears to start in [redacted], around when many of these bundles were [redacted], it does not explain the subsequent fluctuations. The Commission's view remains that the data continues to be unreliable especially [redacted] since consumer behaviour is

unlikely to change to such a large extent on a month-to-month basis.

391. The figure above shows the utilisation rates of each bundle validity period (Hourly, Daily, Weekly and Monthly bundles) on a monthly basis between January 2016 and April 2019. The figure shows that from January 2016 to [redacted], bundle utilisation was broadly [redacted] the [redacted] the validity period.³⁹⁸ This changed after [redacted] when a) [redacted] bundles had the highest utilisation rate as opposed to [redacted] bundles, and b) [redacted] bundles had a lower utilisation rate than [redacted] bundles. Furthermore, the problems with Vodacom's data is further highlighted by the fact that one, the utilisation of [redacted] bundles fluctuated wildly post-[redacted] ranging between [redacted] and [redacted], and two, the utilisation rates of [redacted] bundles peaked at over 100% in [redacted].
392. In response to a question about this from the Commission, Vodacom indicated that the reason for the change was due to [redacted] bundles (predominantly the [redacted] bundle³⁹⁹) and [redacted] ([redacted] bundles for [redacted], [redacted] bundles for [redacted], and [redacted] bundles for [redacted] bundles⁴⁰⁰)

397 Vodacom's submission, 19 November 2019, p.8

398 There were two exceptions. There was a [redacted] utilisation rate on [redacted] bundles relative to [redacted] bundles between [redacted]. [redacted] bundles had a [redacted] or [redacted] utilisation rate than [redacted] bundles between [redacted] and [redacted].

399 The others were [redacted] bundles.

400 In its response on 5 November 2019, p.3, para.9, Vodacom did not refer to the [redacted] bundle as a reason for the change in utilisation rates, unlike previous submissions (e.g. on 25 October 2019, p.2)

having been introduced.⁴⁰¹ According to Vodacom, customers who switched to these bundles were more “motivated” to use up data in those bundles.⁴⁰² It indicated that most customers switched to these bundles from [X] bundles.⁴⁰³ The explanation given by Vodacom did not address why the utilisation of [X] bundles [X] over the [X] period, nor did it explain why a) the utilisation of the [X] bundle was over 100% in October 2018, and b) why the utilisation of [X] bundles fluctuated wildly after [X]

393. In Vodacom’s recent rebuild of the dataset on 19 November 2019, the picture remains largely unchanged except for the fact that the utilisation of all bundles (including [X] bundles) are below 100%, as one would expect, and the utilisation of [X] bundles is [X] than that of [X] bundles for four months over the [X] to [X] period. The large fluctuations in the utilisation of [X] bundles remains as does the fact that the utilisation of [X] bundles, contrary to Vodacom’s explanation, [X] post-[X].

394. After putting the question to Vodacom

regarding why the utilisation rate of [X] bundles had been [X] over the [X] period, it presented an explanation on 19 November 2019 that ran completely contrary to its previous explanation. In particular it noted that “[X]”⁴⁰⁴ In contrast, and as described more above, it had previously indicated that customers who switched to [X] bundles (including [X] bundles) were more motivated to use those data bundles.⁴⁰⁵ Again, neither Vodacom’s rebuild of the data nor its explanation gives the Commission any more comfort over the reliability of this dataset.

395. The Commission tried to assess using sales data whether the explanation provided by Vodacom about the reason for the change in utilisation by bundle validity after [X] is supported by data. The trends in sales (paid only) of both the bundles to which Vodacom said customers switched ([X] bundles, [X] bundles, [X] bundles) and those from which it switched ([X] bundles) are depicted in the figure below. The bundles which customers switched from are represented by dotted lines.

Figure 56: Sales (paid only) of selected bundles, January 2016 - April 2019



Source: Vodacom’s aggregated dataset sent on 27 September 2019

401 Vodacom’s submission, 25 October 2019, para. 10
 402 Vodacom’s submission, 16 September 2019, para. 51.1
 403 Vodacom’s submission, 5 November 2019, p.3, para. 8
 404 Vodacom’s submission, 19 November 2019, p.2
 405 Vodacom’s submission, 16 September 2019, para. 51.1

396. The figure above offers some support for Vodacom’s explanation about what changed in [X] (although it cannot offer information about why these changes impacted on utilisation). There was a sales increase in all but one of the bundle categories (excluding [X] bundles) that Vodacom indicated customers switched to in [X]. Sales also declined for two of the bundle categories that Vodacom indicated customers switched away from, namely [X] and [X] bundles. On the other hand, the sale of [X] bundles increased in the [X] half of [X] and only declined to previously levels in [X]. Given that Vodacom’s submissions suggested that the [X] bundle was the most obvious bundle that customers switched from⁴⁰⁶, the above evidence contradicts this explanation. Furthermore, none of the trends in the sales of the [X] bundles to which Vodacom referred ([X] bundles) can help explain why there were large fluctuations in the utilisation rates of [X] bundles after [X].

397. The Commission also examined the utilisation rates (paid usage only) of Vodacom for each bundle size and bundle validity in 2018, as depicted in the table below.

398. Based on this table, [X] bundles of less than [X] have a utilisation rate of just [X], which is surprising. By way of comparison, [X] bundles of between [X] and [X] have a utilisation rate of [X] and [X] bundles of under [X] have a utilisation of [X]. Vodacom explained this as being related to the [X] (which resulted in subscribers getting free data) over this period which caused the utilisation of the [X] bundles to drop below the previous norm. Vodacom did not explain why low utilisation rates were [X]. Regardless, it seems unlikely that such a [X] amount of data that could be spent over an entire month would have such a [X] utilisation rate despite the prevalence of free data (which when included lowers the utilisation rate of [X] under [X] bundles). Another oddity is that [X] bundles of [X] had a utilisation rate of over 100% in [X] ([X]), which Vodacom attributed to a timing issue. In particular, for bundles purchased in the last few days of the month, the volume allocated will be captured in that month whereas the associated usage will spill over into the following month.⁴⁰⁷ However, based on this explanation, utilisation in 2018 as a whole should either be balanced out over the year or there should be an underutilisation for the period as a whole (since volumes are allocated before usage).

Table 35: Utilisation (paid only) by bundle size and validity, 2018

	1. Hourly	2. Daily	3. Weekly	5. Monthly
> 5000			[X]	[X]
>3000 < 5000		[X]	[X]	[X]
> 2000 < 3000		[X]		[X]
>1000 < 2000		[X]	[X]	[X]
> 600 < 1000	[X]	[X]	[X]	[X]
> 350 < 600	[X]	[X]	[X]	[X]
> 200 < 350	[X]	[X]	[X]	[X]
> 100 < 200	[X]	[X]	[X]	[X]
> 50 < 100	[X]	[X]	[X]	[X]
< 50	[X]	[X]	[X]	[X]

Source: Vodacom’s aggregated dataset sent on 27 September 2019

406 Vodacom’s submissions, 25 October 2019 (para. 9.3, 10.3, 10.4), 5 November 2019 (para. 8 and 9)
 407 Vodacom’s submission, 27 September, para. 7.1, p.2

Table 36: Utilization (paid only) of [X] bundles by income segment, July-December 2018

	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
Low income	[X]	[X]	[X]	[X]	[X]	[X]
Middle income	[X]	[X]	[X]	[X]	[X]	[X]
High income	[X]	[X]	[X]	[X]	[X]	[X]

Source: Vodacom's aggregated dataset sent on 27 September 2019

399. The recent rebuild of the dataset that was sent to the Commission on 19 November 2019 - which excludes data traffic where volumes allocated do not correspond to data usage - addresses the issue of over-utilisation on [X] bundles; whereas utilisation on these bundles was previously over 100%, it is now [X]. Despite this, the Commission remains concerned about the method in which problems with utilisation have been dealt with, which has essentially just been to [X]. Furthermore, the fact that this has had to occur as the Commission picks up obvious issues with the data (which it continues to do), does not give the Commission any additional assurance as to the quality of Vodacom's dataset more broadly (especially where problems are not as easy to identify). Instead, these issues highlight that one, Vodacom did not adequately interrogate the reliability of the data before presenting it to the Commission, and two, that there may be many more problems with the dataset which is not well understood by even Vodacom.

400. Vodacom's rebuild does not address the issue of the utilisation rate of [X] bundles [X] being relatively low while those of [X] bundles are very high.⁴⁰⁸ Vodacom indicated that this problem is related to an issue with the average volume allocated for the [X] and [X] bundles in particular, which resulted in allocated volume being well above what it ought to have been in certain months but that it needs more time to investigate this.⁴⁰⁹ This confirms that there are potentially many more problems with Vodacom's data, which are not well

understood and which further casts doubt on its reliability.

401. The Commission examined the utilisation rates (paid only) of [X] bundles in more detail. The utilisation rates of these bundles for selected months are shown for each income segment in the table above.
402. The table shows that the utilisation rates of [X] bundles per income group appear to have been above 100% between [X] ([X] in the case of customers in low-income areas) and [X]. In fact, customers in [X] areas used upwards of [X] their allocated data between [X] and [X]. The recent rebuild of this dataset fixes these issues such that utilisation is now below 100% across all income groups.⁴¹⁰ Despite this, and as discussed in paragraph 396, these corrections do not give the Commission much more comfort about the reliability of the dataset as they highlight that there may be many more problems with the data than what meets the eye.
403. Utilisation rates (paid only) of customers in [X] areas were also above 100% for the [X] bundles. As above, the utilisation rates (paid only) of [X] bundles are shown for each income segment on a monthly basis in Table 37.
404. The table shows that the utilisation rates of [X] bundles for [X] customers is above 100% between [X] and [X]. However, it is below 100% for the other two income groups. Vodacom could not address this issue in the recent rebuild of the dataset it sent the Commission, with utilisation rates

408 Vodacom's submission, 19 November 2019, aggregated dataset

409 Vodacom's submission, 19 November 2019, aggregated dataset, 19 November 2019, p.6

410 Vodacom's submission, 19 November 2019, aggregated dataset

Table 37: Utilization (paid only) of [X] bundles by income segment, August 2018-April 2019

	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19
Low-income	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
Middle-income	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
High-income	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

Source: Vodacom's aggregated dataset sent on 27 September 2019

remaining above 100% for [X] consumers.⁴¹¹ Vodacom indicated in its accompanying letter that [X].⁴¹² Again, the fact that this issue could not be addressed suggests that Vodacom's data is not well understood and potentially contains many more problems.

405. The exercise of examining effective rates requires examining actual payments against actual utilisation of data packages or promotions. The implication is that utilisation forms part of the actual calculation of effective rates. These oddities regarding utilisation not only sheds doubt on the reliability of Vodacom's data, but also its results. Unfortunately, Vodacom has been unable to provide explanations for the peculiarities described above, which would placate the Commission's concerns.
406. Although Vodacom has indicated that the utilisation problems that have been corrected on the rebuilt datasets sent on 16 September 2019 and 19 November 2019 do not impact on effective rates per customer (and so did not correct for this problem in the datasets that examine effective rates at a customer-level)⁴¹³, this seems unlikely as firstly, utilisation directly impacts on effective rates, and secondly, the same explanations that were previously provided to explain the strange trends in utilisation rates (switching to [X] and [X] bundles) after [X] were also offered as an explanation for the changes in effective rates that occurred at a similar time ([X]).

5.3.3.2 RESULTS ON UNRELIABLE DATA INDICATE AT BEST THE POOR HAVE ELIMINATED THE GAP ONLY RECENTLY

407. Despite the misgivings that the Commission has over the Vodacom data, we proceed to examine what the data allegedly displays. Using an analysis comparing the effective rates across three income segment areas, Vodacom argues that the effective rates facing customers living in low-income areas do not tend to be higher than those living in high-income areas.⁴¹⁴
408. Figure 57 shows the calculated average monthly effective rates (in Rand per MB) paid by Vodacom's prepaid customers between January 2016 and April 2019. A volume-weighted average for each month, income decile, poverty line, and sample set was first taken.⁴¹⁵ This was used to obtain the overall volume-weighted effective rate per month per income segment, where income deciles 0-3 represents customers living in low-income areas, 4-7 customers living in middle-income areas, and 8-9 customers living in high-income areas. This suggests that historically the lower income consumers paid higher effective prices but this has been eliminated more recently.
409. The Commission also examined effective rates without free data. The provision of free data is unpredictable and discretionary and can be changed or withdrawn more easily at any point in time. The figure shows that effective rates excluding free data shows more clearly that lower income consumers

411 Vodacom's submission, 19 November 2019, aggregated dataset
 412 Vodacom's submission, 19 November 2019, p. 5
 413 Vodacom's submission, 19 November 2019, p.8, para. 3
 414 Vodacom's submission, 14 June 2019, p.44 (Non-Confidential)
 415 Vodacom's submission, 25 October 2019, p. 4

Figure 57: Volume-weighted average effective rates (including free but excluding unrated data) of Vodacom's prepaid customer base living in low-income, middle-income, and high-income areas, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Notes: Unrated data was excluded because information about it was only available from [X]. Including it in the graph would make data points from [X] onwards incomparable to the earlier period

Figure 58: Volume-weighted average effective rates (excluding both free and unrated data) of Vodacom's prepaid customer base living in low-income, middle-income, and high-income areas, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Notes: Unrated data was excluded because information about it was only available from [X]. Including it in the graph would make data points from [X] onwards incomparable to the earlier period

were subject to higher effective rates relative to higher income subscribers for most of the period shown.

410. However, the effective rates represented above are volume-weighted average effective rates and therefore suffer from the same problem as the MTN analysis, namely they will artificially depress the rates for lower income groups in particular. As such,

the true (or at least more representative) results are likely to be less favourable, even if all the data reliability issues are corrected.

411. Both these figures broadly confirm that the poor faced relatively high effective rates for most of the period and that it was only in the months after [X] that this changed.

411.1 This means that customers who form part of the same grouping (in terms

Figure 59: Median effective rates (including free but excluding unrated data) of Vodacom's prepaid customer base living in low-income, middle-income, and high-income areas, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Notes: Unrated data was excluded because information about it was only available from [redacted]. Including it in the graph would make data points from [redacted] onwards incomparable to the earlier period.

of income decile, poverty line group and sample set) but who consume greater volumes of data - and receive a lower effective price - receive a greater weighting than those who consume lower volumes of data. This has the potential to reduce the average effective price of particularly the lower income deciles to a level that is out-of-line with the effective rates facing the vast majority of customers in those deciles.

- 411.2 Given that there are clearly many customers who are wealthier than the average customer among lower income deciles (See Table 34), using weighted average effective rates has the potential to give undue weight to those customers who have clearly been incorrectly classified. The use of simple effective rates - a method which weights each customer equally - will in our opinion be more correct, as argued above with the MTN data. In addition, it will also have the effect of increasing the gap between the effective rates

of customers in low- and high-income areas and potentially also reverse the change seen in the post-[redacted] period. As we illustrated in Section 5.3.2.1 with MTN's data, the use of simple average effective rates rather than weighted average effective rates had a large impact on the relative effective rates of different ARPU percentiles.

412. The Commission requested that Vodacom provide it with simple average effective rates on 29 October 2019. On 21 November, Vodacom essentially refused to provide this information, arguing that simple average effective rates would also produce an unrepresentative result. Its reason was that simple average effective rates are an unreliable measure. In particular, outliers, while accounting for small amounts of data consumed would skew the results.⁴¹⁶
413. Instead of simple average effective rates, Vodacom presented median effective rates which it argues are a better reflection of the average consumer, as the measure is not as

416 Vodacom's submission, 21 November 2019, p. 2

Figure 60: Median effective rates (excluding both free and unrated data) of Vodacom's prepaid customer base living in low-income, middle-income, and high-income areas, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Notes: Unrated data was excluded because information about it was only available from [X]. Including it in the graph would make data points from [X] onwards incomparable to the earlier period.

affected by outliers.⁴¹⁷ The Commission has presented the median effective rates per income segment in Figure 59 and Figure 60. The first presents median effective rates with free data and the second presents median effective rates without it.

414. The figures present a different picture than what is shown above and what is presented by Vodacom in its submission. Firstly, the median effective rates are about [X] higher than the volume-weighted effective rates on average across the period. Secondly, the median effective rates of customers in low-income areas are significantly higher than those in middle- and high-income areas all the way until [X] (compared to [X]), after which median effective rates facing customers in high- and low-income areas [X].
415. Our view is that the gaps in effective rates facing customers in low- and high-income areas are likely to be even larger when using simple average effective rates, which is potentially why Vodacom has refused to provide the Commission with these figures.

As with the weighted average effective rates, the exclusion of free data results in a larger gap in the effective rates between Vodacom's customers in low- and high-income areas

416. Returning to the issue of data anomalies, another driver that was likely to have created the unduly favourable results post-[X] in Figure 57 and Figure 58 is the bias in the utilisation anomalies as effective rates are affected by utilisation.
- 416.1 Given the Commission's concerns over oddities with utilisation rates from [X] onwards, the Commission also has doubts as to whether the aforementioned change in the ranking of weighted average effective rates is a reliable representation of what happened over the [X] period where the effective rates apparently converged for lower income and higher income consumers.
- 416.2 For example, [X] bundles had the highest utilisation rate after [X] and

417 The median effective rates were estimated by taking an average of the median individual effective rate for customers in each of the three sample sets used to generate the results, and is thus an average of different median results. Source: Vodacom's submission, 25 October 2019, p. 4

Figure 61: Out-of-bundle spend as a percentage of total spend, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

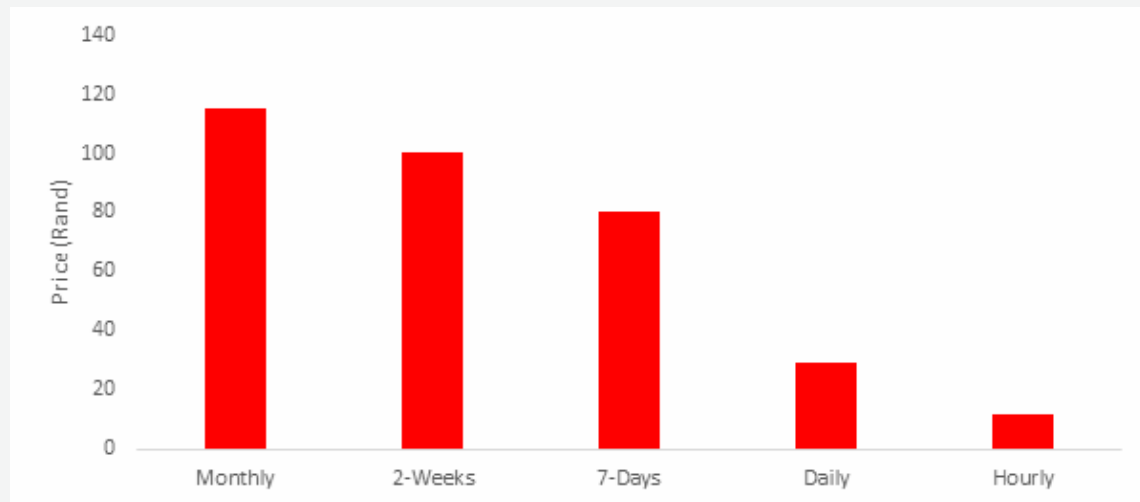
- even reached over 100% in [§]. Since customers in low-income areas followed by those in middle-income areas increased their purchases of [§] bundles more than customers in high-income areas between [§] and [§], the high and unlikely utilisation rates of [§] bundles may have underestimated the effective prices facing customers in low- and middle-income areas and therefore inflated the gap between the prices of customers in poor and wealthy areas.
417. In its submission to the Provisional Report, Vodacom presented data showing that out-of-bundle spend as a percentage of total revenue fell significantly between [§] and [§]. It presented this evidence in response to the Commission's claim in the Provisional Report that OOB spend is higher for low-income users than it is for high-income consumers. Even based on Vodacom's own graph (Figure 43 in the Vodacom submission), out-of-bundle spend as a percentage of total revenue is [§].⁴¹⁸ Therefore, Vodacom's claim that "there is no evidence that OOB spend is higher for low income users"⁴¹⁹ is factually incorrect.
418. The Commission has also examined the out-of-bundle data spend relative to total data of each income segment (but on a monthly basis) as shown in the figure above. [§], it shows that the customers Vodacom characterises as poor have consistently [§] on out-of-bundle data, which is more expensive than in-bundle data, compared to those that it classifies as being high-income. Out-of-bundle expenditure accounted for on average [§] of the total spend of customers in low-income areas whereas it accounted for [§] of customers in high-income areas.
419. The analysis shows that the poor faced relatively high effective rates for most of the period and that it was only in the months after [§] that this changed.
420. Vodacom and MTN accept that on a like-for-like basis the data bundle prices are unfavourable to those who purchase lower

5.4 COMMISSION RESPONSE ON INFERIOR SERVICES OFFERED TO THE POOR

418 Vodacom's submission, 14 June 2019, p.59, Figure 43 (Confidential)

419 Vodacom's submission, 14 June 2019, p. 58 (Non-Confidential)

Figure 62: Example of Vodacom's price (headline) discrimination by bundle validity: 1GB bundle (2019)



Source: Own construction based on data collected from Vodacom's website (November 2019)

volumes such as lower income individuals.⁴²⁰ However, Vodacom has argued that poor consumers are able to bridge the effective price gap by consuming more short-validity bundles, URL bundles, and personalised offers, along with promotional free data offers.⁴²¹ MTN also points to free data and short-validity bundles as a way in which poor consumers can achieve better effective prices relative to the rich.⁴²²

421. However, the problem with this reasoning is that short-validity bundles are clearly inferior options in contrast to monthly data bundles as they only provide access for a short period, and therefore it is no answer to state that poorer consumers can and do turn to these alternatives in search of better value. At best for the operators, all this indicates is that poor consumers must accept receiving an inferior intermittent data service if they wish to pay a similar amount per MB as the wealthy. At worst for the operators, the poor still pay more per MB than the wealthy and on top of that get an inferior, intermittent service. Either way, what is apparent is

that on a like-for-like basis, a monthly data service provided to the poor is inexplicably more expensive per MB than to the wealthy.

422. A monthly data bundle seeks to ensure continued data service availability over the entire month, and at the same price per MB. Short-validity bundles, especially hourly or daily, provide data access for a very brief period only. Furthermore, it is uneconomic to purchase hourly or daily bundles on a continual basis, and purchasing four weekly bundles is no cheaper than a monthly bundle. The short-validity also results in the average level of utilisation of the bundle being [\ll] than the longer-validity bundles as subscribers fail to fully exploit the bundle before it expires. This also means that less value is derived from the short-validity bundles relative to the longer-validity ones, even if pricing is lower.

423. In fact, the pricing is lower precisely because it is of lower value than the monthly bundle as there are no material differences in costs between the two, nor is that argued by the operators. The figure above shows how

420 Vodacom's submission, 14 June 2019, p. 52 (Non-Confidential); MTN's submission, 14 June 2019, p.6, 28 (Non-Confidential)

421 Vodacom's submission, 14 June 2019, p.13 (Non-Confidential)

422 MTN's submission, 14 June 2019, Appendix C, p. 16, 36 (Non-Confidential)

Figure 63: Volume-weighted effective rates (free and paid data) by bundle validity, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Vodacom price discriminates by validity using the 1GB bundle as an example. A monthly 1GB bundle is therefore 9.6 times more expensive than a 1-hour 1GB bundle.

424. Utilisation could vary between the different bundles for various reasons. However, even accounting for such utilisation, [redacted] observed. The average effective rates of the various bundle-validities over the period taking into account the actual utilisation of bundles are presented in the figure above. Whilst we do have concerns with the utilisation data in the Vodacom dataset, even putting that aside it is clear from the figure above that the effective rates of monthly bundles (including free data) are significantly higher than the effective rates of the short-validity bundles [redacted]. This observation is broadly confirmed when we assess these effective rates using the new build of the dataset sent by Vodacom on 19 November 2019. The main difference is that after [redacted], the effective rates varied [redacted] with the length of validity (so that [redacted] bundles were more expensive than [redacted], which were more expensive than [redacted], which were more expensive than [redacted] bundles).

425. One of the key drivers reducing the effective rates of Vodacom's customers living in low- and middle-income areas relative to those living in high-income areas is the relative high usage of short-validity bundles. In its submission in response to the Provisional Report, Vodacom indicated that "*short-validity bundle usage is an important driver behind the observation that effective rates for low-income customers are comparable to (or lower than) those of wealthier customers.*"⁴²³ This it said is because of the importance of short-validity bundles among customers living in low-income areas and the fact that short-validity bundles are typically associated with lower effective rates.⁴²⁴

426. Below, we present the breakdown of sales by bundle validity period for customers in low-, middle- and high-income areas between January 2016 and April 2019. Whilst we acknowledge there are imperfections in these delineations as outlined above, the data is still useful to delineate broad trends in consumption patterns.

423 Vodacom's submission, 14 June 2019, p. 53 (Non-Confidential)

424 Vodacom's submission, 14 June 2019, p. 51, 53 (Non-Confidential)

Figure 64: Monthly sales purchases breakdown of Vodacom's customers in low-income areas by bundle validity, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Notes: The figure refers to purchase frequency as opposed to volumes of megabytes used.

Figure 65: Monthly sales purchases breakdown of Vodacom's customers in middle-income areas by bundle validity, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Notes: The figure refers to purchase frequency as opposed to volumes of megabytes used

426.1 First, at the beginning of the period, namely January 2016, lower income subscriber purchases of data was predominately monthly data bundles, constituting [✂] of purchases. This was also not too dissimilar to middle and higher income subscribers. However, as even Vodacom's own analysis demonstrates, in this period the lower income subscribers paid a higher

effective rate for data and this must be due to the fact they purchased smaller data bundles at higher costs per MB. This indicates at this point that lower income subscribers had access to a similar quality service, ensuring some monthly data to provide daily access, to higher income subscribers but at a higher price.

426.2 However, lower income subscribers

Figure 66: Monthly sales purchases breakdown of Vodacom's customers in high-income areas by bundle validity, January 2016-April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

Notes: The figure refers to purchase frequency as opposed to volumes of megabytes used.

then start to rely heavily on short-validity bundles, reaching at one point [X] of all purchases and ending the period on around [X] of data purchases. This means that only [X] of data purchases are monthly, which in turn indicates that the quality of service is materially reduced as access on a daily basis is far less likely in that context. Whilst high-income consumers also expand their use of short-validity bundles, they still retain around [X] of purchases on monthly bundles by the end of the period. By April 2019, purchases of monthly bundles made up [X] of the sales of customers in high-income areas, compared to [X] and [X] of customers in middle- and low-income areas respectively.

427. The above-mentioned observations broadly also hold when we examine the rebuilt dataset that Vodacom sent on 19 November 2019, in which it attempted to correct some of the oddities observed in utilisation.⁴²⁵

428. These trends indicate that poorer consumers have had to accept an inferior product in order to reduce their effective cost of data.

This is particularly concerning as it strongly suggests that the bulk of poor consumers are likely to be in the position where they do not have continual daily access to data services, but rather face intermittent service when they are in a position to afford a short-validity bundle. Alternatively, poor consumers must pay a materially higher price per MB if they wish to have a continual service. This is unacceptable as the point of an affordable data service to all citizens is that they have continued access to that service at an affordable price.

429. Below, we have calculated the weighted average validity for in-bundle data purchased by Vodacom's customers in low-, medium-, and high-income areas. This represents an approximation of how many days in the month the subscribers have data access for each purchase. Again, whilst the data is imperfect and some of the general problems with Vodacom's data is particularly evident at the end of the period, the data still provides some useful trend information.

429.1 First, across the entire period shown, data purchased by Vodacom's customers in low-income areas is valid for on

425 Vodacom's submission, 19 November 2019, aggregated dataset

Figure 67: Average validity of data purchased by income segment, January 2016 – April 2019



Source: Vodacom's aggregated dataset sent on 27 September 2019

average [X] days less than customers in high-income areas. Furthermore, data purchased by customers in low-income areas currently lasts on average only [X] days, which indicates that for much of a month they may lack any in-bundle data. This starkly shows the limitations on access and inferior offering that results from a strategy that pushes low-income subscribers into short-validity data bundles as a means to get reduced pricing.

429.2 Second, there has been a steady decline in the average validity of data purchased for all subscribers, including lower income ones. For customers in low-income areas, this reduced from [X] days of in-bundle data by [X] days to just [X] days of in-bundle data on average. We turn to this more in the next section, but it does demonstrate that whilst Vodacom continually touts the reductions in data prices over time, this is clearly accompanied by a reduced data service offering as all customers now get more intermittent access to data.

430. The above-mentioned trends broadly also

hold when we examine the rebuilt dataset that Vodacom sent on 19 November 2019, in which it attempted to correct some of the oddities observed in utilisation.⁴²⁶

431. In conclusion, the evidence presented by Vodacom clearly shows that lower income subscribers have only been able to reduce their effective costs of data by degrading their service to short-validity bundles which deny them an ongoing service at low rates. This remains anti-poor pricing even if the effective rates achieved were the same, which is not visibly the case as outlined in the previous sub-section. It appears that the poor may be getting a higher effective price and an inferior service.

5.5 COMMISSION'S RESPONSE ON PRICE DISCRIMINATION MORE GENERALLY

5.5.1 PRICE DISCRIMINATION IS NOT COST BASED

432. Whilst some operators have made some attempts to associate price discrimination with cost differences, other stakeholders clearly state that this is not the case. What is also apparent is that even for those that

426 Vodacom's submission, 19 November 2019, aggregated dataset

try to cite some reasoning, no actual cost difference evidence is provided. This is itself evidence that cost differences cannot account for the actual differences, because otherwise the operators would have submitted that evidence.

433. In the Provisional Report, the Commission cited Telkom as making some claims on transactional costs, which they have attempted to expand on in their latest submission. In this round of submissions it was Vodacom primarily that has attempted to argue that there are cost elements that explain the observed pricing behaviour,⁴²⁷ and its arguments encompass the submissions of the other operators. However, an examination of pricing shows that this cannot be the case.

433.1 Essentially, Vodacom argues that smaller bundles have a higher headline price per MB than larger bundles because smaller bundles have higher costs per MB than larger bundles as there are certain fixed costs (such as commissions per subscriber, retail distribution costs, the cost per SIM card, and billing costs) that are associated with a given subscriber or product and must therefore be recovered over a smaller volume. Vodacom also argues that the pricing can be explained by network costs per the quote below.⁴²⁸

“Regarding network costs, whilst there is no clear-cut distinction between costs that could be described as subscriber driven vs traffic driven, Vodacom’s method for measuring the “cost to carry” a given customer distinguishes between coverage costs and capacity costs:

- *Coverage costs: Vodacom spends a considerable amount of money to expand its coverage and ensure it benefits as many people as possible in terms of offering connectivity. This is a fixed cost Vodacom incurs*

to ensure the ‘connectivity’ layer is established, and in some cases is part of its license obligations and, as such, is not linked to a customer’s actual usage.

- *Capacity costs: On top of the coverage layer, Vodacom invests for capacity, to meet the customer usage demand. This incremental cost is variable in nature and is driven by customer demand. This is estimated as capacity cost per MB.”*

434. What Vodacom essentially implies is that for each given product or sale (e.g. a bundle), regardless of the volume of data consumed, it faces the same fixed (coverage) costs, whereas on the contrary capacity costs (which are variable) differ with usage (e.g. the size of a bundle). Vodacom therefore suggests that the ratio of fixed costs to total costs is higher for smaller bundles than it is for larger bundles, which explains the price differentials between the two types of customers.

435. However, whilst Vodacom is able to put up some theoretical argument that might provide them with a justification for smaller bundles being priced more than larger bundles, there is no attempt by Vodacom to show that the extent of the price differences are reasonably related to such a theoretical exercise. This is plainly because they are not. This explanation of coverage vs capacity costs also would seem to struggle to account for the differences in price for a 1GB 1-hour or 1-day bundle relative to a 1GB 30-day bundle as both products represent one unit, or sale, and both utilise the same volume on the network.

5.5.2 PRICE DISCRIMINATION DOES NOT UNAMBIGUOUSLY RAISE CONSUMER WELFARE

436. Most operators have abandoned the cost argument and instead have focused on rattling out the favoured verse that economists find that price discrimination

427 Vodacom’s submission dated 14 June 2019, p.66-69 (Non-Confidential)

428 Vodacom’s submission dated 14 June 2019, p.68 (Non-Confidential)

is typically pro-competitive and efficient, and that it is very common in the telecommunications industry in particular. Under this approach, the rationale for price discrimination strategies is not founded on reasons related to costs but rather increasing output and lowering costs beyond what could be achieved under uniform pricing, and making more effective use of capacity.

437. This rationale is echoed by both Vodacom itself and Richard Feasey who it refers to. Vodacom argues that its price discrimination practice enable it to a) maximize revenue,⁴²⁹ b) sell greater volumes of data at lower prices,⁴³⁰ and to c) manage capacity utilisation.^{431 432} These sentiments are echoed by Mr. Richard Feasey in his expert report where he states that *“data volume is important because the overall capacity of mobile networks tends to be continuously expanding as a result of investments in new technologies ... This leaves operators with strong incentives to encourage consumers to consume higher volumes of data services, even if additional income the operators gain from doing so is relatively modest.”*⁴³³
438. In fact, Vodacom goes further and contends that its price discrimination practices are beneficial to consumers and not just the operators. It argues that its price discrimination enhances welfare by increasing consumption among consumers with a lower willingness to pay.⁴³⁴ Customers with ‘a lower willingness to pay’ is used by Vodacom and Feasey to describe poorer consumers. Vodacom contends that the benefit of price discrimination to consumers with a low willingness to pay *“is borne out by the (...) evidence which indicates that lower income customers in fact typically*

*pay comparable (or lower) effective rates to those paid by higher income consumers.”*⁴³⁵ In trying to support this claim, Vodacom quote the report of Mr. Feasey where he argues that:

“Price discrimination is a feature of many markets and generally regarded as progressive in terms of distributional outcomes. In other words, with price discrimination low income consumers are generally likely to be offered lower prices which better match their willingness to pay, whilst high income customers find themselves paying more.”

439. RBB Economics (for MTN) implores the Commission to consider that price discrimination practices are generally positive for consumers, and only negative in exceptional cases. They do not make any case to believe that this case could be one with negative consequences. Instead they appear to suggest that just because it is (in their view) unlikely that any case of price discrimination is negative for consumers, that one should not consider the current case more deeply (if at all).⁴³⁶ They also point out that the price discrimination practices are alleged to have resulted in larger volumes and thus there is no cause for concern.
440. MTN itself argues that *“consumers who spend smaller amounts on mobile services benefit from lower effective rates for data connectivity than consumers who spend larger amounts on mobile services. MTN’s data pricing is in fact “pro-poor”, and not “anti-poor”.”*⁴³⁷ MTN submits that this outcome is *“These findings are largely driven by the high proportions of free data*

429 Vodacom’s presentation at the public hearings held on 17-18 October 2018. See Day 2 transcripts, p.45 (line 14-25)-46 (1-2)

430 Vodacom’s submission dated 14 June 2019, p. 67 (Non-Confidential)

431 Vodacom’s submission dated 14 June 2019, p. 101 (Non-Confidential)

432 Vodacom states that Due to a lack of spectrum, it has been challenging for Vodacom to maintain its high network quality ... in order to remain attractive to quality-conscious customers, Vodacom has to manage its data prices to mitigate the negative impact that increased usage could have on its service quality.

433 Mr. Richard Feasey’s expert report, p.13, para.42 (Non-Confidential)

434 Vodacom’s Submission dated 14 June 2019. p.65-66 (Non-Confidential)

435 Vodacom’s submission dated 14 June 2019. p.66 (Non-Confidential)

436 MTN’s submission dated 14 June 2019. Annexure C, para.17-23 (Non-Confidential)

437 MTN Submission dated 14 June 2019. p.17. para. 3.4 (Non-Confidential)

used by those prepaid subscribers who only spend small amounts on all mobile services (or only on data)."⁴³⁸

441. Vodacom's additional argument is that the degree of price discrimination is less in South Africa as compared to other countries. To argue this, Vodacom uses international benchmarking data from A4AI to show the per MB pricing differential between 100MB and 1GB bundles/usage. As shown in Figure 8 from the Vodacom submission, South Africa is shown as having a 95% differential between the per MB rates for 100MB relative to 1GB, which in this instance places South Africa as the 4th best of 55 countries. However, it is the Commission's view that the A4AI data used by Vodacom cannot be relied upon for a comparative analysis of pricing between 100MB and 1GB data usage/bundles. The reasons for the Commission's position in this regard are presented in more detail in Appendix A below.

442. However, what these submissions fail to even engage with at all is the possibility that at least aspects of the price discrimination in the market are not procompetitive or efficiency enhancing, but rather exploitative in nature. The economics literature is clear insofar as indicating that whilst price discrimination may always increase producer welfare, it is ambiguous in respect of the welfare effects on consumers and therefore requires the balancing of effects on a case by case basis. This is pointed out by O'Donoghue and Padilla (2006) who state that "No unambiguous a priori conclusions can ... be drawn in respect of the effects of price discrimination on consumer welfare: an effects analysis is necessary in each case."⁴³⁹ This is echoed by the OECD which states that "... price discrimination produces ambiguous effects and should be subject to a case-by-case analysis."⁴⁴⁰

443. As the OECD identifies, firms with market power are incentivised to use partitioning strategies in order to engage in forms of exploitative price discrimination which have the effect of raising their overall mark-ups through exploiting particular consumer segments and their behavioural biases. In cases of exploitative price discrimination, this can "lead to consumers in that market paying higher prices or receiving lower quality products"⁴⁴¹. As explained by the OECD⁴⁴²:

"On one view, exploitative price discrimination is simply conduct in which a firm with a significant degree of market power sets prices that maximise its profit. It does not change the degree of market power or lead towards monopolisation. What this view misses however is that there are also non-exclusionary unilateral actions (or 'partitioning strategies') that can help a dominant firm not to profit maximise, but to change the profit maximising price(s). These actions increase its mark-ups, and, as noted by Vickers, Elhauge, and Nalebuff, price discrimination schemes that enable firms to raise mark-ups also increase market power and can therefore help create "a more powerful monopoly". As noted in section 2 these actions might be labelled partitioning strategies."

*"What might these partitioning strategies involve? **They might include taking steps to prevent arbitrage, or to distinguish between sophisticated and naïve customers, as well as gathering and analysing data on individual consumer's willingness to pay for a product. These actions might be used by the firm to partition a market, increase average mark-ups and hence market power.**" (emphasis added)*

444. Indeed, the OECD also warns that the risk of exploitative price discrimination grows where dominant firms start to become more

438 MTN Submission dated 14 June 2019. Appendix C, p.16. para.36 (Non-Confidential)

439 O'Donoghue R., and Padilla A.J. (2006) The Law and Economics of Article 82 EC. p.556

440 OECD Roundtable on Price Discrimination (2016), p.8

441 OECD Roundtable on Price Discrimination (2016), p.8

442 OECD Roundtable on Price Discrimination (2016), p.14

sophisticated in their strategies, including personalised pricing which is the case now with both Vodacom and MTN. In these cases the OECD stresses the need to in fact verify that these strategies are not exploitative.⁴⁴³

“As increasingly sophisticated price discrimination schemes allow dominant firms to become better at exploiting their market power through personalised pricing, and the potential for static harm to consumers grows, it seems increasingly important for agencies to satisfy themselves that the theoretical dynamic benefits from permitting these schemes are in fact verifiable. This might mean, for example, examining whether the market power that is better exploited through price discrimination is in fact built on behaviour that benefits consumers in the longer term, or whether it reflects rent-seeking activities, investment in more effectively price discrimination, or exploitation of consumers’ behavioural biases.” (emphasis added)

445. Whilst the operators point to price discrimination being common in telecommunications markets, it is also the case that such discrimination has frequently been criticised in the consumer behaviour literature for creating complex pricing structures which exploits consumer behavioural biases. Firms can introduce complex price structures to discourage the consumer from researching the best price they can get with the hope to profit from judgement errors arising from this complexity.⁴⁴⁴ The intuition is that when faced with multiple and complex choices, consumers have little knowledge or awareness of prices and some individuals

are likely to continue purchasing the bundle they are familiar with⁴⁴⁵ as they fear being betrayed by the new offers they might chose.⁴⁴⁶ Other consumers often misjudge the price levels they presented to them and end up being worse-off. Wilson and Waddams Price (2010), cited in Rebai and Fletcher (2013), shows for example that because of price complexity a large number of consumers who switched to seemingly better offers from other operators ended up worse off.⁴⁴⁷

5.5.3 PRICING STRATEGIES OF DOMINANT OPERATORS’ PARTITION AND EXPLOIT

446. The first precondition for a case of partitioning strategies and exploitative price discrimination are present in the South African mobile data market, insofar as there is persistent market power by Vodacom and MTN in the market as discussed in section 4.3. Indeed, the OECD indicate that *“significant market power or dominance, while not a necessary condition for harm, is a good indicator of the magnitude of harm in a static analysis.”*⁴⁴⁸
447. The second element to the assessment as outlined by the OECD is *“whether the scheme is harmful to consumers in a static analysis.”*⁴⁴⁹ Whilst the OECD suggests that the overall output effects may be one element that could assist in this determination, namely that it is certainly harmful if it does not raise output, it also recognises that establishing the counterfactual may not always be straightforward.⁴⁵⁰ This is certainly the case in mobile data as there is a massive growth in latent demand and applications for mobile data irrespective of price changes, as well as increases in network capacity, which means that output will grow

443 OECD Roundtable on Price Discrimination (2016), p.5

444 Rebai, L. and Flacher, D (2013) Price complexity and consumer choice in the telecommunication service sector in Tunisia, p.5. *Revue économique Industrielle* (2013/3), No. 143, p.133.176

445 Rebai, L. and Flacher, D (2013) Price complexity and consumer choice in the telecommunication service sector in Tunisia, p.6. *Revue économique Industrielle* (2013/3), No. 143, p.133.176

446 Rebai, L. and Flacher, D (2013) Price complexity and consumer choice in the telecommunication service sector in Tunisia. p.7. *Revue économique Industrielle* (2013/3), No. 143, p.133.176

447 Rebai, L. and Flacher, D (2013) Price complexity and consumer choice in the telecommunication service sector in Tunisia, p.7. *Revue économique Industrielle* (2013/3), No. 143, p.133.176

448 OECD Roundtable on Price Discrimination (2016), p.17

449 OECD Roundtable on Price Discrimination (2016), p.17

450 OECD Roundtable on Price Discrimination (2016), p.17

substantially in the counterfactual absent the price discrimination. This is confirmed by operator submissions.

- 447.1 Vodacom shows in Section 4.1.2 of its submission⁴⁵¹ that the introduction of new technology such as 4G is linked to increases in capacity and download speeds and accordingly increases in volumes.⁴⁵²
- 447.2 MTN's have also submitted to the Commission that *"Investment has increased. Underpinning these outcomes has been a massive investment by the MNOs in improving the quality and coverage of their networks, and in introducing better, more efficient, and faster technologies year on year."*⁴⁵³
448. This makes it infeasible to really establish the output counterfactual and therefore to rely on any output measures in order to test for harm. Instead one can examine other measures which might indicate if the operators are engaged in strategies to partition and if there is harm to consumers, or consumer segments. The general evidence on pricing strategies outlined in the earlier sections as well as the evidence on outcomes in terms of profitability and lower income consumer pricing provide ample evidence that the dominant two operator strategies do indeed partition and ultimately exploit consumers, more particularly so lower income consumers.
449. First, it is evident from the international price comparisons as well as the evidence on headline prices over time that both Vodacom and MTN have adopted a different strategic approach in South Africa relative to other countries in which they operate.
- 449.1 In particular, these operators have taken the strategic decision to not reduce 30-day prepaid data bundle prices for most data bundle sizes for the past five years. Indeed, it is only in the last month that

Vodacom has reduced its 30-day 1 GB price despite Telkom doing so in 2014.

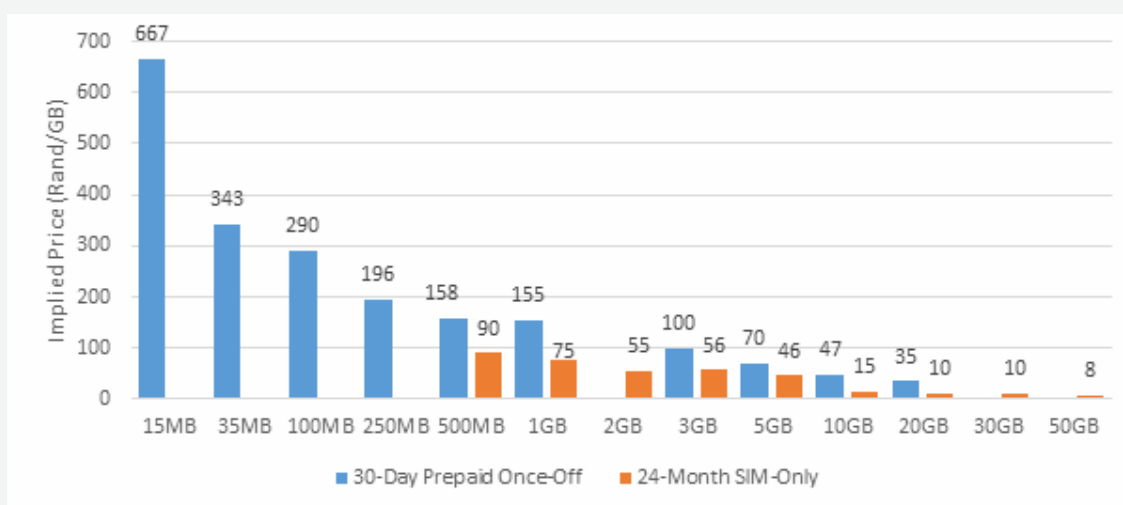
- 449.2 This is in contrast to their behaviour in other countries in which they operate as is evident from the large and growing gap between the constantly reducing 30-day data bundle prices at their other operations in Africa relative to South Africa. The large and growing gap that is demonstrated in the international benchmarking section and is clearly a function of headline prices not declining in SA, evident in the section on alleged competitive responses, and lowering prices in other markets.
- 449.3 The strategic partitioning approach in South Africa within the prepaid market is to rather engage in price discrimination through making far more extensive use of short-validity and URL data bundles. As discussed above, these effectively ensure that for essential data use which requires an ongoing data connection that this may be unaffected by potentially lower prices for discretionary spend as Vodacom has euphemistically explained the strategy. Furthermore, these bundles have no obvious link to known price discrimination efficiency arguments such as improving capacity utilisation in off-peak periods, such as night-time data bundles, as they are available to all consumers at all times.
450. Second, the other strategic differential in South Africa relative to other markets in which the two operators have operations, and in relation to global markets more generally, is that the two dominant operators would seem to have successfully partitioned the market is in relation to postpaid relative to prepaid.
- 450.1 As the international benchmarking section demonstrates, South Africa performs materially better on postpaid comparisons of headline prices relative

451 Vodacom's submission dated 14 June 2019 (Non-Confidential)

452 Vodacom's submission dated 14 June 2019, from p.93 (Non-Confidential)

453 MTN's submission dated 27 November 2017, p.21 (Non-Confidential)

Figure 68: Price disparities between prepaid and postpaid data plans on Vodacom



Source: Vodacom's website (November 2019)⁴⁵⁴

to prepaid prices.⁴⁵⁵ This indicates that the two dominant operators have been more effective at partitioning the prepaid subscribers from the postpaid subscribers in South Africa relative to other countries in which they operate and other markets. In so doing, price reductions for postpaid customers do not filter through to prepaid price reductions.

450.2 The evidence on alleged competitive responses of the two dominant operators is also consistent with this. That evidence showed that the two did not respond to Telkom's price reductions for 1GB prepaid data bundles but that Vodacom did indeed respond to the high usage postpaid bundles of 10GB per month or more.

450.3 This has resulted in vast disparities in the price per GB in headline prices between high usage postpaid and prepaid. Vodacom now has pricing as low as R199 for 20GB anytime data (with 20GB night-time data) - or R10 a GB - whereas until very recently a 1GB

prepaid bundle (with 1GB night-time) came at a cost of R149 and now still goes for R115 (or at R99 on the operator app). The figure above shows a depiction of these disparities between prepaid and postpaid headline prices.

450.4 This is also entirely consistent with the observations by the Commission in the Provisional Report that poorer prepaid consumers appear to be worse off because of the lack of alternatives. For wealthy consumers there may well be alternative options for data services such as FTTH and/or Wi-Fi at home. Whilst these consumers will still need data services on mobile devices, they have options for heavy usage. Furthermore, Telkom Mobile has made use of its spectrum in the high capacity 2300 MHz bands to offer LTE wireless high usage bundles even as a FTTH alternative. Therefore, both Vodacom and MTN would need to respond to the lower pricing of these alternatives if they are to share in more of the data use of the wealthier customers. The pricing

454 For postpaid headline prices, see: https://myvodacom.secure.vodacom.co.za/cloud/shopping/product-details/SIM_card_only

455 Even if benchmarking is considered imperfect, the relative comparison remains informative as the same imperfections exist for both customer types.

- responses reflect that imperative. However, what they have entirely successfully achieved is partitioning that customer segment such that it does not contaminate their pricing to other customers.
- 450.5 The one means of successfully partitioning is to primarily offer the lower priced heavy usage bundles on a postpaid basis. The wealthy customers have the income and credit rating to conclude postpaid contracts and can therefore take advantage of such deals. In contrast, the poor are not capable of committing to long-term contracts and many would not secure the credit to do so. This is the reason why Vodacom is able to offer monthly data at R10/GB (postpaid) compared to R149/GB (prepaid) in the same market. In the words of exploitative price discrimination, these are strategies “to prevent arbitrage”.
- 450.6 Once more, the standard efficiency arguments for price discrimination cannot explain such a significant differential. The usual explanation would be that a contract customer provides some security of demand for which they are rewarded, and which has benefits to the operator. However, in the context of exponential growth in data demand through simply more people getting Internet access and an explosion of data-rich applications, there is security of demand going forward for all operators.
451. Third, the two dominant operators have both also embarked on personalised pricing which have the potential to be most exploitative in the context of market power. This is because personalised pricing allows the discriminating firm to charge the highest it can to each customer or customer group. The impact of personalised pricing on consumer welfare is likely to depend on the competitive landscape of the market.⁴⁵⁶ In markets where competition is weak, firms may have a greater ability to use their knowledge about consumer valuations to charge higher prices (or as close to the maximum as possible) than in more competitive markets where aggressive rivals can undercut discriminating firms.⁴⁵⁷
- 451.1 It is well documented that MNOs in South Africa often offer personalised bundles to their customers. The Commission heard extensive submissions by Vodacom and MTN during the public hearings that personalised pricing is increasingly becoming a common feature of their pricing strategies and it is growing more pervasive with time. These submissions are echoed in the latest submissions by the MNOs.
- 451.2 Vodacom states that its Just 4 You products have grown increasingly important⁴⁵⁸ and is available to all consumers (for example, Just 4 You pricing is listed on the Vodacom menu as well as alongside open market bundles)⁴⁵⁹. Albeit it seems from communication with Vodacom that the prices on the Just 4 You product do not [redacted].⁴⁶⁰ However, this will grow in sophistication over time. According to the CEO of Vodacom, Mr Shameel Joosub, machine learning has been one of the most important features of personalising prices in the last three years⁴⁶¹ ⁴⁶², and is thus a relatively recent development in personalised pricing which will attract greater focus in future.
452. In short, the strategies adopted by the two dominant mobile data providers are consistent with all the types of partitioning strategies cited by the OECD, namely

456 OECD Secretariat (2018) Personalised Pricing in the Digital Era, A background note by the secretariat para.45

457 OECD Secretariat (2018) Personalised Pricing in the Digital Era, A background note by the secretariat para.45

458 Vodacom's submission dated 14 June 2019, p.31 (Non-Confidential)

459 Vodacom's submission dated 14 June 2019, p.29 (Non-Confidential)

460 Vodacom's submission dated 25 October 2019, p.7, para. 19.2

461 As at 18 October 2018.

462 Vodacom's presentation at the public hearings held on 17-18 October 2018. See Day 2 transcripts, p.28

distinguishing between sophisticated and naïve customers, between high volume and low volume purchasers, as well as gathering and analysing data on individual customers' willingness to pay for a product.⁴⁶³

453. Fourth, the outcomes for consumers are also consistent with the exploitative nature of these partitioning strategies and the resulting price discrimination. In particular, it is clear that consumers get higher prices and also inferior outcomes.

453.1 The profitability analysis conducted in the previous section demonstrates that market power is being exploited and excessive margins being earned by the dominant operators. This is also consistent with the outcomes of the international benchmarking exercise.

453.2 The evidence cited above also shows that poorer consumers are being exploited through both higher prices and an inferior quality product, the test outlined by the OECD. Not only are effective prices higher for such consumers, along with headline prices, but also they are now forced into adopting short-validity bundles to reduce their costs but which are inferior as they deny lower income consumers ongoing daily access at affordable prices such as that provided by monthly bundles. The heavy reliance of low-income consumers on short-validity bundles is testament to that outcome.

454. These outcomes are also inconsistent with Mr Feasey's claim in Vodacom's submission that *"with price discrimination low income consumers are generally likely to be offered lower prices which better match their willingness to pay, whilst high income customers find themselves paying more."*⁴⁶⁴

5.6 COMMISSION'S RESPONSE ON DEVICE COSTS

455. The Commission found in the Provisional Report and in Section 2 above that while there is near universal coverage of mobile networks in South Africa, the level of internet access on mobile platforms is relatively limited with roughly 36% of the population gaining data access through smartphones. The Commission opined that this was likely a result of a combination of unaffordable smartphones and high data prices. Given that coverage is almost universal while access is limited, the Commission considered there to exist a demand gap for mobile services which can be remedied by making data more affordable in line with the ToR for the Inquiry. Thus, data affordability will make data demand match the supply such that true access is universal.

456. What the submissions in response to the Provisional Report (see Section 5.2.4 above) show is that affordability considerations must go beyond the cost of data to also tackle issues of device affordability, where the Commission admittedly placed less focus. In a nutshell, the submissions of stakeholders such as RIA, SOS and Sutherland state that handset prices are unaffordable for poor consumers and this limits access to data services.

457. A study by GSMA for example shows that smartphones are key to expanding internet access and they represent one of the most affordable internet-enabled devices available on the market.⁴⁶⁵ As a result, as GSMA averred, many low-income populations in emerging markets will have their first experience of the internet through a mobile phone. Alternatives such as internet cafes, or through friends and family, as well as higher-end devices such as computers or tablets, are either more expensive or inconvenient. GSMA also notes that prepaid

463 OECD secretariat (2016) Price discrimination, A background note by the secretariat. p.6 & p.7

464 Vodacom's Submission dated 14 June 2019. p.66 (Non-Confidential)

465 GSMA (July 2017) Accelerating affordable smartphone ownership in emerging markets, p.21. Available on: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/08/Accelerating-affordable-smartphone-ownership-in-emerging-markets-2017_we.pdf. [Accessed on 07 November 2019]

mobile broadband services remain the most common route to getting online in emerging markets, which signifies the importance of affordable smartphones.

458. The economic benefits of device affordability are highlighted by GSMA in its study where it states that *“Facilitating affordable smartphone ownership for low and middle income consumers in emerging markets should be made a key priority. Market pressures alone will not bring down prices to a level that makes smartphones affordable for low income groups in the near future. Mobile industry actors, financial institutions, NGOs, governments, community organisations and policy makers have the opportunity to support consumers’ improved device access, and stand to benefit from increased smartphone penetration and the ensuing socioeconomic benefits.”*⁴⁶⁶
459. One important aspect of GSMA’s argument is the notion that device affordability is a concern for everyone that stands to benefit from a connected nation, including both the public and the private sector. This suggests that any solutions to get the public connected must come from any economic agent that stands to benefit from a connected society, including both the government and the private sector.
460. Another study showing the economic benefits of device affordability was conducted by Bjorkegren (2018). The study shows, *inter alia*, that (i) handset taxes negatively relate to handset adoption and economic welfare; and (ii) since all handset adopters pay the same cost of a handset regardless of usage, poor adopters end up paying a substantial portion of the tax burden, hence, eliminating

handset taxes would raise the surplus obtained by these consumers.⁴⁶⁷

461. The relevance of the affordability of devices is also evident in the fact that the operators, as we understand, often subsidize devices in order to get new consumers on their network. MTN for example submitted in the public hearings that the cost of devices affects internet access⁴⁶⁸ and MTN often subsidizes devices in order to stimulate data demand even in the prepaid market.⁴⁶⁹ While there is of course a profit motive in this for operators, it does show that the obstacle of device affordability is more than real.
462. MTN argued at the public hearings that one driver of the cost of devices is import duties since most of the devices in the country are imported.⁴⁷⁰ This is in line with the GSMA study which shows import taxes and duties as one of the factors driving device costs in emerging economies.⁴⁷¹ Indeed, South African importers of devices do pay an excise duty (an import duty on certain luxury or non-essential items) of 9% of the value of the imported products.⁴⁷² MTN advocated for regulations to remove these duties if devices, and hence data services, are to be affordable in South Africa.⁴⁷³
463. The Commission welcomes these submissions and agrees that the cost of devices needs to be properly considered in the affordability discourse. Indeed, access to affordable smartphones is crucial for data access, especially for the poor. The Commission is of the view that if there is merit to reducing the excise tax on smartphones as one means of achieving that outcome then operators should make that case to National Treasury.

466 GSMA (July 2017) Accelerating affordable smartphone ownership in emerging markets, p.21. Available on: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/08/Accelerating-affordable-smartphone-ownership-in-emerging-markets-2017_we.pdf. [Accessed on 07 November 2019]

467 Bjorkegren, D. (2018) The Adoption of Network Goods: Evidence from the Spread of Mobile Phones in Rwanda. Review of Economic Studies (2019), Vol. 86, p.1033-1060

468 MTN presentation at the Public Hearings. Day 2 Transcripts, p. 84

469 MTN presentation at the Public Hearings. Day 2 Transcripts, p. 87-89

470 MTN presentation at the Public Hearings. Day 2 Transcripts, p. 89


471 GSMA (July 2017) Accelerating affordable smartphone ownership in emerging markets. Available on: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2018/08/Accelerating-affordable-smartphone-ownership-in-emerging-markets-2017_we.pdf. [Accessed on 07 November 2019]

472 SARS Excise and Ad Valorem Duty Schedule 2019.

473 MTN presentation at the Public Hearings. Day 2 Transcripts, p. 89

5.7 FINDINGS

464. The Provisional Report identified that the structure of prices contained in headline tariffs for monthly data bundles were anti-poor insofar as the cost per MB for smaller volume bundles was inexplicably higher than the cost per MB for higher volume bundles. That finding also established that there was not a cost rationale for the extent of difference. The Provisional Report also undertook an analysis of effective prices to low volume users in comparison to high volume users on Vodacom and MTN in order to determine if the picture at a headline price level is also reflected in effective prices. That analysis demonstrated that it was consistent and poorer consumers which consume less than wealthier consumers do pay more on a per MB basis.
465. The submissions received in response to the Provisional Report provide no compelling evidence to dispute the provisional findings. In particular:
- 465.1 Neither MTN nor Vodacom fundamentally challenged the Commission's effective price analysis except to argue that low-volume is not necessarily associated with lower income consumers. Despite this averment by both operators, their own classification system [38].
- 465.2 MTN's economists RBB claimed to have demonstrated the counterintuitive result that low-income consumers, as proxied by ARPU's, faced far lower effective prices than higher income consumers, who apparently paid the most per MB. However, once the distortions created by their data cleaning approach, averaging approach and a major MTN once-off data promotion to sign new subscribers are removed, then the results mirror that of the Commission's exercise.
- 465.3 Vodacom undertook an extremely challenging and sophisticated exercise to try classifying consumers into income groups based on their night-time location. However, it was maybe overly ambitious as the Commission continues to identify problems in the data which Vodacom continues to try and address. The dataset is clearly not reliable and hence the results are not either. However, even on this dataset, the best case put forward by Vodacom is that consumers in lower income areas historically paid higher effective prices per MB than wealthier ones, but this gap may have now closed. The picture looks worse for consumers in lower income areas relative to those in higher income areas on the basis of a median effective rates comparison, which is a more appropriate approach. It is likely to look even worse using simple average effective rates (as was done in the case of MTN).
466. The Commission therefore confirms its finding that the pricing structures in the industry, and particularly for Vodacom and MTN, are anti-poor, whether viewed at a headline or effective price level.
467. Furthermore, additional analysis by the Commission in the course of the Inquiry of Vodacom and MTN's profitability, competitive responses (or lack thereof), international benchmarks, their particular price discrimination strategies and lower income consumption patterns, have collectively contributed to identifying a far more concerning practice of partitioning and exploitative price discrimination of the poor in particular.
- 467.1 The submissions from the two dominant operators confirm that poor consumers have faced little choice but to increasingly make use of inferior short-validity bundles in order to reduce their data costs. These are inferior insofar as they deny poor consumers continuous affordable data services. The most popular are cheaper [38] and [38] bundles but these leave consumers with no service outside of these times unless they purchase expensive small monthly bundles. Data on in-bundle data purchases shows that, for lower income consumers, data purchased



was on average only available for [X] days in April 2019. The result is that the poor are not only paying more, but are getting an inferior service on top of that.

- 467.2 The fact that the poor face such a bleak situation is a result of seemingly deliberate partitioning and price discrimination strategies adopted by Vodacom and MTN in South Africa and which they do not seem to adopt in other countries in which they operate. These two operators have kept monthly data bundles high and unchanged for largely the last five years, pushing consumers to these short-validity (and URL) bundles whereas in other markets where they operate there have been large reductions in monthly data bundle prices. Furthermore, the operators have successfully partitioned the postpaid data service such that they have responded to lower prices offered by Telkom Mobile for heavy usage bundles whilst preventing that price reduction from contaminating their higher prepaid data bundle prices.
- 467.3 The finding on abnormal and excessive profits by Vodacom in particular, but also MTN confirm that prices are higher than they should be and it is the Commission's view that these strategies have contributed to that outcome.
468. The Commission therefore finds that poorer consumers in South Africa are being exploited through higher prices and inferior services. The Commission also finds that this is most likely due to the fact that they have no alternatives for data services in contrast to wealthier consumers, and that partitioning strategies used by the dominant operators seek to exploit this position.



6. COST DRIVERS – SPECTRUM AND FACILITIES ACCESS ISSUES

6.1 SUMMARY OF PROVISIONAL FINDINGS ON SPECTRUM

469. The Commission's provisional findings (and subsequent recommendations) in relation to spectrum allocation and facilities access took into account the fact that the Policy Directive regarding these issues was not finalised at the time the Provisional Report was released. Chapter 2 of the Provisional Report discusses the policy environment as at the time of publication and the developments that were occurring at that time. Nonetheless, the Commission was able, given the policy environment at the time, to make provisional findings and recommendations in this regard but expressed its desire to assist in directing or shaping new and imminent developments such as the finalisation of the Amendment Bill and the process of assigning the currently unassigned spectrum. Below is a brief summary of the provisional findings of the Commission.

470. In its Provisional Report, the Commission identified the lack of spectrum and facilities access issues as key drivers of costs for operators. Regarding spectrum, the Commission noted in the Provisional Report that delays in the release of high demand spectrum have left MNOs with both insufficient spectrum and a lack of access to favourable low frequency spectrum. This has the effect of raising costs unnecessarily as operators compensate for the lack of spectrum through increasing the volume of base stations, raising capital and operational costs. Similarly, the lack of low frequency spectrum, which propagates further and

can provide better indoor coverage, may impact on the extent of capital expenditure required to satisfy a given level of demand.

471. The Commission found that whilst the release of spectrum will reduce operator costs, this will not necessarily result in price decreases unless there is sufficient competitive pressure on mobile operators to do so. Furthermore, the actual assignment of spectrum, both in terms of volume and frequency bands, itself has an impact on the extent of competition in that market. The Commission found that in order to promote competition, spectrum assignment cannot simply be assigned on the basis of revenue maximisation which is likely to see larger operators getting a larger share, but must factor in how the assignment impacts on competitive forces if lower costs are to translate into lower prices. In this regard, the Commission found that ICASA needs to consider in its spectrum design whether a purely symmetrical approach continues to inform its spectrum policy, or if some asymmetry, including pro-competitive asymmetry, should be a factor in assignment. Flowing from these findings are provisional recommendations made by the Commission that spectrum assignment should be conditional upon commitments to pass on the cost savings operators say will be realised, through lower data prices, and procompetitive assignments that may include asymmetric assignments of spectrum.

472. The Provisional Report did not discuss whether a wireless open access network (WOAN) is itself a desirable policy direction or not, but rather took the approach of determining how best the WOAN may

be established if there is a clear policy decision to go that route. In this respect, the Provisional Report indicated that if spectrum is given to a WOAN) then the design of the WOAN itself must be procompetitive. The purpose of the WOAN in terms of policy is to provide a wholesale network that may service a layer of new mobile virtual network operators (MVNOs) at the retail level to stimulate greater competition for retail services. To serve this purpose, the WOAN needs to be designed in a manner that is likely to make it an effective competitor if the MVNOs that make use of it are to exert some competitive constraint and grow at the retail level. This requires consideration of funding and business models, not just the technical assessment of spectrum assignment as undertaken by the CSIR. If the WOAN is to be operated by an existing vertically integrated operator, then the design considerations will need to include ensuring vertical separation and cost-orientated wholesale pricing.

6.2 SUBMISSIONS IN RESPECT OF PROVISIONAL FINDINGS ON SPECTRUM

473. The Commission received a number of submissions relevant to the findings in the Provisional Report. Once more, these were submitted prior to the more recent developments of the Policy Directive and the ICASA draft Information Memorandum and may therefore be overtaken by subsequent

events. For the most part, submissions supported the Commission's provisional findings:

- 473.1 *amandla.mobi* agrees with the Commission's finding that allocating additional spectrum to existing operators will not necessarily lead to lower data costs for low-income consumers. It cited numerous attempts by network operators to undermine gains for consumers. For example, they cite the fact that operators interdicted the implementation of ICASA's 'End-User and Subscriber Service Charter Amendment Regulations' and attempted to charge consumers for the benefits provided for in these regulations.⁴⁷⁴ Therefore, *amandla.mobi* supports the idea that additional spectrum will only be released if pricing commitments by the mobile operators are made.⁴⁷⁵
- 473.2 R2K also advocates for the allocation of spectrum to pro-poor initiatives by stating that "*there needs to be immediate redirection of the process of spectrum allocation and policies ... to allow for equal distribution of spectrum not only to service providers but to alternative forms of internet access such as Community Networks*"⁴⁷⁶
- 473.3 In its submission to the Commission, SOS agreed that the lack of high-demand spectrum limits the reduction of data prices as well as the quality and

474 *amandla.mobi's* submission, 14 June 2019, p.3

475 *amandla.mobi's* submission, 14 June 2019, p.4

476 R2K's submission, 14 June 2019, p. 7

wider bandwidth necessary for online delivery of broadcast-like content. Although SOS has long urged the completion of digital migration, given the ongoing delays, it has called for a review of the project in its entirety with the possibility that introducing (Digital Terrestrial Television) DTT be shelved in favour of satellite delivery.⁴⁷⁷ This, it argues, will further help free up in the short-term the spectrum needed to reduce data prices.⁴⁷⁸

473.4 SOS agreed that high-demand spectrum needs to be made available quickly, requiring that the Minister issue her final policy direction in this respect on an urgent basis. It also agrees that the method for allocating this spectrum should not aim to maximise revenues. Instead, it should aim to benefit the current users of data as well as those who currently lack access. Therefore, SOS suggest that the award of such spectrum be connected to data service pricing (directly or indirectly) and universal access commitments like coverage targets and 'lifeline' data provision.⁴⁷⁹

473.5 RIA welcomes the Commission's recommendation to urgently assign high demand spectrum as this spectrum can allow the provision of 4G/LTE services in a more cost-effective way and this assignment process has been delayed for years.⁴⁸⁰ As this is taking longer than expected, RIA recommends reducing some of the cost drivers associated with broadening services such as (i) making unused spectrum

available to communities and entities wishing to offer low-cost services, (ii) enabling the "deployment of dynamic spectrum technologies on the vastly underutilized spectrum available in rural areas which can be deployed at a fraction of the cost of GSM services", and (iii) expediting the roll out of public Wi-Fi (as mandated by SA Connect) especially to schools.⁴⁸¹

473.6 MMA agrees with the Commission's argument that the delays in digital migration and the release of high-demand spectrum has a negative impact in the sector.⁴⁸² MMA blames these delays to regulatory failures and uncertainties. MMA further urged (in relation to spectrum allocation) that there needs to be market-related and regulatory interventions to facilitate and promote the development (and up-scaling) of models for connectivity, such as the Shikamoto Community Network which it developed.⁴⁸³

473.7 ICASA submits that it broadly agrees with the main cost drivers identified by the Commission in its Provisional Report, including spectrum.⁴⁸⁴

473.8 Vodacom agrees with the Commission regarding the urgent need for additional spectrum to be made available to operators, as South Africa currently lags behind other countries in terms of mobile spectrum availability and spectrum scarcity increases mobile operators' costs.⁴⁸⁵ Vodacom also agrees with the Provisional Report in that the WOAN should not be allocated all high demand spectrum as this

477 The release of digital dividend spectrum needs to account for technological change and market shifts. Both analogue and digital terrestrial television are dying markets "...facing fundamental inroads from over-the-top (OTT) and streaming services delivering television-like content" and "...subscription services delivered via satellite". In fact, the consumption of premium television content has shifted to digital satellite platforms along with the bulk of advertising spend. Source: SOS submission, 14 June 2019, p.8

478 SOS submission, 14 June 2019, p.6,8, 10

479 SOS submission, 14 June 2019, p.10-11

480 RIA's submission, 14 June 2019, para. 8.2.1

481 RIA's submission, 14 June 2019, para. 8.2.2

482 MMA's submission, 14 June 2019, p.11

483 MMA's submission, 14 June 2019, p.11-12

484 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p.6

485 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.92 (Non-Confidential)

would create a “near-monopoly RAN provider”.⁴⁸⁶

- 473.9 In terms of spectrum scarcity, MTN similarly agrees with the Provisional Report in this regard, stating that an obvious recommendation is the allocation of more spectrum for operators in South Africa’s spectrum-constrained environment.⁴⁸⁷
- 473.10 Cell C, like other operators eager to access additional spectrum, agrees with the Provisional Report in terms of the prioritisation of the assignment of high demand spectrum to avoid any further delays in the process.⁴⁸⁸ Cell C supports the Provisional Report regarding the recommendation⁴⁸⁹ that ICASA should use the spectrum assignment process to impose pro-competitive obligations and licence conditions on operators.⁴⁹⁰ Additionally, Cell C agrees with the provisions in Annexure F of the Provisional Report on spectrum.⁴⁹¹
- 473.11 In terms of spectrum assignment, Telkom (like Cell C) also appears to approve of the Provisional Report’s recommendation that any new spectrum assigned to existing operators or the WOAN must be pro-competitive in its design and impact.⁴⁹² Telkom states that *“it would be preferable to first focus on assigning new spectrum according to the pro-competitive principles outlined in the report”*.⁴⁹³
- 473.12 Mr Walter Brown argued in his submission that the judicious allocation and assignment of spectrum (referring to the ‘Digital Dividend’ spectrum bands of 450MHz, 700MHz, and 800MHz) is long overdue and that this assignment can assist in extending the provision

of ICT services to the rural and poor in South Africa.⁴⁹⁴

474. Overall, the submissions received in response to the Inquiry’s Provisional Report appear to largely agree with the Commission’s provisional findings, where these agreements centre around the prioritisation of high demand spectrum and the current spectrum scarcity facing South African operators due to various delays in the urgent release of high demand spectrum assignment and the completion of the digital migration process. It seems to be common cause from submissions received that this scarcity of spectrum is likely raising costs to provide mobile broadband services, thereby contributing to high data prices in South Africa.
475. However, a number of criticisms, or alternative views, were also offered by stakeholders. These are summarised as follows:
- 475.1 SOS expressed concern that the Commission has given credence to the licensing of a WOAN provider and providing spectrum to the WOAN. SOS is firmly opposed to this on the following grounds: (i) there isn’t a sufficient basis for the model outlined in the 2015 recommendations of the ICT Policy Review Panel; (ii) such a licence would be incongruent with the existing horizontal licensing framework that supports the ECA; (iii) a WOAN in this form is untested, and not aligned with international best practice and research; (iv) work commissioned by the DTSP recommended against the creation of a WOAN; and (v) the planned provisions controlling the WOAN were primarily anti-competitive. In fact, SOS believes

486 DSMI Provisional Findings and Recommendations. 24 April 2019, p.90, para. 285.1

487 MTN response to the DSMI Provisional Report. 14 June 2019, p.5 (Non-Confidential)

488 Cell C’s submission, 14 June 2019, p.22 (Non-Confidential)

489 DSMI Provisional Findings and Recommendations. 24 April 2019. p.150, para. 493.8

490 Cell C’s submission, 14 June 2019, p.24 (Non-Confidential)

491 Cell C’s submission, 14 June 2019, p.24 (Non-Confidential)

492 DSMI Provisional Findings and Recommendations. 24 April 2019, p.150, para. 493.6

493 Telkom submission to DSMI Provisional Report. 14 June 2019, p.27, para.54.2 (Non-Confidential)

494 Walter Brown’s submission, 13 June 2019, p.14-15

- that the proposed WOAN will obstruct the reduction in data prices.⁴⁹⁵
- 475.2 Broadband Infraco (“BBI”) have argued that SOEs with statutory mandates to increase access to and affordability of wireless broadband services be granted preferential access to High Demand Spectrum. This would serve to improve internet access and possibly also help reduce mobile data prices since the beneficiaries will have alternative ways to access the internet.⁴⁹⁶ This will also support the DTPS’s desired SA Connect target of connecting 40,000 government facilities with at least 100 Mbps of capacity.⁴⁹⁷ To illustrate why MNOs cannot be relied on to provide spectrum access, BBI referenced a case in which a rural community-based network in the Eastern Cape, which had been operational for a number of years, approached a mobile network operator to share access to that operator’s allocation of 900MHz spectrum (it offered a better user experience than the 2.4GHz band the community-based network is using) but was refused.⁴⁹⁸
- 475.3 BBI has noted that another requirement for license allocation is that spectrum licence fees have to be proportionate to the expected ARPU operators can be expected to generate from users of the network. Annual spectrum licence fees for licensees providing services in rural communities should be zero or close to it. The reasoning is that input costs will be passed onto end-consumers and if this is not affordable, it will create a barrier to entry for licensees in rural or under-serviced communities.⁴⁹⁹
- 475.4 BBI notes that if high demand spectrum is prioritised for SOEs and is proportionate to the expected ARPU, BBI will not provide last mile services itself. Instead, Access Network Providers would buy wholesale wireless broadband capacity from BBI and then bundle it and on-sell it. BBI would continue to operate as a wholesaler of electronic communications network services with the addition of wireless broadband to its fibre-based offerings. It will attempt to ensure that cost savings from receiving zero or near zero spectrum fees are passed on to end users by Access Network Providers. These tariffs will be negotiated with and agreed to by ICASA.⁵⁰⁰
- 475.5 Afrihost is of the view that creating a new operator (in the form of a WOAN) [X]. [X].⁵⁰¹
- 475.6 On the recommendation by the Commission for spectrum allocation to be designed in a pro-competitive manner, Sutherland warned that this might end up in courts and be subject to lengthy litigation processes thereby resulting in considerable delays. He further submits that such *“might prove counterproductive, given the state of the three ‘challengers’.”*⁵⁰² Sutherland proposes that ICASA conduct a full assessment and publish tables of allocated spectrum, with comparisons with BRICS and SADC countries.
- 475.7 ICASA refers to a previous submission made by MTN where it stated that *“out of the six licensed mobile network operators not all of us are using the spectrum that the government gave us, there is a lot of inequality around the allocation of spectrum, some are*

495 SOS submission, 14 June 2019, p.9

496 Broadband Infraco’s submission, 7 May 2019, p.1-2

497 Broadband Infraco’s submission, 7 May 2019, p.1-2

498 Broadband Infraco’s submission, 7 May 2019, p.2

499 Broadband Infraco’s submission, 7 May 2019, p.3

500 Broadband Infraco’s submission, 7 May 2019, p.3

501 Afrihost’s submission, 14 June 2019, p.2 (Confidential)

502 Ewan Sutherland’s submission, p.12

siting and some people are starving on spectrum"⁵⁰³. ICASA submits that it is unclear which IMT (International Mobile Telecommunications) spectrum MTN alleges to be hoarded by some MNOs as ICASA is not aware of any spectrum that is presently sitting unutilised based on the submissions by various MNOs.⁵⁰⁴ ICASA, in this regard, also points the Commission to the Administrative Incentive Pricing (AIP) model introduced via the Radio Frequency Spectrum Fee Regulations, which ICASA published. The model discourages hoarding and encourages the use of licensed spectrum as well as requiring many big operators to "return huge chunks of unused spectrum".⁵⁰⁵

475.8 The main criticisms according to Vodacom regarding the Provisional Report's Section 5 relate to the Commission's purported failure to emphasise the link between spectrum, capacity and prices; the Commission's alleged notion that cost savings from additional spectrum can only be passed on to consumers if it forms part of the spectrum auction obligations; and the Commission's "unfounded" view that ICASA should consider imposing a pro-competitive asymmetry in the design of spectrum assignment. Vodacom views these stringent conditions or caps on larger operators as leading to worse consumer outcomes, namely higher prices, poorer quality and less competition.⁵⁰⁶ Vodacom at one point appears to state that the assignment of spectrum should be conducted on a non-discriminatory basis where all operators are treated equally in the

assignment process.⁵⁰⁷ Notwithstanding this, Vodacom, however, argues that more spectrum should be assigned to the largest and most constrained players. It notes that additional capacity may have the biggest impact on the pricing of the larger players, like Vodacom and MTN, as they are the most capacity constrained and will use the additional spectrum more efficiently.⁵⁰⁸

475.9 Thus Vodacom submits that ICASA should prioritise spectrum efficiency as its top objective when the regulator designs the future spectrum award and not impose a "pro-competitive asymmetry" as this would "...exclude the most efficient operators in the market".⁵⁰⁹ It notes that the efficiency objective for spectrum is often central to the award process as it minimises distortions to competition by assigning spectrum to those that can make the most productive use of it.⁵¹⁰

475.10 Vodacom disagrees with the Commission's apparent finding that price competition would need to improve for cost savings from additional spectrum to be passed on to consumers, as it states that cost savings can reach consumers even in monopolistic markets.⁵¹¹ In Vodacom's view, the evidence of strong competition in the sector means that a large part of cost savings would likely reach consumers as this 'pass-through' is greater in more competitive markets.⁵¹²

475.11 Furthermore, Vodacom does not agree that Telkom's current spectrum holding (whereby it lacks low-frequency spectrum) presents a constraint on its

503 Provisional report DSMI, para 274, p.86 (MTN's presentation at the public hearings held on 17-19 October 2018. See day 2 transcripts, p. 88).

504 ICASA response to the Provisional Findings Report of DSMI, 26 June 2019, p.8

505 ICASA response to the Provisional Findings Report of DSMI, 26 June 2019, p.8-9

506 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.92 (Non-Confidential)

507 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.93 (Non-Confidential)

508 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.93 (Non-Confidential)

509 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.110 (Non-Confidential)

510 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.109 (Non-Confidential)

511 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.108 (Non-Confidential)

512 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.108 (Non-Confidential)

(Telkom's) ability to compete. It also disagrees that a lack of contiguity in the 900MHz band is a constraint on Cell C. Vodacom also notes that the Commission's remedies that concern a WOAN (like mandated national roaming and MVNO access) are "both unprecedented and completely disproportionate".⁵¹³

475.12 MTN claims, in line with Vodacom, that the Commission's view on pro-competitive spectrum allocations does not recognise that in order for the spectrum allocation to have a great effect in lowering costs and benefitting consumers, the spectrum would need to be provided to the large operators that are currently the most spectrum constrained.⁵¹⁴ MTN argues that because the smaller MNOs are not as spectrum constrained as the larger players, the potential for cost decreases and efficiency benefits will only result from additional spectrum being allocated to the large operators.⁵¹⁵ MTN notes that the failure of regulatory authorities to allocate new spectrum to the existing operators has increased the capital expenditure required to expand network capacity in order to continue to meet the rapid growth in demand, as well as increasing network quality.⁵¹⁶

475.13 Additionally, MTN states that the Commission has not provided a proper comprehensive analysis of such an asymmetric assignment of spectrum or in respect of the additional spectrum conditions to be imposed.

475.14 MTN argues that a clear recommendation for the inquiry should be "the

allocation of more spectrum, and a more efficient and pro-competitive regulatory stance towards spectrum sharing and trading".⁵¹⁷ MTN argues that additional spectrum allocations could reduce unit costs through "trunking" efficiencies, where "larger amounts of spectrum applied to each technology causes additional efficiency gains."⁵¹⁸ MTN states that its own modelling has shown that average unit costs over a larger available capacity would [X].⁵¹⁹ Such effects should, according to MTN, discourage policy makers from the fragmentation of spectrum when allocating new spectrum.⁵²⁰

475.15 Telkom's main criticism regarding the Provisional Report's section on spectrum is that it views the report as unjustified in its view that spectrum currently assigned to MNOs that remains unused should be reassigned as the Commission has failed to address the unintended consequences of reassigning current spectrum holdings.⁵²¹ Linked to this, Telkom also state that the Commission has failed to define or measure what is meant by 'unused' spectrum.⁵²²

475.16 Cell C views it unlikely that a new entrant or WOAN will make the best use of high demand spectrum, particularly due to the need for current licensees to increase network capacity in order to meet rising data demand. Cell C, instead, views that a better recommendation would be to use wholesale access obligations on licensees (on reasonable terms) to be granted by dominant operators in return for high demand spectrum.⁵²³

513 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.115 (Non-Confidential)
 514 MTN response to the DSMI Provisional Report. 14 June 2019, p.55, para. 5.23.4-5.23.5 (Non-Confidential)
 515 MTN response to the DSMI Provisional Report. 14 June 2019, p.55, para. 5.23.5 (Non-Confidential)
 516 MTN response to the DSMI Provisional Report. 14 June 2019, p.55, para. 5.23.6 (Non-Confidential)
 517 MTN response to the DSMI Provisional Report. 14 June 2019, p. 5, para. 1.10 (Non-Confidential)
 518 MTN response to the DSMI Provisional Report. 14 June 2019, p. 61, para. 5.23.24 (Non-Confidential)
 519 MTN response to the DSMI Provisional Report. 14 June 2019, p. 61, para. 5.23.25 (Confidential)
 520 MTN response to the DSMI Provisional Report. 14 June 2019, p. 62, para. 5.23.26 (Non-Confidential)
 521 Telkom submission to DSMI Provisional Report. 14 June 2019, p.26. para. 54.1 (Non-Confidential)
 522 Telkom submission to DSMI Provisional Report. 14 June 2019, p.27. para. 54.1 (Non-Confidential)
 523 Cell C's submission, 14 June 2019, p.22-23, para. 6.4 (Non-Confidential)

475.17 Mr Walter Brown argued in his submission that certain “Digital Dividend” spectrum bands of 450MHz, 700MHz, and 800MHz ought to be dedicated to pro-poor ICT services as these spectrum are not required by the large mobile operators. The needs of these mobile operators to penetrate walls in “high-density high-income enclaves” are outweighed by the needs of the 30 million South Africans who have been excluded from the digital economy.⁵²⁴

6.3 COMMISSION’S RESPONSE IN RELATION TO SPECTRUM

476. Government has responded to the call for greater urgency in licensing the high demand spectrum with DTPS releasing the “Policy On High Demand Spectrum And Policy Direction On The Licensing Of A Wireless Open Access Network” which was released by the Minister of Communications in the Government Gazette on 26 July 2019⁵²⁵ (“the Policy Directive”) and a draft IM released by ICASA. As anticipated in the Provisional Report, the process around the draft IM in the context of the Policy Directive is really where the debate will now shift as it is one which is more in respect of detailed implementation rather than principles of broad policy. In other words, all stakeholders will now engage that process rather than continuing to debate the issues through this Inquiry.

477. The Commission has also responded to these policy developments with a lengthy submission to ICASA following the Policy Directive and prior to ICASA releasing its draft IM. This submission covered the Commission’s views regarding the principles on which ICASA should give effect to the Policy Directive. We have summarised the high-level principles as provided to ICASA below and the rest of the submission to ICASA is contained in

Appendix E. This submission did factor in our review of the submissions that were received to the Provisional Report. Much of this has made its way into ICASA’s draft Information Memorandum and therefore we only highlight what may be some additional challenges that ICASA may need to consider given recent developments in the industry in our final findings.

478. There is also little purpose served in engaging in some of the debates which are now somewhat moot, such as the need to urgently release spectrum and whether a WOAN is a desirable policy direction or not. As stated above, the WOAN is ultimately a policy decision which has been made and therefore our approach is to engage around how to ensure the success of the WOAN. However, it is still worth debating a few of the in-principle issues as they will continue to play out at the ICASA IM level. This includes whether the process should provide an asymmetric assignment to larger operators as put forward by MTN and Vodacom, or if it should rather impose caps and other measures to ensure a more pro-competitive assignment process as between existing smaller operators and larger ones. The additional in-principle issue as arising from the response to the Provisional Report is whether it is also necessary to impose obligations on operators to reduce prices in exchange for an assignment of spectrum.

6.3.1 THE ASYMMETRIC SPECTRUM ASSIGNMENT DEBATE

479. While there is agreement that more spectrum will reduce costs and expand capacity, there is a diversion of views on whether that assignment should favour larger operators or smaller operators, or be neutral. The key element to that debate is about the relative benefits of cost savings versus enhanced competition, both in the short-term and the longer term. This includes whether competition concerns or cost savings are the larger problem, the extent to which cost savings are passed

524 Walter Brown’s submission, 13 June 2019, p.15

525 Government Gazette Notice No. 42597, 26 July 2019

through given the state of competition, and then whether the assignment process can impact on competition, both positively or negatively.

479.1 Vodacom argues for an asymmetric assignment favoured towards the largest and most constrained players.⁵²⁶ Likewise, MTN also views an asymmetry in spectrum assignment that favours the larger operators as the better approach.⁵²⁷ The apparent basis for their views is that MTN and Vodacom will make the most efficient use of the spectrum, it will have the greatest impact on costs and therefore the greatest impact on consumers.

479.2 In contrast, the Provisional Report⁵²⁸ has argued that the allocation of additional spectrum should be premised primarily on enhancing competition over cost savings as this is the primary means for a reduction of prices. As such, a pro-competitive asymmetry that does not entrench the large operators' dominant positions in the market but instead enables challenger networks and new entrants to be competitive is preferred. For clarity, the Provisional Report did not state that the larger operators get no additional spectrum, but rather that the challenger operators are assigned relatively more spectrum than the larger players in order to facilitate competition in the market. This would include an assignment to the WOAN if that is the policy direction.

Competition is the bigger issue than costs

480. What is clear from the evidence cited above is that, when considering the causes of high prices for data in South Africa, it is the lack of competition in the market that

appears to be of the greatest impediment to lower prices for consumers. While there are indeed additional costs for operators that arise from additional spectrum not being assigned, the evidence provided by Vodacom in fact indicates that this has had a far more limited effect on their overall costs. The Commission's analysis of the impact of spectrum on prices in Appendix B indicates that the spectrum constraint facing Vodacom has only contributed [3<] to its total CAPEX and OPEX combined over a cumulative 7-year period.⁵²⁹

481. In contrast, the assessment above in Section 4.3.2 has shown that Vodacom South Africa's EBITDA margin for the year ended 31 March 2019 was a substantial 38.9%. The analysis also shows that there is a *prima facie* case for excessive pricing against Vodacom South Africa, earning revenue of about 20% - 25% over its operational and capital costs.⁵³⁰ Vodacom South Africa is the largest player with apparently significant pricing power. The analysis also shows MTN has market power and is able to price above the sum of both its operational and capital costs and thus it also faces limited competitive constraints. The weight of evidence clearly suggests that the primary concern for data prices in South Africa is the lack of competition in the market, not the cost impacts of spectrum. In other words, addressing competition provides larger scope for price declines to consumers than addressing costs from spectrum constraints. Of course, it is still preferable to achieve both which is why the Commission advocates that even larger operators get some spectrum.

Lower costs will also not be passed through

482. The principle behind the larger operators' view is that the static efficiencies would be highest with them given that they

526 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.93 (Non-Confidential)

527 MTN response to the DSMI Provisional Report. 14 June 2019. Page 55 (Non-Confidential), para 5.23.5.

528 DSMI Provisional Report, p.92, 150

529 When considered separately, Vodacom's CAPEX savings (if it had direct access to further spectrum) would be around just [3<] of its total CAPEX over the period 2012 - 2018, while its OPEX savings would be [3<] of its total OPEX over the 7-year period, as shown in Table 50.

530 Vodacom South Africa's average price-cost mark-up over a five-year period (FY2014 - FY2019), as shown in Table 17 above.

make 'greater use' of spectrum given the operators' greater national network coverage and their larger subscriber bases.

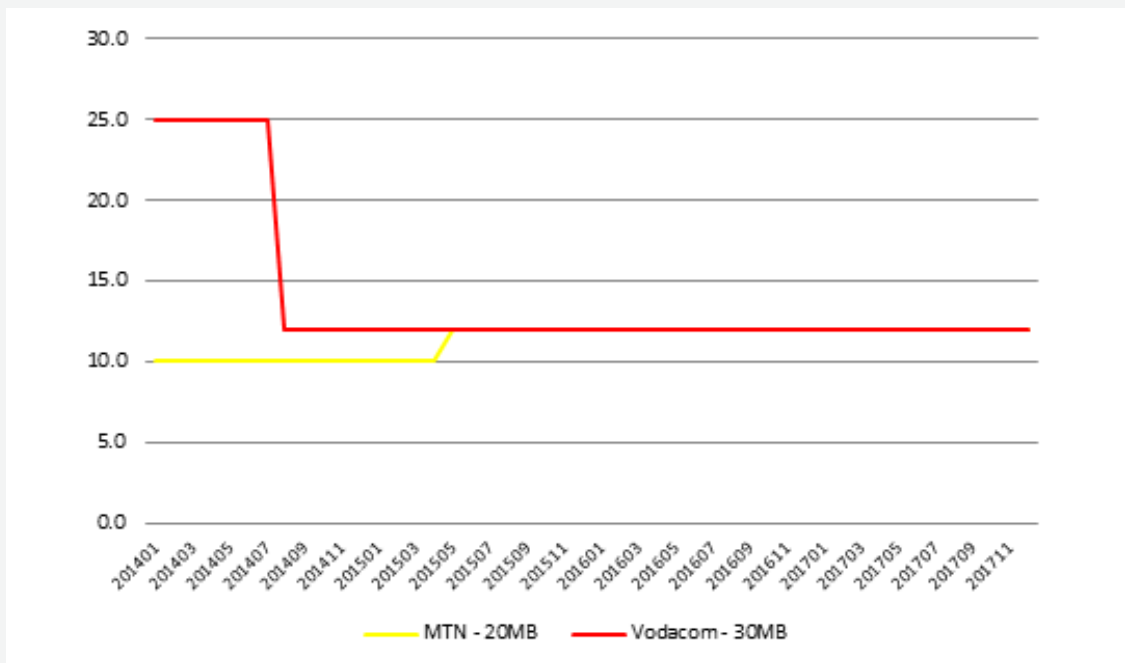
482.1 The first difficulty with this argument is that this effect, however, does rely on the pass-through of these operator efficiencies to consumers in the form of lower data prices. While we acknowledge that pass-through occurs even with monopolies, it is not apparent that pass-through will be sufficiently significant given that the large operators are clearly exercising market power and charging well in excess of costs in any event (as previously shown in the Commission's analysis on Vodacom and MTN's profitability measures). This is reflected above where the abnormal margins from market power are far higher than the potential cost savings from more spectrum. However, it is also reflected in the historical behaviour of the operators insofar as greater scale from growth in data volumes was not reflected in lower 30-day headline prices

as these have remained unchanged for the past five years as the figures below reflect.

482.2 The second difficulty with this argument is that the two largest operators already have lower unit costs due to the scale advantages in their networks. Therefore from an industry-wide perspective, average unit costs may actually decline more if assigned to the smaller networks. After all, static efficiencies are predicted on the current distribution of subscribers whilst this may change. In particular, if smaller networks are able to reduce their costs down towards those of the larger networks then they are more capable of drawing customers away from the larger operators which in turn will release capacity for the larger operators.

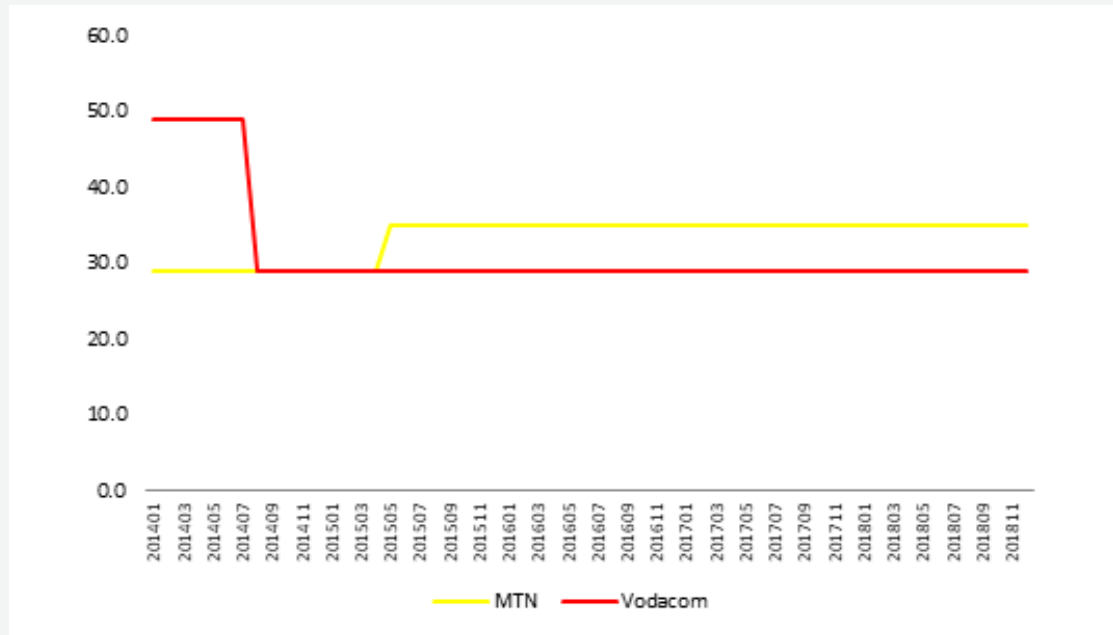
482.3 Thirdly, Vodacom and MTN fail to account for the fact that they will still receive some additional spectrum - so to the extent that static efficiencies are

Figure 69: 20-30MB prepaid bundles valid 1 month (in Rands) - MTN and Vodacom



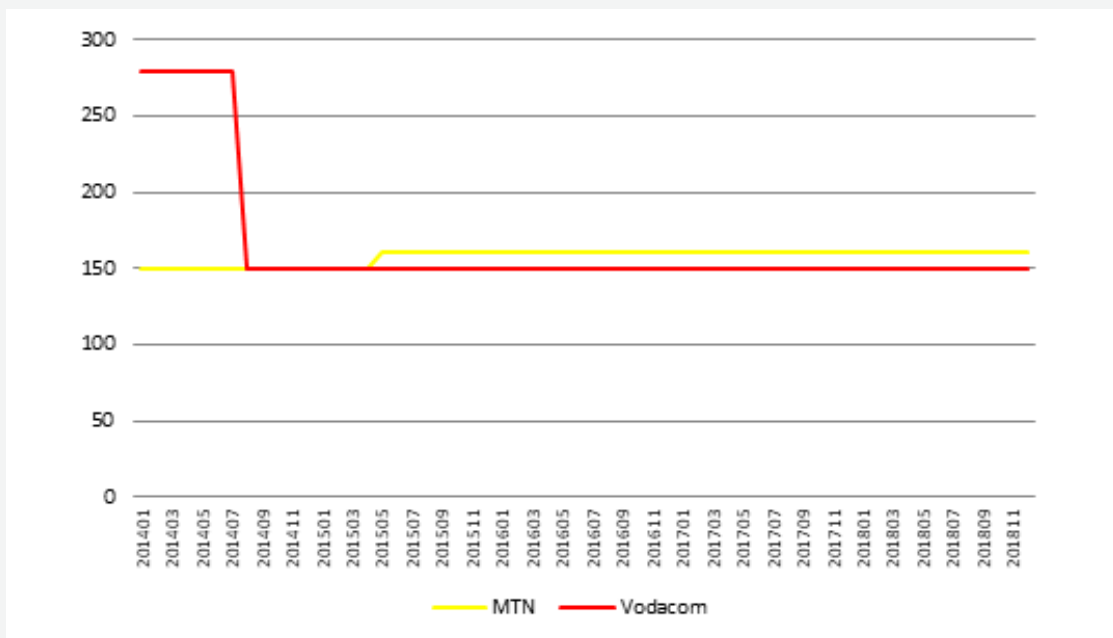
Source: Tarifica, operators' catalogues, websites and online sources

Figure 70: 100MB prepaid bundles valid 1 month (in Rands) - MTN and Vodacom



Source: Tarifica, operators' catalogues, websites and online sources

Figure 71: 1GB prepaid bundles valid 1 month (in Rands) - MTN and Vodacom



Source: Tarifica, operators' catalogues, websites and online sources

real, there will still be some pass through even if the assignment favoured the smaller operators.

The assignment can impact on competition

483. While Vodacom and MTN have both suggested that the Commission's proposed asymmetry in spectrum assignment is unfounded with unclear outcomes for competition or consumers, they both seem to at least accept that spectrum assignment can impact on the state of competition.

483.1 For instance, both operators have argued that Telkom has become a growing competitive influence in the market flowing from its higher relative spectrum holdings, which then increases its capacity, and this provides a comparative advantage.⁵³¹

483.2 Vodacom also states that *"...some degree of asymmetry in the position of operators can actually place greater competitive pressures on operators to improve their product offerings, compared to a situation where all the operators had similar positions"*.⁵³²

483.3 Furthermore, Vodacom submit a quote from the European Commission's assessment of the T-Mobile and Tele2 merger which also points to the competition benefits of spectrum being assigned in an asymmetric way, in that it quotes *"a spectrum asymmetry in and of itself does not necessarily lead to competition concerns, but might actually stimulate competition among MNOs with differently sized spectrum holdings, since improved services stemming from an enlarged spectrum portfolio could force competitors to in turn improve their offerings, thus stimulating competition"*.⁵³³

484. In a market that lacks competition and where smaller players struggle to constrain larger players (as in South Africa), a larger assignment of spectrum to the larger players will simply lock in their current market shares. In contrast, an asymmetric assignment to smaller players will even the playing field. Any approach, however, that does not improve competition will not be in the interest of consumers. Notably, even a symmetrical assignment of spectrum would lock in the current uncompetitive market structure and thus perpetuate unnecessarily high-price outcomes in future, negatively affecting consumers and benefitting the larger operators.

6.3.2 THE NEED FOR PRICE REDUCTION CONDITIONS

485. Vodacom and MTN have objected to the Provisional Report finding that any spectrum assignment be conditional upon a commitment to reduce prices. Both operators have suggested that a reduction in costs would create an incentive to reduce prices and so this is unnecessary. However, as the statements demonstrate, this is not unequivocal. MTN states that *"The additional capacity created by new spectrum allocations would be likely to lower costs, which would, all other things being equal, be expected to be passed on to consumers in the form of lower prices"*.⁵³⁴ Vodacom admits that *"...all operators in the market are likely to have the ability and incentive to reduce prices if they are able to add additional capacity through the assignment of additional spectrum"*.⁵³⁵

486. The Commission has attempted to test this with operators throughout the course of the Inquiry but there has been no sufficiently firm commitment to drop headline prices for key products such as the 1GB bundle once spectrum is assigned.

531 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.93 (Non-Confidential), and MTN response to the DSMI Provisional Report. 14 June 2019. p. 30 (para 4.7) and p.58 (para 5.23.10) (Non-Confidential).

532 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.100 (Non-Confidential)

533 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.111. (Non-Confidential)

534 MTN response to the DSMI Provisional Report. 14 June 2019. p. 364 (Non-Confidential).

535 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019. Page 93-94 (Non-Confidential)

- 486.1 The Commission previously requested Vodacom to confirm whether headline or effective prices will decrease when Vodacom is assigned high demand spectrum. In correspondence with Vodacom, it was not clear whether price decreases refer to headline prices or only effective prices. When pressed by the Commission in this regard, Vodacom stated that “[<]”.⁵³⁶
- 486.2 From these responses, Vodacom has not committed to decreasing headline prices once high demand spectrum is assigned but has conditioned this on the “[<]” which according to Vodacom will expand [<]” (emphasis added).⁵³⁷
487. As such, there is no certainty that customers will in fact see decreases in headline data prices once high demand spectrum is assigned. This is an important consideration of any assignment of spectrum. As shown above, the large operators have not reduced prices in line with costs and earn abnormal margins. In addition, the overall lack of movement in headline prices and gradual shift of consumers from 30-day products to lower-validity and restricted bundles is evidence of the market power of Vodacom and MTN and indicative of exploitative and anti-competitive behaviour.
488. Therefore, the Commission remains of the view that for the larger operators at least, there is still a need for any assignment of spectrum to be associated with a condition of price reductions in line with expected cost reductions (or full cost pass through to consumers). Where the Commission has moved in its position, is that it is unnecessary to impose such conditions on other operators. This is because the smaller networks in any event price lower already and will face pressure to pass through if the larger networks reduce prices. There is therefore no need for such conditions in the spectrum assignment process for smaller firms.

536 Vodacom’s communication to the Commission, 22 February 2019
537 Vodacom’s communication to the Commission, 22 February 2019

6.4 FINAL FINDINGS AND POLICY DIRECTION TO ICASA

489. Here we (i) summarise our findings in relation to spectrum and, (ii) we discuss the policy direction as issued to ICASA by DTSPS regarding high demand spectrum and our submissions to ICASA in this respect which speak to our findings and recommendations for the spectrum assignment process and the WOAN.

6.4.1 FINDINGS ON SPECTRUM

490. Given the findings of the Provisional Report, the assessment and response above with respect to the submissions received, our findings do not differ significantly from that of the Provisional Report. In light of this, our findings in relation to spectrum are summarised below.
491. It seems to be common cause that the failure to release high demand spectrum due to delays in digital migration amongst other issues has left mobile operators with both insufficient spectrum and a lack of access to favourable low frequency bands, raising costs unnecessarily. This is because operators need to compensate for the lack of spectrum through increasing the volume of base stations, raising capital and operational costs. In a similar manner, different frequency bands have different propagation qualities which may impact on the extent of capital expenditure required to service demand in different areas. Low frequency bands are more favourable for less populated areas as fewer base stations are required to achieve coverage, but they are also better at providing indoor coverage even in dense urban areas. Digital migration should free up precisely these lower frequency bands.
492. Despite calls for the rapid release of high demand spectrum, this process has been subject to considerable delay and litigation. This delay was in large part due to the need to clarify policy positions in respect of the

assignment of spectrum, including whether to support the introduction of a wholesale open access network (the WOAN) and whether existing operators would retain current spectrum and/or get access to unassigned high demand spectrum. However, after getting greater clarity as to the policy position there is a risk that the assignment process is once more delayed if digital migration itself does not proceed rapidly and the spectrum is not available for use even upon assignment.

493. Whilst the release of spectrum will reduce operator costs, the Commission finds that this will not necessarily result in headline price decreases unless there is sufficient competitive pressure on mobile operators to do so. Furthermore, the actual assignment of spectrum, both in terms of volume and frequency bands, itself has an impact on the extent of competition in that market. For instance, the lack of assignment in low frequency bands such as that faced by Telkom Mobile currently is likely to result in a cost disadvantage, which may restrict how aggressive it can be on pricing. Spectrum assignment therefore cannot simply be undertaken on the basis of revenue maximisation but must factor in how the assignment impacts on competitive forces if lower costs are to translate into lower prices. The assignment must therefore be pro-competitive in design.
494. Similar considerations arise in the context of the WOAN design. The purpose of the WOAN is to provide a wholesale network that may service a layer of new mobile virtual network operators (MVNOs) at the retail level in an effort to stimulate greater competition at this level. Originally, it was also designed to reduce infrastructure costs by promoting a single network layer, but that policy has subsequently been abandoned and rightly so. There are material competition concerns from creating a wholesale monopoly, from a pricing but also network quality & innovation perspective, and most of the cost-reduction gains can be achieved with

better facilities access regulation. However, even in its current conceptualisation the WOAN needs to be designed in a manner that is likely to make it an effective competitor if the MVNOs that make use of it are to exert some competitive constraint and grow at the retail level. This requires consideration of funding and business models, not just the technical assessment of spectrum assignment as undertaken by the CSIR. If the WOAN is to be operated by an existing vertically integrated operator, then the design considerations will need to include ensuring vertical separation and cost-orientated wholesale pricing.

6.4.2 POLICY DIRECTIVE TO ICASA

495. At the time the Provisional Report was published, the final policy direction of the Minister of Communications on high demand spectrum and the licensing of the WOAN had not yet been issued and while high-level findings and recommendations regarding spectrum were made (in particular the need to use the spectrum assignment process to improve competition and affordability), the Commission indicated that further views were to be formulated following the release of the awaited policy direction.
496. Post the release of the Provisional Report, the Minister of Communications subsequently issued the Policy Directive. This document includes a change to policy on high demand spectrum which is to supersede the White Paper to the extent that this differs with respect to the assignment of high demand spectrum.⁵³⁸ It also includes a direction to ICASA on the licensing of the WOAN. Moreover, the policy directive goes further and identifies factors that should or must be considered in the licensing process for both the WOAN and other licensees.
497. Subsequent to the release of the Policy Directive, the Commission provided views to ICASA on how to give effect to the Policy Directive. Therefore, in this sub-section, we detail the Commission's views as provided to

538 Government Gazette Notice No. 42597, 26 July 2019, para. 2.1.5

ICASA on the spectrum assignment process and Policy Directive given our previous findings as contained in the Provisional Report and submissions received in respect of those provisions findings and our thinking captured above.

498. The Policy Directive indicates that the policy decision is to support the development of a WOAN, and to engage in a simultaneous process of assigning spectrum to a WOAN and other licensees. The primary assignment directions in the Policy Directive can be summarised as follows:

498.1 *WOAN assignment:* The WOAN should receive preferential assignments in the 700, 800 and 2600 MHz bands given the existing spectrum holdings of other licensees. The licensing must consider universal access and service obligations, and incentives such as reduced spectrum fees, immediate facilities leasing from other licensees assigned spectrum and a 30% offtake agreement. The WOAN is to provide services on a non-discriminatory basis and ensure functional separation if the consortium provides services too. The WOAN applicant should have a viable business plan, technical capabilities and financial abilities, but also comply with certain ownership considerations.

498.2 *Other Licensees:* The assignment to other licensees should ensure that certain policy objectives are achieved, including no single entity controlling the spectrum, empowerment compliance, procurement of capacity in the WOAN, leasing of facilities and wholesale capacity to other licensees upon request and universal access and service obligations to ensure availability in rural and under-served areas.

499. The Commission notes that there is a broad alignment between the Policy Directive and the recommendations of the Provisional Report on spectrum, especially insofar as promoting competition and access over revenue generation is concerned. However, designing the actual assignment of

spectrum within this framework will present many challenges for ICASA. We highlight a few principles in this sub-section for such an assignment as provided to ICASA and more detailed observations on assignment challenges are contained in Appendix E.

499.1 ***Firstly, any WOAN licence needs to be sustainable and competitive.*** A key risk for the market is that the WOAN licence is awarded but the WOAN is ultimately not able to be competitive with the incumbents. This would waste scarce spectrum and compromise future regulation if it required compromises to sustain the WOAN. Special consideration needs to be given to the following:

499.1.1 A high threshold needs to be set in respect of the funding, business plan and infrastructure capabilities of the applicants. If no applicants meet the requirements, no award is likely to be a better option than a compromised award.

499.1.2 Preference may be given to existing ECNS licensees insofar as it may enable immediate service provision and a sustainable source of demand from existing retail or wholesale operations in addition to the 30% offtake requirement. However, that will require the functional separation as identified by the Policy Directive.

499.1.3 The wholesale arrangements such as facilities access and leasing, as well as interim roaming arrangements, will be critical to the competitiveness and success of the WOAN, more so if it is a new entrant.

499.2 ***Secondly, an innovative approach will be required for licensing the remaining spectrum.*** The current industry context suggests a typical lots system, with open bidding on a few lots, may not achieve the desired outcome. Therefore, ICASA should consider more innovative means

of licensing the remaining spectrum, including set-asides, multiple lot systems and reserve prices. In particular:

- 499.2.1 The weak financial position of Cell C is likely to prevent it bidding for spectrum or doing so competitively. This risks weakening the competitive position of Cell C. In addition, it implies that competition for spectrum is likely to be muted. This is amplified by the fact that Vodacom and MTN have substantial incumbency bidding advantages over all remaining potential rivals given their installed base enabling them to monetise the spectrum quickly.
- 499.2.2 Telkom Mobile's current lack of sub 1GHz spectrum relative to its rivals, and that band's importance to a competitive offering, creates a risk that competition may be weakened if it is unable to effectively compete for that band.
- 499.3 **Thirdly, the conditions placed on other licensees requires careful balancing of objectives and avoiding unintended consequences.** The directive to consider imposing requirements in respect of wholesale access, universal coverage and off-take requirements is intended to create beneficial competition and consumer effects. However, depending on how these requirements are implemented, they may result in the opposite outcome. In particular:
- 499.3.1 Coverage requirements may disadvantage challenger networks if their existing roaming and facilities access arrangements with incumbents threaten to delay their rollout and competitive use of spectrum. This may indicate asymmetric conditions are an option.
- 499.3.2 Conditions come with costs and therefore a balance between access and coverage need to be

considered. For instance, lower prices are more critical to access given existing coverage, and so high coverage requirements may reduce scope for price reductions.

- 499.3.3 The Policy Directive suggests off-take requirements appear to be determined by the proportion of spectrum assigned, however this may disadvantage smaller firms and new entrants. Take-off requirements should rather be linked to traffic volumes on the licensees required to procure off-take.
- 499.3.4 The directive to open up facilities leasing and wholesale capacity presents an opportunity to bring better oversight to these wholesale markets through conditions rather than lengthy regulatory processes. A potential side effect to consider is whether the beneficial opening up of wholesale access also denies the WOAN of a customer base, and in the process weakens it.
- 499.4 **Fourthly, consideration should be given to facilitating sub-national operators.** The localised provision of data services is more feasible than voice services given that only an ISP link is required, rather than a complex set of interconnection and roaming services. This opens the space for commercially viable sub-national and local community operators to offer competitive services. Consideration should be given to facilitating these operators through dynamic spectrum sharing, especially in rural areas where spectrum is underutilised due to roaming and coverage requirements only.

6.4.3 ICASA INFORMATION MEMORANDUM (IM)

500. The ICASA IM has incorporated a number of the recommendations from the Commission, including the imposition of cost-orientated facilities leasing on all

licensees of high demand spectrum, the imposition of spectrum caps (albeit that the level is not determined yet), the imposition of social obligations (albeit not specified as yet), the avoidance of too burdensome immediate coverage requirements initially to ensure challenger networks can also meet the targets, and the regulation of aspects of the WOAN such as non-discrimination. The Commission welcomes these provisional requirements for spectrum licensing and will continue to engage ICASA as the process unfolds.

501. However, ICASA still faces a number of challenges in implementing the IM.

501.1 The first challenge for ICASA is the current financial woes of Cell C which could remove it as a potential bidder for the lots. The implication is that outside of the WOAN set aside, the IM would then effectively offer a relative guarantee of the same spectrum to each of the likely three bidders, with a fourth parcel of TDD spectrum to one of them. This will not change the market structure, nor will it facilitate competitive bidding outcomes. Addressing this challenge will require ICASA to be flexible in how the lots are determined based on market developments.

501.2 The second challenge is implementing the WOAN assignment in a manner that secures a commercially viable consortium to make the WOAN a competitive force in the market, unless one of the current challenger networks seeks to secure that licence. The Commission engagements with ICASA have provided further recommendations in this regard.

502. The Commission will continue to engage the ICASA IM process with detailed submissions on specific issues, including how to resolve the challenges identified above.

6.5 SUMMARY OF PROVISIONAL FINDINGS ON FACILITIES ACCESS

503. In relation to facilities access, the Commission found in the Provisional Report that passive infrastructure such as base stations and high sites, as well as ducts and poles for fibre backhaul, are big cost components for operators. The Commission expressed a view that efforts to enhance facilities access and sharing can substantially reduce operating costs and ensure the rapid deployment of competing infrastructure, and potentially reduce prices. The Commission also critiqued regulations that existed at the time the Provisional Report was released for failing to address strategic behaviour by incumbents with a hold over a high proportion of facilities, namely that the regulations did not apply to all facilities (e.g. ducts and poles), they failed to adequately deal with spurious claims that sharing is technically infeasible (e.g. on base stations), and they also did not regulate the price at which sharing takes place resulting in cost escalation. The Amendment Bill in respect of the ECA seemed to plan on tackling this regulatory vacuum prior to its withdrawal from Parliament.

504. The Commission also expressed its reservations relating to the overall direction of the amendments, particularly in relation to potentially mandating the sharing of active infrastructure. In this regard, the Commission argued that active infrastructure sharing increases the risk of collusion given the closer collaboration and greater extent of information access that the arrangements require. In addition, active sharing may also inhibit beneficial infrastructure-led service competition if it means additions to quality or service innovations are immediately shared with rivals. The Commission therefore proposed that the direction taken should be facility-specific, weighing up the incremental benefits of moving to active sharing as against any risks to competition.

6.6 SUBMISSIONS IN RESPECT OF PROVISIONAL FINDINGS ON FACILITIES ACCESS

505. The Commission received a number of submissions relevant to the findings in the Provisional Report. Two submissions supported the Commission's provisional findings:

505.1 ICASA submits that it broadly agrees with the main cost drivers as identified by the Commission in its Provisional Report.⁵³⁹

505.2 Vodacom submits that it "[<]"⁵⁴⁰. Vodacom further argues that there is a long history of site sharing in South Africa and Vodacom has "[<]".⁵⁴¹ Vodacom also submits that it "[<]".⁵⁴²

506. However, a number of criticisms, or alternative views, were also offered by stakeholders. These are summarised as follows:

506.1 Telkom submits that it is not clear why the Commission is of the view that existing facilities leasing regulations do not apply to its ducts and poles⁵⁴³. In this regard, Telkom argues that "*the current facilities leasing regulations apply to electronic communications facilities*"⁵⁴⁴. Telkom further adds that "*Electronic communications facilities are clearly defined in the Electronic Communications Act 36 of 2005 ('ECA')...*"⁵⁴⁵

506.2 Telkom further argues that it is not clear what evidence the Commission relied upon in its conclusion that access to Telkom's ducts and poles would

significantly reduce the costs of fixed line infrastructure development.⁵⁴⁶ According to Telkom, "[...] over 90% of Vodacom's mobile site backhaul requirements are now self-provided, it is illogical in light of this fact to then claim that access to Telkom's ducts and poles would reduce Vodacom's mobile backhaul costs."⁵⁴⁷

506.3 Telkom also submits that "*if interventions aimed at improving access to mobile sites are introduced, they should not be limited to high sites only, but to any mobile site where demand for access exists and where it is technically feasible to provide such access. This should include potential sites on municipal properties.*"⁵⁴⁸

506.4 Cell C argues that there is a need to define and deal with essential facilities. According to Cell C, "*ICASA has not fulfilled the requirements of section 43(8) of the ECA which obliges it to 'prescribe a list of essential facilities' and a list of examples of essential facilities is given [...]*"⁵⁴⁹. Cell C further adds that if ICASA were to implement this statutory obligation, "*this would significantly improve the terms on which licensees could gain access to these facilities, and so would improve the wholesale access remedies proposed by the Commission.*"⁵⁵⁰

506.5 MTN argues that the four MNOs already have numerous infrastructure sharing agreements in place "*ranging from the numerous passive infrastructure sharing agreements between competing MNO's [...] to deeper facilities leasing*

539 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p6.

540 Vodacom's submission, 14 June 2019, p.115 (Confidential)

541 Vodacom's submission, 14 June 2019, p.115 (Confidential)

542 Vodacom's submission, 14 June 2019, p.115 (Confidential)

543 Telkom submission to DSMI Provisional Report. 14 June 2019. p. 27, para. 54.3 (Non-Confidential)

544 Telkom submission to DSMI Provisional Report. 14 June 2019. P. 27, para. 54.3 (Non-Confidential)

545 Telkom submission to DSMI Provisional Report. 14 June 2019. P. 27, para. 54.3 (Non-Confidential)

546 Telkom submission to DSMI Provisional Report. 14 June 2019. P. 28, para. 54.4 (Non-Confidential)

547 Telkom submission to DSMI Provisional Report. 14 June 2019. P. 28, para. 54.5 (Non-Confidential)

548 Telkom submission to DSMI Provisional Report. 14 June 2019. p. 28, para. 54.7 (Non-Confidential)

549 Cell C's submission, 14 June 2019. p.3, para. 2.1 (Non-Confidential)

550 Cell C's submission, 14 June 2019. p.4, para. 2.4 (Non-Confidential)

and roaming agreements such as the agreements between Vodacom and WBS/Rain.⁵⁵¹ MTN further argues that because the Commission did not provide evidence that MNOs do not share infrastructure, the Inquiry has no basis on which to consider that regulated access regimes would lead to any benefit.⁵⁵²

506.6 MTN is further of the view that the Commission failed to consider or even acknowledge *“that there is a trade-off between decreasing costs in the short term and the risk of the very likely harm to investment incentives in the long term that would be created by mandated access to infrastructure.”*⁵⁵³ MTN further adds that the Commission did not perform any necessary cost-benefit analysis of mandated access to infrastructure.⁵⁵⁴

506.7 Vodacom does not agree with the finding that the incumbent benefited from first mover advantage in relation to site access. In this regard, Vodacom submits that it *“does not share the view that there is a skewed distribution of site holdings as a result of first mover incumbency.”*⁵⁵⁵ Vodacom’s argument is on the basis that it has a relatively small fraction of the towers in the market, it had deployed just a small fraction of its sites at the time Cell C entered the market in 2011 and its 4G services were launched when both Cell C and Telkom were already in the market.⁵⁵⁶

506.8 Vodacom also argues that there is a long history of mobile sharing in South Africa and *“Vodacom has embraced mobile facility sharing with all operators,*

*including Cell C when it entered the market in 2001.”*⁵⁵⁷ Vodacom also submits that *“contrary to the view the CC expressed in its report, Vodacom does not have any exclusivity arrangements with the property owners that prohibit access seekers from sharing its structures.”*⁵⁵⁸ According to Vodacom, in some cases, property owners limit the number of access seekers on Vodacom structure due to security concerns and concerns leading to excessive traffic on the landlord’s premises. Vodacom further argues that in such instances, it has tried to find solutions to ensure sharing.⁵⁵⁹

506.9 Vodacom further submits that deep passive sharing is an important enabler for site sharing as this allows for sharing of power, transmission, cabinet space, cooling, antenna and backup power along with other passive network infrastructures.⁵⁶⁰

506.10 Mr Brown noted that there are various ways in which to further fibre optical broadband reticulation via the combined use of overhead pole routes owned by Eskom and other utilities, including Telkom. South Africa’s municipalities have built or intend to build broadband fibre capacity on high voltage power lines but it remains unattractive to serve the poor in this way. Numerous developing and developed countries including most Scandinavian countries and the United States and South Korea have successfully employed this model.⁵⁶¹

551 MTN’s submission, 14 June 2019. Page 67, para 5.27 (Non-Confidential)

552 MTN’s submission, 14 June 2019. Page 67, para 5.28 (Non-Confidential)

553 MTN’s submission, 14 June 2019. Page 67, para 5.29 (Non-Confidential)

554 MTN’s submission, 14 June 2019. Page 67, para 5.30 (Non-Confidential)

555 Vodacom’s submission, 14 June 2019, p.116 (Non-Confidential)

556 Vodacom’s submission, 14 June 2019, p.116 (Non-Confidential)

557 Vodacom’s submission, 14 June 2019, p.116 (Non-Confidential)

558 Vodacom’s submission, 14 June 2019, p.116 (Non-Confidential)

559 Vodacom’s submission, 14 June 2019, p.116 (Non-Confidential)

560 Vodacom’s submission, 14 June 2019, p.121 (Non-Confidential)

561 Walter Brown’s submission, 13 June 2019, p.15

6.7 COMMISSION'S RESPONSE IN RELATION TO FACILITIES ACCESS

507. The Commission has considered the submissions in respect of its analysis of and findings on facilities leasing. Broadly, the Commission finds that its findings pertaining to facilities leasing asset out in the Provisional Report are largely unaffected. In response to the Provisional Report, stakeholders have raised certain issues as summarised above. Accordingly, the Commission will categorise its response into three broad themes. Firstly, the Commission will address the perceived uncertainty regarding access to Telkom's duct and poles. Secondly, the Commission will address the need for ICASA to declare essential facilities. Lastly, the Commission will respond to the broad argument that the Commission had no basis to mandate regulated sharing regime. The Commission's response is set out as follows:

6.7.1 DUCT AND POLES AND THE LEGISLATION AND FACILITIES LEASING REGULATIONS

508. In the Provisional Report, the Commission stated that current regulations which mandate access to facilities but which do not necessarily clarify all facilities that are covered (such as ducts and poles) or seek to regulate the price of such access, are likely to be inadequate in order to prevent strategic behaviour by incumbents to deny or constructively deny access to those facilities.⁵⁶²

509. Telkom, in response to the Provisional Report, stated that duct and poles are already included in the Facilities Leasing Regulations. Considering this, the Commission requested ICASA to confirm if indeed duct and poles were included in the current Facilities Leasing Regulations. In its response, ICASA quoted Section 1 of the ECA which provides the definition for

an electronic communications facility. The relevant parts of Section 1 of the ECA are as follows:

"electronic communication facility" includes but not limited to any-

- a. *wire, including wiring in multi-tenant buildings*
- b.
- c.
.....
- j. *radio apparatus or other thing, Which can be used for, or in connection with, electronic communications, including Where applicable -*
 - i.
 - ii.
 - ii. *space on or within poles, ducts, cable trays, manholes, hand holds*⁵⁶³

510. According to ICASA, "in terms of this definition it is clear that a duct (and the space within it) is an electronic communication facility as defined".⁵⁶⁴ ICASA further added that The Facilities Leasing Regulations provide a framework in terms of which facilities leasing must occur and also provides for a dispute resolution mechanism.⁵⁶⁵ In ICASA's view, ducts are covered in terms of the ECA and Facilities Leasing Regulations.

511. Based on this, the current facilities leasing provisions would appear to apply to ducts and poles as argued by Telkom and confirmed by the sector regulator, ICASA. However, it is also clear that there is either uncertainty as to the coverage or in practice this is not being applied because complaints persist around access to ducts and poles. The Commission is also unaware of access being granted to the ducts and poles of Telkom, and if a company of the size of Vodacom is complaining then it suggests

562 Provisional report DSMI, para 300.2-300.3, p.95-96

563 Electronic Communications Act 2005. Gazette No 28743, Volume 490

564 See ICASA's email to the Commission dated 02 September 2019.

565 See ICASA's email to the Commission dated 02 September 2019.

there is an effective refusal to grant access.

512. Thus, the Commission finds some clarification of this issue would be useful, especially in terms of the regulations if the legislation indeed covers it. Furthermore, it would also be useful if there was some practical application of the facilities leasing arrangements in respect of ducts and poles in order to establish the practice. Furthermore, if practical access to ducts and poles requires defining them as essential facilities, as discussed next, then this should form part of the regulatory programme.

513. In terms of Telkom's assertion as to the limited benefit this will apparently provide to Vodacom given it allegedly self-provides to 90% of its high sites, this does not appear to be the perspective of Vodacom itself as it persists in its request for access. Furthermore, Telkom's response is mobile focused and ignores all other forms of broadband data service infrastructure such as FTTH. Duct and pole access would clearly be enormously beneficial in reducing the costs and accelerating rollout for FTTH. This is discussed later in the report under alternative infrastructure development.

6.7.2 THE NEED TO DEFINE ESSENTIAL FACILITIES

514. Cell C in response to the Provisional Report argued that ICASA needs to define essential facilities as required by the ECA. The Commission had previously requested ICASA to provide reasons why it has not defined essential facilities as required by the ECA. In its initial response, ICASA stated that *"Whilst a list of essential facilities has not been prescribed by the Authority as mandated by section 43(8) of the ECA, all requests for access to lease electronic communications facilities are regulated under section 43 as well as the Facilities Leasing Regulations of 2010"*.⁵⁶⁶

515. Considering this, the Commission requested ICASA to explain the benefits if ICASA prescribed a list of essential facilities

insofar as facilities sharing is concerned. In its response, ICASA stated that *"The ECA requires the Authority to prescribe a list of essential facilities. As to what the purpose of the list will serve, bearing in mind that electronic communications facilities leasing is an obligation, is not apparent. In addition, a request to lease "essential facilities" in terms of section 43(8) would also be subject to technical and economic feasibility. It would have been more efficient if the "essential facilities", once defined, would not be subject to the economic and technical feasibility requirement, hence the term "essential" ... this would have compelled the owner of the essential facility and the lessor to conclude a facilities leasing agreement on an expedited basis and also ensuring that there are no unnecessary delays and obstacles to accessibility of ICT services at affordable prices by consumers"*.⁵⁶⁷

516. From its submission, it appears that ICASA is of the view that defining essential facilities will not necessarily expedite the conclusion of facilities leasing agreements because, once defined, essential facilities would still be subject to the technical and economic feasibility requirements.

517. Essential facilities regulations remain an important part of the regulation of telecommunications markets globally and the opportunity for new entry and competition. It would appear from submissions and the constriction of the legislation itself that defining essential facilities and possibly amending the facilities leasing regulations would assist in giving access to key facilities, and even regulating them at cost-based rates. For instance, it is not clear to the Commission whether cost-based rates could only in practice be justified and applied to essential facilities under the ECA, or if that level of regulation could be applied to facilities leasing. The uncertainty is evident from section 47 of the ECA which provides that *"The Authority may prescribe regulations establishing a framework for*

566 ICASA submission to the Commission dated 04 October 2019

567 See ICASA's email to the Commission dated 02 September 2019

the establishment and implementation of wholesale rates applicable to specified types of electronic communications facilities and associated services taking into account the provisions of Chapter 10.⁵⁶⁸ (emphasis added). Such wholesale rate regulation may in practice only be feasible under chapter 10 if the facilities are essential, as opposed to possibly duplicated at a higher cost by the access seeker. Given the call by many parties and the Commission for cost-based pricing for facilities, this is an important consideration and one which suggests such facilities should be defined. The ICASA response is only in respect of current regulation but ignores the potential future regulation required.

518. Even to the extent that engaging in such a process merely reduces the time required for a new entrant or other firm to gain access to a key facility, then this work is worth doing. This will also be important for the amendments to the ECA in terms of how such access is defined. This can be an important part of reducing costs for industry players. While ICASA argues that access to essential facilities would still be subject to an economic and technical feasibility criterion, the work of developing the definitions of what constitutes an essential facility and expounding on the factors that might be considered in terms of economic or technical feasibility would assist the industry and the potential for entry and greater competition.
519. Beyond the current legislation and regulations, the amended ECA should account for the difficulties experienced in facilities leasing in South Africa thus far and the extent to which essential facilities may be defined in a more helpful and clear manner that encourages and simplifies entry but that is still fair to the facility owner and does not unnecessarily disincentivise investment. The extent to which certain essential facilities may not need to be subject to economic or technical feasibility

criteria should also be considered. The draft Bill for the amendment of the ECA certainly aimed to reform this area and thus this should again form part of the amendments.

6.7.3 THE NEED FOR FACILITIES SHARING REGULATION

520. MTN in its response to the Provisional Report has argued that because the Commission did not provide evidence that MNOs do not share infrastructure, the Commission had no basis on which to consider that regulated access regimes would lead to any benefit given the extensive history of facility sharing taking place in the market. Vodacom has also argued that there is an extensive history of mobile site sharing in South Africa but concurs with the Commission's view as contained in the Provisional Report that operators tend to engage in mutually beneficial agreements. The Commission had stated in the Provisional Report that *"indeed, operators themselves frequently seek to engage in mutually beneficial passive infrastructure sharing arrangements amongst each other in order to reduce operating or capital costs."*⁵⁶⁹
521. Many of the submissions, however, argued that regulated facilities leasing is necessary. There are broadly two reasons why it might be necessary. Firstly, the mere fact that infrastructure facility sharing is happening does not mean this is effective or being done on reasonable terms. MTN's implicit assertion that facilities access regulation is only needed when there is no facilities sharing taking place, fails to recognise the basic commercial realities of how the *price* and *conditions* of access affect the ability to compete and the commercial standing of the firm. MTN knows as well as any other player in the market that access to facilities is a repeated complaint from challenger operators, both in South Africa and globally. Secondly, facilities access is not just about the four operators, but also potential entrants to the market who may need effective facilities access in order to

568 Cell C submission (Non-confidential) dated 24 November 2017, p. 13 para. 4.2-4.3
569 Provisional Report (Non-confidential version), 24 April 2019, para. 297 p. 299

enter the market and may not be able to engage in the mutually beneficial sharing arrangement that dominate in the sector. The WOAN is just one example of such an entrant.

522. MTN and Vodacom have in any case argued that facilities leasing is already happening, so a regulated facility leasing regime would be unlikely to affect them negatively and thus there is no need for them to oppose it at a principle level. Although facilities leasing arrangements are currently governed by Chapter 8 of the Electronic Communications Act and ICASA's Facilities Leasing Regulations of 2010, stakeholders (such as Cell C) have previously argued that the current facilities leasing provisions are not optimal or fair:

522.1 The facilities leasing provisions only apply to ECNS licensees and non-ECNS licensees are not obliged to share facilities with MNOs⁵⁷⁰. This has affected facilities leasing negatively in two ways. Firstly, this has seen the emergence of tower companies which own and lease towers to companies and these companies do not comply with any facilities leasing regulations. Secondly, some facilities are owned and controlled by municipalities and SOEs like SANRAL and they are also not obliged to share their facilities to other MNOs as they are not within ICASA's jurisdiction.

522.2 Secondly, Cell C holds that the facilities leasing provisions do not include price regulation and are subject to commercial negotiations.⁵⁷¹ Telkom also confirmed that facilities leasing regulations do not include price regulation and are subject to commercial negotiations.⁵⁷² The owner of a facility, either an ECNS licensee or other party in control of an essential facility needed by another MNO can set whatever price they deem appropriate. This has seen the smaller

operators in some instances being charged higher prices for facility access as compared to the larger MNOs, according to the analysis conducted by the Commission based on the information provided by MNOs, and [X].⁵⁷³ As noted above, whilst section 47 of the ECA provides for some form of wholesale rate regulation, it is apparent that this may not apply to all facilities, or at least the same wholesale cost standard applied to different types of facilities. Therefore, if the essential facility designation is applied then there would be scope for wholesale rate regulation.

523. It would therefore appear that the current provisions for facilities leasing (as contained in Chapter 8 of the ECA and ICASA's Facilities Leasing Regulations of 2010) are not necessarily optimal. There is thus a need to amend these provisions in order to ensure that industry players have access to facilities at reasonable prices. Considering this, both the Facilities Leasing Regulations as well as Chapter 8 of the ECA would be more effective:

523.1 Firstly, if the facilities leasing provisions included price regulation provisions (on a cost-oriented basis) as getting access to facilities at the appropriate price is important as well. This would ensure that smaller MNOs or potential entrants are not charged higher prices as compared to larger MNOs because of uneven bargaining positions. Even if the cost standard was different for essential facilities as opposed to other facilities, this would still be a marked improvement on the current situation. In particular, if such regulation ensured non-discrimination and eliminated the discriminatory treatment of smaller operators.

570 Cell C's submission (Non-confidential), 24 November 2017, p.16

571 Cell C submission (Non-confidential) dated 24 November 2017, p. 13 para. 4.2-4.3

572 Telkom submission (Non-confidential) dated 17 November 2017, p.27, 32

573 Vodacom submission dated 07 August 2018 (Confidential); MTN submission dated 07 September 2018 (Confidential)

523.2 Secondly, facilities leasing regulations should apply to any owner of electronic communication facilities regardless of whether they are an ECNS licensee or not. This is because some facilities owners are not ECNS licensees and MNOs submit that they struggle to lease facilities from these owners at reasonable prices. ICASA should at a minimum have the power to regulate these providers and/or intervene in this aspect of the market.

524. The remedies can play an important role in reducing costs for industry players. Furthermore, the need for effective and cost-oriented facilities leasing arrangements will also be important as 5G rollouts may be prohibitively expensive in the absence of effective facilities leasing arrangements.

6.8 FINDINGS ON FACILITIES ACCESS

525. Given the findings of the Provisional Report, the assessment and response above with respect to the submissions received, our findings do not differ significantly from that of the Provisional Report. In light of this, our findings in relation to facilities leasing are summarised below.

526. Access to passive infrastructure, such as base stations and high sites, but also ducts and poles for fibre backhaul is another large cost driver faced by MNOs. Indeed, operators are engaging in mutually beneficial passive infrastructure sharing arrangements amongst each other in order to reduce operating or capital costs. There is also a legislative basis within the ECA for regulating facilities access and ICASA has put in place such regulations.

527. However, despite this, there remain persistent complaints around gaining access to facilities and doing so on fair commercial terms. Commercial models are typically successful where there is mutual benefit from bringing similar infrastructure to the table or agreement as to a mutual investment programme. Where there is

inequity in passive infrastructure holdings between operators, there is often a resistance to infrastructure sharing by the incumbent holder of more infrastructure facilities. This is because a denial of access, or strategies that amount to a constructive denial, provides an incumbent with a competitive advantage over a newer rival and such strategic behaviour may also slow the expansion and competitive significance of the new rival.

528. The critique of current regulations in relation to facilities leasing is that they fail to address strategic behaviour by incumbents with a hold over a high proportion of facilities, such as a fail to adequately deal with spurious claims that sharing is technically infeasible (e.g. on base stations), the regulations only apply to ECNS licensees, and also do not regulate the price at which sharing takes place resulting in cost escalation. The Amendment Bill in respect of the ECA seemed to plan on tackling this regulatory vacuum prior to its withdrawal from parliament. In particular, it sought to institute cost-orientated pricing for facilities under a broader wholesale open access regime, the regulatory rules to which ICASA would put in place within 18 months of the Amendment coming into law. Considering this, regulatory and legislative changes are needed and these are:

528.1 Firstly, there is a need to define essential facilities and possibly amend the Facilities Leasing Regulations, as this would assist in giving access to key facilities. Even to the extent that engaging in such a process merely reduces the time required for a new entrant or other firm to gain access to a key facility, then this work is worth doing. Albeit ICASA argues that access to essential facilities would still be subject to an economic and technical feasibility criterion, it is likely to be required for cost-based wholesale price regulation too and therefore has benefit given the call for price regulation. Furthermore, the work of developing the definitions of what constitutes an essential facility and

- expounding on the factors that might be considered in terms of economic or technical feasibility would assist entrants in securing access to such facilities.
- 528.2 Secondly, facilities leasing provisions (Facilities Leasing Regulations of 2010 as well as Chapter 8 of the ECA) should include price regulation provisions (at a cost-oriented basis) as getting access to facilities at the appropriate price is important as well. This may stipulate different cost standards for different facilities, such as cost-based for essential facilities and cost-orientated for facilities that would accelerate rollout and reduce costs, even if some unnecessary facilities or ancillary services remained on a commercial negotiation basis. In addition, this could even include principles such as non-discrimination, as this would ensure that smaller MNOs or potential entrants are not charged higher prices as compared to larger MNOs because of uneven bargaining positions.
- 528.3 Thirdly, facilities leasing provisions should apply to any owner of electronic communication facilities regardless of whether they are an ECNS licensee or not. This is because some facilities owners are not ECNS licensees and MNOs submit that they struggle to lease facilities from these owners at reasonable prices. ICASA should at a minimum have the power to regulate these providers and/or intervene in this aspect of the market.
- 528.4 Lastly, although the current facilities leasing provisions would appear to apply to ducts and poles, as argued by Telkom and confirmed by the sector regulator ICASA, there is clearly uncertainty over this (at the very least at a practical application level given the persistent calls for access by even larger competitors to Telkom). Thus, the Commission finds some clarification of this issue would be useful and also its status as an essential facility or not would be beneficial to determine.
529. The Commission reiterates its provisional position that it has some concerns in respect of potentially mandating active infrastructure sharing but does support the deep passive sharing. Therefore, to the extent there are legislative amendments then they should limit access on this basis.

7. MOBILE COMPETITION - WHOLESALE

7.1 SUMMARY OF PROVISIONAL FINDINGS

530. The Commission in the Provisional Report identified links between the insufficient competition at the retail level and some potential problems in the wholesale markets. The link is that the later entrants (and retail service providers such as MVNOs) generally rely on the wholesale supply of infrastructure and other services from first-mover operators in order to service their consumers. Whilst this provides challenger networks with some of the benefits acquired by the larger networks, the reality is that it is rarely in the interests of the larger networks to provide access, or to do so on fair and reasonable terms. Aside from facilities leasing discussed above, some areas where this is evident include the following:

530.1 Wholesale roaming arrangements are necessary for challenger networks to achieve national coverage whilst still rolling out their networks. The bargaining dynamics in respect of these arrangements clearly favours the first-mover networks as the only ones with national coverage, as there are not many outside options for the challenger networks. Evidence on historical agreements is consistent with these inequitable bargaining positions, with high minimum payments required, high marginal rates, poor roaming quality due to a lack of seamless handover and denial of roaming for new data technologies. The Commission found that unless roaming rates are more cost-orientated, price competition will be

constrained as more aggressive pricing by challengers will not be profitable if traffic occurs on the RAN network of the roaming provider.

530.2 In the area of MVNOs, the larger operators have largely not been active. Historically, Cell C emerged as the only supplier of MVNO services despite scope for all four networks to provide these services. Given the limited inclination of three networks to offer wholesale MVNO deals, MVNOs (both current and potential) largely rely on Cell C as a choice in their endeavours to operate as MVNOs. This is not the kind of market scenario which results in competitive pricing as MVNOs have no outside options. As a result, MVNOs remained marginal and niche players designed to retain the core customers of their parent companies (such as banks).

7.2 SUBMISSIONS IN RESPECT OF PROVISIONAL FINDINGS ON MVNOS

531. The Commission received a number of submissions relevant to the findings in the Provisional Report. For the most part, submissions supported the Commission's provisional findings:

531.1 SOS agrees that structural separation of data service providers be considered as an intervention, although only of "later resort". It submits that structural separation ought only to be used if other interventions fail to produce the desired outcomes.⁵⁷⁴

574 SOS submission, 14 June 2019, p.11

- 531.2 R2K also agrees that the wholesale and retail divisions of operators be structurally separated to encourage transparency regarding wholesale prices and potentially lead to open access in the long run which will in turn increase the level of competition and drive data prices down.⁵⁷⁵
- 531.3 [REDACTED].⁵⁷⁶ [REDACTED].⁵⁷⁷ [REDACTED].⁵⁷⁸ [REDACTED].⁵⁷⁹ [REDACTED].⁵⁸⁰
- 531.4 Afrihost holds the view that [REDACTED]. Afrihost conducted a [REDACTED]. [REDACTED].⁵⁸¹ Afrihost went on to [REDACTED].
- 531.5 ICASA agrees with the Commission's finding, as stated in the Provisional Report, that *"in South Africa only two networks, Vodacom and MTN, have national coverage. Thus, the provision of wholesale roaming services in South Africa is highly concentrated."*⁵⁸² It does, however, note that this status quo might change in the future due to non-exclusive roaming agreements such as the one between Rain (as a host network) and Vodacom as well as Liquid Telecom's open access 4G network to be launched soon.⁵⁸³
532. However, a number of criticisms, or contrary views, were also offered by stakeholders. These are summarised as follows (and then dealt with in more detail below):
- 532.1 [REDACTED], MTN and Vodacom critiqued the Provisional Report in relation to its findings that MVNOs are not a material feature of the South African market (they remain marginal niche players) and that this is linked to the larger MNOs' inability or lack of willingness to service MVNOs.
- 532.2 MTN has argued that the primary constraint to more vigorous wholesale competition is spectrum allocation to MTN and Vodacom as this would release capacity and heighten incentives to engage in wholesale competition.⁵⁸⁴ Thus the implication of MTN's argument is that there is insufficient capacity to accommodate MVNOs.
- 532.3 Vodacom suggests that the outcomes in South Africa are not unique to the South African market as MVNOs tend to play a marginal role worldwide, holding an average share of 4.6% of total wireless subscribers in December 2018. Vodacom also submits that MVNOs tend to be focused on niche customer segments which MNOs find difficult to reach. It supports this assertion by pointing to a study by Telegeography which shows that only 9.5% of 1,342 MVNOs that launched services over the 2006-2019 period targeted a broad set of customers while the rest specific customer segments.⁵⁸⁵
- 532.4 Vodacom adds that it has been willing to conclude wholesale arrangements with potential partners on a commercial basis in the past as evidenced by the numerous negotiations it had with potential MVNOs (it listed [REDACTED] engagements it has had with prospective MVNOs so far) [REDACTED].⁵⁸⁶ Nonetheless, Vodacom indicated it will remain open to these arrangements in the future.⁵⁸⁷ Vodacom added that it indirectly hosts MVNOs through its roaming agreement with Cell C and that it has a 'vibrant' reseller and branded reseller channel.⁵⁸⁸

575 The Right2Know Movement's submission, 14 June 2019, p. 7

576 Afrihost's submission, 14 June 2019, p.1 (Confidential)

577 Afrihost's submission, 14 June 2019, p.1-2 (Confidential)

578 Afrihost's submission, 14 June 2019, p.1-2 (Confidential)

579 Afrihost's submission, 14 June 2019, p.3 (Confidential)

580 Afrihost's submission, 14 June 2019, p.3 (Confidential)

581 Afrihost's submission, 14 June 2019 (Confidential)

582 DSMT Provisional Report, 24 April 2019, p. 126, para 408.

583 ICASA submission to the Commission dated 04 October 2019, p.11

584 MTN's submission, 14 June 2019, p.39 (Non-Confidential)

585 Vodacom's submission, 14 June 2019, p.166, 169 (Non-Confidential)

586 Vodacom's submission, 14 June 2019, p.157 (Confidential)

587 Vodacom's submission, 14 June 2019, p.165-168 (Non-Confidential)

588 Vodacom's submission, 14 June 2019, p.168-169 (Non-Confidential)

532.5 Furthermore, Vodacom submits that MNOs have incentives to grant access to MVNOs as this allows them to access additional market segments which they would otherwise struggle to access themselves. As such, MNOs can access additional wholesale revenues without compromising their position in the retail market. MVNOs, as Vodacom adds, are also an additional source of revenue (in the form of MVNO fees) for MNOs, hence there is competitive pressure to attract MVNOs to earn this extra revenue although the smaller MNOs such as Cell C commonly win this race because they are *“more aggressive in attracting MVNOs onto their networks.”*⁵⁸⁹ The competitive pressure arises because it is better for an MNO to earn revenue from MVNOs than to face competition from them anyway (if they get access from a competing MNO) but not receive wholesale revenue.

532.6 Lastly, Vodacom submits that South Africa compares better in terms of MVNO activity relative to other African countries as it had twenty (20) MVNOs over the period 2016 to 2019 compared to four (4) in Kenya and Senegal, and fewer in Cameroon, Rwanda, Uganda, Zimbabwe, Libya, Tanzania, and Tunisia. Using Telegeography data, Vodacom shows that over 15% of all consumers in Africa who use MVNO services are in South Africa compared to 10% of all mobile users.⁵⁹⁰

7.3 COMMISSION’S RESPONSE IN RELATION TO MVNOS

533. The Commission’s provisional findings on the dearth of competition from MVNOs has been met with criticism from both Vodacom and MTN. Vodacom argued that

MVNO activity in South Africa is not out of kilt with MVNO activity internationally and therefore the Commission should not be concerned.⁵⁹¹ In the case of MTN, it argued that had it not been for spectrum limitations, the MVNO space would have been more vibrant.⁵⁹² In this section, the Commission provides a general response to Vodacom and MTN’s criticisms which are contradicted by both evidence and in one instance their own previous submission.

534. Essentially, this section finds that: (i) contrary to the MNOs’ submissions, MVNO activity in South Africa is inadequate; (ii) promoting MVNO competition may be simpler than promoting additional MNOs and can deliver considerable benefits to consumers; (iii) spectrum constraints are not the only (or even primary) reason why MVNOs are not significant players in South Africa, and (iv) the WOAN will address the incentive problem hindering MVNOs’ access to mobile networks but if it is not implemented, alternative measures will be required. We deal with these issues below.

7.3.1 MVNO ACTIVITY IN SOUTH AFRICA IS INADEQUATE

535. Vodacom argued that MVNOs generally play a marginal and niche role in mobile markets across the world.⁵⁹³ The implication of this is that MVNOs are unlikely to be strong competitive constraints to MNOs in any event and so the Commission ought not to place particular emphasis on the fact that they constitute a small part of the mobile market. Notwithstanding this, it also argued that South Africa has a “dynamic MVNO market” given that it has many more MVNOs (20 MVNOs) compared to nine other countries in Africa (at most 4 MVNOs in each) including Kenya and Senegal.⁵⁹⁴

536. Even if other African countries are the most appropriate comparators for South

589 Vodacom’s submission, 14 June 2019, p.169 (Non-Confidential)

590 Vodacom’s submission, 14 June 2019, p.170 (Non-Confidential)

591 Vodacom’s submission, 14 June 2019, p.166, 169, 170 (Non-Confidential)

592 MTN’s submission, 14 June 2019, p.39 (Non-Confidential)

593 Vodacom’s submission, 14 June 2019, p. 169 (Non-Confidential)

594 These countries are Kenya, Senegal, Cameroon, Reunion, Uganda, Zimbabwe, Libya, Tanzania, and Tunisia. Source: Vodacom’s submission, 14 June 2019, p.170

Africa⁵⁹⁵, the evidence that there are fewer MVNOs in nine African countries does not conclusively show that South Africa has a “dynamic MVNO market”.⁵⁹⁶ Firstly, only nine countries in Africa have been used as a basis for comparison. Secondly, the number of MVNOs in a country provides little information on the ability of MVNOs to be effective competitors. For example, even though there are fewer MVNOs in Kenya and Senegal than in South Africa, MVNOs in fact comprise a much higher share of total subscribers in those countries than in South Africa, where this percentage is just 1.9%. Senegal has an MVNO subscriber share of 15.8% and Kenya has an MVNO share of 14.8%.

537. Vodacom inferred that MVNOs play a marginal role worldwide based on an average share of total wireless subscribers (of 4.6%)⁵⁹⁷. Inferring this on the basis of a worldwide average is misleading as these mask instances in which MVNOs play a significantly larger role than in South Africa. Based on the Telegeography data provided by Vodacom, the average share of MVNO subscribers of total subscribers in December 2018 was 14.2% in the US & Canada and 11.0% in Western Europe.⁵⁹⁸ Furthermore, MVNOs make up at least 9% of the mobile market in 29 countries. These include 14 Western European countries⁵⁹⁹, 3 North, Central and South American countries⁶⁰⁰,

6 Asia and Pacific countries⁶⁰¹, 2 Middle Eastern countries⁶⁰², 2 Eastern European countries⁶⁰³, and 2 African countries⁶⁰⁴. These examples suggest that, in many countries, MVNOs represent a significant portion of the market and therefore have the potential to be much more significant players in the South African market than what Vodacom suggests.

538. It is because MVNOs face challenges in many countries outside of Western Europe and the US and Canada that subscriber shares are lower there. According to Red Dawn Consulting in its submission to the Commerce Commission of New Zealand, there are “regulatory challenges” in Asia Pacific, where the share of MVNO connections was just 3.5% on average in 2018.⁶⁰⁵ In the Middle East and North Africa (1.2%), Sub-Saharan Africa (1.1%), and Latin America (1.8%) mobile markets are, according to Red Dawn, “less mature” so MNOs prioritise their own customer acquisitions.⁶⁰⁶ Further challenges include high start-up costs relative to expected returns, the lack of support from telecommunications regulators and limited expertise with regard to launching MVNOs.⁶⁰⁷ The Commission did not receive any submission suggesting that these challenges prevail in South Africa, but evidence at our disposal shows that there is lack of support from MNOs as we discuss further below.

595 In the public hearings, the CEO of Vodacom noted: “I don’t think we should be comparing ourselves to just the best in Africa, but we should be comparing ourselves to the best in the world” Source: Vodacom’s presentation at the public hearings held on 17-19 October 2018. See Day 2 Transcript p.36

596 Vodacom’s submission, 14 June 2019, p.170 (Non-Confidential)

597 Vodacom’s submission, 14 June 2019, p.169 (Non-Confidential)

598 Telegeography data

599 These countries are Austria, Belgium, Denmark, France, Germany, Greenland, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom

600 These countries are Canada, Puerto Rico, and the US

601 These countries are Australia, Fiji, Hong Kong, Japan, Malaysia, and South Korea

602 These countries are Oman and Saudi Arabia

603 These countries are Kosovo and The Czech Republic

604 These countries are Kenya and Senegal

605 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.21-22

606 This information was based on World Bank, World Trade Organisation, and regional data. Source: Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.21-22. Based on Telegeography data sent by Vodacom, MVNO subscriber shares are similar. They are on average 0.7% in Africa, 2.5% in Asia and Pacific, 2.8% in Eastern Europe, 0.9% in Latin America and the Caribbean, and 3.8% in the Middle East

607 This information was based on World Bank, World Trade Organisation, and regional data. Source: Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.21-22

539. According to Red Dawn Consulting, there are broadly eight customer segments that have driven the growth of MVNOs across the world, namely the discount, specialist data⁶⁰⁸, retail⁶⁰⁹, ethnic⁶¹⁰, business⁶¹¹, international/roaming⁶¹², youth/media⁶¹³, bundled⁶¹⁴, and other⁶¹⁵ segments.⁶¹⁶ Although most MVNOs target customer segments that MNOs find difficult to reach, MVNOs do not necessarily have to be 'niche' players. The biggest category of MVNOs worldwide is in fact the discount segment, representing 22% of MVNOs.⁶¹⁷ These MVNOs offer relatively lower prices than competitors, with their success largely depending on having low distribution costs and economies of scale.⁶¹⁸ According to Lee et al (2008), in markets with more regulation protecting MVNO access to networks (such as in Europe), cost leadership in the form

of discount MVNOs appears to work more effectively.⁶¹⁹

540. The remainder of MVNOs tend to be niche in that they focus on only a subset of the population which MNOs find difficult to reach.⁶²⁰ This is the case because MVNOs need to convince MNOs on whose network they wish to roam that they will not cannibalise their customers. According to Dewenter and Haucap (2007), MNOs will voluntarily provide network access if they offer sufficiently differentiated services in order that the access fees obtained are not outweighed by the cannibalisation of sales.⁶²¹ Lee et al (2008) argue that differentiation by MVNOs may be needed when there are less supportive regulations and MVNOs have to rely on negotiation.⁶²²

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- 608 Specialist data MVNOs are companies offering data for specialist services such as financial services, digital entertainment services, virtual assistants and health equipment providers. An example is Google Fi. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.23
- 609 Retail MVNOs are typically launched as a supermarket chain sponsored mobile brand, allowing the bundling of mobile services with grocery shopping. An example is Asda Supermarket's Asda Mobile. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.23
- 610 Ethnic MVNOs target specific immigrant populations, offering them competitive rates to countries in which they have friends and family. Examples of these include Lycamobile and Lebara. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.23
- 611 Business MVNOs target SMEs. They are able to offer bespoke services like security, roaming and tracking. Examples include Coriolis in France and Gamma in the UK. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.24
- 612 International MVNOs innovate to get customers cheaper rates or simpler travel logistics. An example is Truphone, which allows customers to store several international numbers on one SIM card so that they can use local rates when they travel. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.24
- 613 Youth/media MVNOs target the needs of the younger generation by offering services like in-house digital content, partnerships with streaming services, and/or zero-rated social media and digital content. An example includes Virgin Mobile. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.24
- 614 Bundled MVNOs typically target households who wish to save on price and effort by being billed by one provider for their mobile, landline, broadband, TV, and/or energy and utility needs. An example is Vocus in New Zealand. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.24
- 615 Other MVNOs include MVNOs offering data only, charity, device, freemium/ad-funded, the elderly (e.g. Age UK), high-value subscribers, telecoms, multi-segments and emerging segments. Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.24
- 616 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.22-25
- 617 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.23
- 618 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.23
- 619 Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10, p.15
- 620 Specialist data represents 11% of MVNOs, retail 17%, ethnic 12%, business 11%, international roaming 8%, youth/media 5%, and bundled 4%. Source: Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.23-24
- 621 Deventer, R & Haucap, J. 2007, "Incentives to license virtual mobile network operators" in Deventer & Haucap (Eds.) *Accessing pricing: Theory and practice* (p. 305-325) Oxford England: Elsevier. Referenced in Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10, p.14
- 622 Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10, p.15

541. It is common cause between the Commission and Vodacom that MVNOs currently mostly serve niche customer segments in South Africa.⁶²³ It is the Commission's view that this occurs because otherwise MVNOs would risk cannibalising the sales of MNOs, which would make it difficult for them to make a case for roaming on MNOs' networks. This is in line with the Commission's findings in its Provisional Report, where it argued that MNOs "*face a disincentive to open up their wholesale networks to new entrants at the retail/services level*" due to the risk of "*having its own customers cannibalised*".⁶²⁴ Having a more supportive regulatory environment in South Africa may result in more discount MVNOs, which have broader appeal than 'niche' MVNOs.

542. Furthermore, 'niche' segments, both together and separately, need not be minor competitors, as they are in South Africa at present. FNB Mobile in South Africa is only available to FNB customers in South Africa. FNB showed in its latest interim results (December 2018) that its banking customer base was 8.2 million people (14.2% of the entire South African population).⁶²⁵ Similarly, Standard Bank had an active banking customer base of 8.7 million people at the end of December 2018.⁶²⁶ There is thus potential for both FNB Mobile and Standard Bank Mobile to serve large segments of the South African population should they be given the opportunity to compete on an equal or similar footing to MNOs.⁶²⁷ Similarly, Mr Price Cellular, which forms part of the discount clothing retailer Mr Price, is available to anyone living in South Africa, either via its 216 physical locations or its centralised call centre.⁶²⁸

543. [X]⁶²⁹, the Commission understands that MTN has entered into wholesale arrangements with the Huge Group ("Huge") and Axxess. Huge has partnered with MTN to provide GSM voice services to its subsidiary companies.⁶³⁰ Axxess sells MTN mobile data in addition to Telkom fixed LTE and thus amounts to a branded reseller. Afrihost is a reseller of MTN voice packages but has an arrangement that it claims is closer to that of a light MVNO for data where it utilises an APN service provided by MTN.⁶³¹

544. The Commission is unconvinced by the arguments of Vodacom that MVNOs in South Africa are not smaller or more niche than MVNOs in other countries around the world and therefore we need not be concerned about their small presence in South Africa. Our view is still that MVNO activity in South Africa can be more significant than what it currently is. There is scope for 'niche' MVNOs to grow. Furthermore, if regulations become more supportive in the future, there may be greater opportunity for a large discount MVNO segment to develop.

7.3.2 PROMOTING COMPETITION FROM MVNOS MAY BE SIMPLER THAN PROMOTING ADDITIONAL MNOS AND CAN DELIVER CONSIDERABLE BENEFIT TO CONSUMERS

545. The Commission's view is that promoting competition from MVNOs may be easier, or more effective, than promoting more competition from additional MNOs. Because spectrum is a scarce resource, it may be more difficult for mobile markets to sustain a large number of MNOs.⁶³² In addition, MNO entry requires large capital investments, which may serve as a deterrent

623 Vodacom's submission, 14 June 2019, p.169-170 (Non-Confidential)

624 DSMI Provisional Report. 14 June 2019. para. 445 (Non-Confidential)

625 FNB's interim results, December 2018, p. 12

626 Standard Bank's interim results, June 2019, p.28

627 "FNB delivers strong interim revenue and customer growth", in *FA News*, <https://www.fanews.co.za/article/banking/35/general/1223/fnb-delivers-strong-interim-revenue-and-customer-growth/26355>

628 Mr Price's Annual Integrated Report year ended 30 March 2019, p.45

629 MTN's submission on 31 July 2018, para. 20.1

630 Mcleod, D. (2019) "Huge Group partners with MTN following Cell C dispute", in *Techcentral*, <https://techcentral.co.za/huge-group-partners-with-mtn-following-cell-c-dispute/94144/>

631 Afrihost's submission on 8 August 2018, para. 2

632 MTN showed that there are between three and four mobile network operators in China, New Zealand, South Korea, Germany, and Argentina. Source: MTNs submission, 14 June 2019, p.57. Table 10 (Non-Confidential)

to potential entrants. In contrast, MVNOs don't require spectrum assignments⁶³³, their CAPEX requirements are significantly lower than those of MNOs⁶³⁴, and promoting them will not result in the duplication of RAN sites. Neither Vodacom nor MTN argued against the Commission's view as set out in the Provisional Report that entry at a retail level should be much easier than at the wholesale level.⁶³⁵

546. This view appears to be in line with the ICT Policy White Paper and subsequent approach taken by the DTPS and the Minister of Communications. In line with the ICT Policy White Paper, the Minister of Communications signalled in the Policy Directive that spectrum will be assigned to a Wholesale Open Access Network ("WOAN")⁶³⁶ which we understand will provide access to MVNOs. The ICASA draft IM on the spectrum assignment currently also incorporates an additional requirement for licensees of high demand spectrum to conclude deals with at least three MVNOs. This suggests that both the DTPS and ICASA believe that promoting greater retail competition can be fruitful.
547. Evidence from Europe suggests that promoting MVNOs may have benefits for competition and pricing outcomes for consumers. MVNO activity in Europe has been cited as having contributed to a reduction in ARPU of 7% on average per annum over three years to Q3 2014.⁶³⁷ Regulations obliging MNOs to open up their networks to MVNOs were also cited as

having contributed to a fall in prices of up to 25% in other European countries by the Irish communications regulator, ComReg.⁶³⁸

548. Another compelling reason for promoting MVNOs is that MVNOs are known for service innovation and product differentiation⁶³⁹, outcomes which both Vodacom and MTN have argued previously are good for consumers.⁶⁴⁰ For example, they are able to bundle mobile data services with other services such as fixed-line services, entertainment content and even electricity.⁶⁴¹ They can also offer more flexible tariff arrangements to the customer segments they serve compared to MNOs and can offer greater customer care, for example by offering customer support in different languages.⁶⁴²

7.3.3 SPECTRUM CONSTRAINTS ARE NOT THE PRIMARY DETERRENT TO MVNO PROGRESS IN SOUTH AFRICA

549. Both Vodacom and MTN have suggested that having to deal with spectrum constraints is the reason why they had not provided network access to MVNOs in the past. [3<].⁶⁴³ The Commission's view is that although the lack of spectrum may constrain the ability of MNOs to offer MVNOs access to some degree, this is not the primary reason why MVNOs have historically been denied access by Vodacom and MTN over the twenty-five years in which they have been operational. Instead, and contrary to the claim of Vodacom that "vertically integrated MNOs do have strong economic

633 Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10, p.1

634 Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10, p.1

635 DSMI Provisional Report, p.188, para 444 (Non-Confidential)

636 Department of Communications, 26 July 2019, Policy on High Demand Spectrum and Policy Direction on the Licensing of a Wireless Open Access Network

637 GSMA Intelligence, February 2015, "The Global MVNO footprint: a changing environment", p.2

638 Irishtimes, 9 December 2004, ComReg opens mobile networks to competition, available at: <https://www.irishtimes.com/news/comreg-opens-mobile-networks-to-competition-1.996441> [Accessed 8 August 2019]

639 Commerce Commission of New Zealand, 16 May 2019, Mobile Market Study - Preliminary Findings, p. 67

640 MTN's submission, 14 June 2019, para. 4.39, 5.15 (Non-Confidential); Vodacom's submission, 14 June 2019, p.94, 126, 165, 169, 171, 182 (Non-Confidential)

641 Commerce Commission of New Zealand, 16 May 2019, Mobile Market Study - Preliminary Findings, p. 68; MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.25-26

642 MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.25; Commerce Commission of New Zealand, 16 May 2019, Mobile Market Study - Preliminary Findings, p. 67

643 Vodacom's submission, 7 August 2018, Para 30.1-30.3, 46.2.2, 46.3 (Confidential); Vodacom's submission 14 June 2019, p.166 (Non-Confidential); MTN's submission, 14 June 2019, para. 4.34 (Non-Confidential)

incentives to partner with MVNOs⁶⁴⁴, there is a strong incentive for MNOs to deny access to MVNOs, due to the risk of sales cannibalisation.

550. Vodacom has argued that there is a strong incentive for MNOs to partner with MVNOs since they can earn additional revenues and because MVNOs target niche segments, they will not compromise the position of MNOs in the market.⁶⁴⁵ Although the Commission does not dispute that MNOs could obtain revenue from granting MVNOs access to their networks and agrees that MVNOs in South Africa currently serve 'niche' customer segments (although as discussed above, these can be broad reaching), the literature on this suggests that MNOs face strong incentives to limit or deny such access.⁶⁴⁶ This is because an MNO considering granting access to an MVNO may be concerned that (a) it will cannibalise its sales⁶⁴⁷ and (b) it will degrade its network quality to such an extent that its network will no longer be attractive to its own customers.⁶⁴⁸
551. The importance of MVNOs for mobile competition as well as the inclination of MNOs to refuse them access (or essentially refusing access by offering untenable terms) has been recognised by regulators across the world. As a result, many have intervened in a myriad of ways to promote MVNO access to MNO networks including (a) imposing conditions in mergers between MNOs, (b) imposing conditions for spectrum licensing, (c) directly regulating MVNO access, and (d) releasing guidelines for MVNO access. A number of examples of these interventions are listed in Appendix C.
552. Despite not hosting any MVNOs on its network, Vodacom in its recent submission indicated that it had been open to concluding deals with MVNOs on commercial terms in the past but had been unsuccessful for reasons listed in Section 7.2 above. In a previous submission however, Vodacom had specifically noted that [X].⁶⁴⁹ Contrary to Vodacom's claim that it has been open to concluding deals with MVNOs in the past, the aforementioned suggests that it is unlikely that the terms presented to the [X] MVNOs with which it engaged would have been attractive.⁶⁵⁰
553. The very fact that Vodacom and MTN have argued that an expansion in spectrum would allow them to provide network access to MVNOs suggests that they think of it as a second option. They will only host MVNOs if there is extra capacity. This reveals their attitude to MVNOs, which is that they would prefer to use their capacity for their own operations rather than host MVNOs.
554. Although the two dominant operators are spectrum constrained at present, they have not always been spectrum constrained. Even when they had extra capacity, they did not host MVNOs on their networks, supporting the Commission's view that spectrum constraints are not the only, or even primary, reason for them not having granted MVNOs network access in the past. Vodacom previously presented total spectrum holdings per 100 000 customers to show that it is relatively spectrum constrained.⁶⁵¹ Below, we present estimates of spectrum per 100,000 customers for several years in the past compared to the most recent financial year. This is analogous to Figure 84

644 Vodacom's submission 14 June 2019, p.166 (Non-Confidential)

645 Vodacom's submission, 14 June 2019, p.170 (Non-Confidential)

646 Deventer, R & Haucap, J. 2007, "Incentives to license virtual mobile network operators" in Deventer & Hacap (Eds.) *Assessing pricing: Theory and practice* (p. 305-325) Oxford England: Elsevier. Referenced in Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10, p.15

647 Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10, p.14; Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.9

648 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.9

649 Vodacom's submission, 7 August 2018, p.33 (Confidential)

650 Vodacom's submission, 14 June 2019, p.165-168 (Non-Confidential)

651 Vodacom's submission, 30 November 2017, p.14, para. 2.4 (Non-Confidential)

Table 38: Estimates of spectrum per 100 000 customers

	2002/2003	2005/2006	2008/2009	2011/2012	2018/19
Vodacom	1.0	0.4	0.3	0.3	0.2
MTN	2.2	0.8	0.5	0.4	0.3
Cell C					0.4
Telkom Mobile					1.7

Sources: (i) Spectrum holdings: Telkom's submission dated 17 November 2017 (Non-Confidential version), p. 30, Table 7; (ii) Customers: Vodacom, MTN, Cell C and Telkom annual reports

Notes: (i) Vodacom also had access to RAIN's spectrum in 2018/19, which would result in an underestimation of its spectrum-to-customer ratio; (ii) Vodacom's financial year end is 31 March; MTN's financial year end is 31 December; Cell C's financial year end is 31 December; and Telkom's financial year end is 31 March; (iii) The ratio based on subscriber numbers for Cell C includes subscribers on MVNO networks that use its network.

in Vodacom's submission in response to the Provisional Report.⁶⁵² Note that in 2018/19, Vodacom had access to RAIN's spectrum, which has not been included in the table. This would lead to an underestimation of Vodacom's spectrum-to-customer ratio, which would put it closer to that of Cell C's spectrum-to-customer ratio.

555. The table shows that MTN had a spectrum-to-subscriber ratio close to that of Cell C's current ratio in the financial year ended 31 December 2011 and Vodacom had a similar spectrum-to-subscriber ratio to Cell C in the financial year ended 31 March 2006. However, we understand that neither Vodacom nor MTN had given MVNOs access to their networks in and before those financial years, unlike Cell C at present. Therefore, even when they did have more spare capacity, neither Vodacom nor MTN were providing MVNOs with access to their mobile networks. This clearly contradicts Vodacom's argument that notwithstanding capacity constraints vertically integrated MNOs face "strong economic incentives" to partner with MVNOs. Although, the Commission understands that MTN has provided access to resellers, submissions to the public hearings were that the wholesale prices of MTN were higher than retail prices in any event. However, we also understand

that MTN's [redacted]⁶⁵³ may point to a greater focus on the wholesale market in future.

556. A major reason why both Vodacom and MTN have not historically offered MVNOs wholesale access (rather than reselling arrangements) is likely to be because of the risk that MVNOs will cannibalise sales from their retail segment. There is evidence to show that despite MVNOs targeting niche customer segments, they are still seen as a competitive threat. As Vodacom itself noted, [redacted]⁶⁵⁴ [redacted].

557. Vodacom indicated there is competitive pressure to attract MVNOs because "it is better for an MNO to host an MVNO on its network, and earn consequent wholesale revenues, than having that MVNO hosted on a rival network".⁶⁵⁵ The Commission agrees that this reasoning (i.e. they will get access anyway) would ordinarily factor into the decision-making of MNOs considering whether or not to provide network access to MVNOs. However, in the case of the mobile market in South Africa, Cell C, whose network is inferior in quality and unit costs to both that of Vodacom and MTN, has historically been the only operator that has provided network access to MVNOs. Cell C has been unable to exert this form of competitive pressure on Vodacom and MTN since it is not able to offer MVNOs network access at

652 Vodacom did not present the underlying calculations for these figures so the Commission has calculated these numbers using annual report data and the spectrum holdings reported by Telkom which was submitted in November 2017

653 MTN's submission on 7 June 2019, p. 69, para. 5.38 (Confidential)

654 Vodacom's submission, 7 August 2018, para. 71.3 (Confidential)

655 Vodacom's submission, 14 June 2019, p. 166 (Non-Confidential)

a quality comparable to what Vodacom and MTN offer their customers.

7.3.4 STEPS FORWARD DEPEND ON THE IMPLEMENTATION OF THE WOAN

558. The Commission's view is that promoting MVNO network access on equitable terms has the potential to help stimulate competition in the South African mobile market and so ought to be considered. In contrast, Cell C's longstanding provision of network access has largely not resulted in Vodacom or MTN concluding deals with MVNOs. MTN's more recent deals with MVNOs or resellers appears to be a product of its recent initiatives to address the problems of wholesale access in response to the concerns raised by the Commission. As discussed above, this is potentially because Cell C cannot offer MVNOs the network quality needed to exert competitive pressure on the dominant MNOs or to offer network access on attractive terms.

559. In its Policy Directive on high-demand spectrum, the DTPS has provided direction to assign significant high-demand spectrum to a WOAN in the future.⁶⁵⁶ If the WOAN is realised as envisioned, there may be no need for regulations that promote access for MVNOs on other networks. This is because the WOAN's business case is based on providing wholesale access to MVNOs. With a significant amount of spectrum and clear incentives to attract and grow through MVNOs, the WOAN will not have an incentive to limit or deny network access to MVNOs. The WOAN, unlike MNOs, will not operate at the retail level and therefore will not run the risk of MVNOs cannibalising its retail sales.

560. The ICASA draft IM on the spectrum assignment currently also incorporates an additional requirement for licensees

of high demand spectrum to conclude deals with at least three MVNOs. Based on the Commission's research of regulatory actions globally in respect of MVNOs (as briefly documented in Appendix C), ICASA should also take into account the following considerations pertaining to any future regulatory action regarding MVNO access to the networks of licensees other than the WOAN:

- 560.1 Any price guidance or regulations would require some flexibility built into them to prevent MVNOs from being locked into contracts where wholesale prices become out-of-date because retail prices are falling.⁶⁵⁷
- 560.2 Any pricing obligations ought to take into account its impact on dynamic efficiency or specifically MNOs' incentives to invest in mobile networks although this may be of lesser concern once additional high-demand spectrum is released to MNOs.⁶⁵⁸
- 560.3 A consideration as to how long MNOs may have to find appropriate MVNOs (in a merger between Hutchison 3G and Orange in Austria, it took two years for the MVNO which took up the offer from Hutchison to enter the market)⁶⁵⁹ and what will happen if there are none available.
- 560.4 Consideration as to how to address delays in access to future technologies by MVNOs. Even in countries such as the UK, where there is a vibrant MVNO sector, Grant Thornton predicted in January 2017 that MVNOs will only be able to use 5G technology 6 months after MNOs, thereby putting them at a relative disadvantage.⁶⁶⁰
- 560.5 Consideration as to whether differences

656 Department of Communications, 26 July 2019, Policy on High Demand Spectrum and Policy Direction on the Licensing of a Wireless Open Access Network

657 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.18

658 Hashim, 2005, "Mobile Virtual Network Operators: Special reference to regulatory environments", Academic Thesis at the University of Manchester, p.37

659 Analyses Mason, 25 October 2018, "MVNO aspects of the Commission's mobile market review", p.38

660 Grant Thornton, January 2017, "State of the UK MVNO Market", Slide 8

in quality and speed between MNOs and MVNOs are permissible or would that make it difficult for the latter to compete fairly. Even in the UK, the speed and quality of service of MVNOs are not always the same as MNOs' own retail offerings.⁶⁶¹

560.6 Consideration as to whether MNOs be required to offer MVNOs additional support services, for example, location information, or the real time rating of calls (these may happen with a delay), and whether this would need to be balanced against the price premium needed for these services.⁶⁶²

560.7 Finally, MNOs could potentially respond to regulations that forces them to give MVNOs network access by creating their own MVNOs. The use of sub-brands is common. For example, Three in the UK created the Smarty sub-brand and there are five sub-brands in the Netherlands.⁶⁶³ ICASA would need to consider whether they would prefer that new MVNOs are independent of MNOs, and if so then this ought to be stipulated in any access regulations.

7.4 SUBMISSIONS IN RESPECT OF PROVISIONAL FINDINGS ON ROAMING

561. The Commission received the forthcoming submissions from the MNOs relevant to the findings in the Provisional Report in respect of national roaming.

562. Cell C agreed that cost-reflective pricing for national roaming with possible functional

and accounting separation of network and retail operations would assist small operators that do not have a national network.⁶⁶⁴ It suggested that cost-based national roaming be a condition for the award of spectrum.⁶⁶⁵ In particular, Cell C suggested that national roaming be mandated if the availability of new sub-1GHz spectrum was less than the number of MNOs that want it.⁶⁶⁶ In the absence of voluntary commitments by roaming providers called for by the Commission, Cell C agrees that ICASA should enforce terms of roaming, such as seamless call handover, quality of service and latest technology offerings.⁶⁶⁷

563. Telkom disagreed that the price of national roaming be regulated, because in its view national roaming does not lend itself to regulation.⁶⁶⁸ According to Telkom, there is significantly more competition in the wholesale market for roaming than there was before and roaming operators require flexibility to renegotiate when needed, which may be hindered by a pre-defined regulatory timetable.⁶⁶⁹ As such, Telkom prefers that negotiated roaming agreements be in place, but suggest instead that a set of guidelines be developed setting out the minimum service levels in roaming agreements.⁶⁷⁰

564. MTN disagreed with the Commission's findings and recommendations on national roaming. It states that there is no evidence to suggest that mobile operators do not compete effectively to provide mobile roaming and as such there is no basis to suggest that regulated access would lead to any benefit.⁶⁷¹ According to MTN, this is because consolidation does not necessarily

661 Grant Thornton, January 2017, "State of the UK MVNO Market", Slide 8

662 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.18

663 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.39, 41

664 Cell C's submission on 14 June 2019, p. 4, para. 2.4 (Non-Confidential)

665 Cell C's submission on 14 June 2019, p. 20, para. 5.8 (Non-Confidential)

666 Cell C's submission on 14 June 2019, p. 24, para. 6.7.3 (Non-Confidential)

667 Cell C's submission on 14 June 2019, p. 20-21, para. 5.10 (Non-Confidential)

668 Telkom's submission on 14 June 2019, p. 56, para. 114 (Non-Confidential)

669 Telkom's submission on 14 June 2019, p. 56, para. 114-115 (Non-Confidential)

670 Telkom's submission on 14 June 2019, p. 56, para. 116 (Non-Confidential)

671 MTN's submission on 14 June 2019, p. 67, para. 5.33 (Non-Confidential)

lead to an imbalance in bargaining power.⁶⁷² In fact, it argues, later entrants have an advantage as they can use the historical investments of the earlier entrants as a guide to demand distribution.⁶⁷³ Further, MTN argued that insufficient attention was paid to the impact that any interventions to improve roaming access would have on investment incentives.⁶⁷⁴ MTN disagreed strongly with the proposed recommendation of functional separation should voluntary commitments to improve wholesale roaming access and terms not be forthcoming.⁶⁷⁵ [3<].⁶⁷⁶

565. Vodacom disagreed with the Commission's findings and recommendations in respect of national roaming. Vodacom argued that far from being disadvantaged, late entrants have the advantage of being able to deploy the latest available technologies improving their capex ratio.⁶⁷⁷ In Vodacom's view, neither CellC, nor Telkom are disadvantaged by the current roaming agreements.⁶⁷⁸ It also argued that there is an active and competitive market for the provision of national roaming services.⁶⁷⁹ The basis of Vodacom's disagreement regarding the Commission's recommendations in respect of national roaming are as follows: (1) in Vodacom's view, the Commission had not yet considered the latest roaming contracts, (2) regulated national roaming is a temporary measure to assist new entrants and neither Telkom nor Cell C are new entrants, (3) large operators' networks are not a non-replicable asset, and (4) mandated access would undermine infrastructure investment incentives and result in cherry-picking by roaming operators.⁶⁸⁰

7.5 COMMISSION'S RESPONSE IN RELATION TO NATIONAL ROAMING

566. The criticisms raised in submissions by roaming providers and Telkom to the Commission's provisional findings fell into three broad themes: (1) they are based on an out-dated analysis as insufficient attention had been paid to the new roaming agreements; (2) there are no competition issues in the wholesale market for national roaming, as insufficient evidence was presented to suggest that competition for the provision of national roaming services is not competitive and, as such, there is no bargaining power imbalance; and (3) investment disincentives – the Commission did not consider the effect of the proposed recommendations for national roaming on investment incentives. In this section, the Commission addresses these submissions. Broadly, what will be shown is that while the roaming agreements have improved over time, particularly in terms of quality of service, and with the recent changes in roaming partners, those seeking roaming still do not fare well in terms of the cost of roaming. Furthermore, their position, in this respect, is likely to persist or worsen in future as prices reduce faster than roaming rates.

567. In this section, the Commission finds that (1) the new roaming agreements do improve on the old roaming agreements; however, (2) data roaming prices are unaffordable; (3) data roaming prices are not at a wholesale level; and (4) these pricing outcomes are likely to persist in future; and the section concludes with the finding, (5) the appropriate data roaming price per GB is likely to be at least lower than the roaming operators' retail price for data.

672 MTN's submission on 14 June 2019, Annexure D, p. 8, para. 30 (Non-Confidential)

673 MTN's submission on 14 June 2019, p. 38, para. 4.29 (Non-Confidential)

674 MTN's submission on 14 June 2019, p. 68, para. 5.34 (Non-Confidential)

675 MTN's submission on 14 June 2019, p. 68, para. 5.36 (Non-Confidential)

676 MTN's submission on 7 June 2019, p. 69, para. 5.38

677 Vodacom's submission on 1 July 2019, p.149 (Non-Confidential)

678 Vodacom's submission on 1 July 2019, p.114 (Non-Confidential)

679 Vodacom's submission on 1 July 2019, p.156 (Non-Confidential)

680 Vodacom's submission on 1 July 2019, p. 198

7.5.1 THE NEW ROAMING AGREEMENTS ARE AN IMPROVEMENT OVER THE OLD AGREEMENTS

568. One of the criticisms levelled at the Commission's recommendation for more cost-based roaming rates is that the new roaming agreements had not formed part of the analysis of roaming prices. While the interim report dealt with the new features and pricing of these roaming agreements, a summary and extension of this analysis is presented here.
569. The new roaming contract between Cell C and MTN does not replace Cell C's roaming agreement with Vodacom. Instead, the new agreement provides Cell C with additional coverage using MTN's [REDACTED] in addition to the national coverage provided by Vodacom for 2G and 3G data. The new agreement [REDACTED].
570. Telkom concluded a new roaming agreement, along with a facilities-leasing agreement, with Vodacom in November 2018 that came into full effect from June 2019. [REDACTED].

571. The Provisional Report assessed the roaming charges of these agreements as set out in the roaming contracts provided to the Commission. However, having received actual roaming traffic and payments for data from the MNOs, a more detailed comparison of roaming prices of the new roaming agreements and old agreements is provided here and in the forthcoming sections.
572. A comparison of the effective roaming charges per GB, as calculated using actual roaming traffic and payments, under the old agreements compared to the new agreements on an overlapping period is presented in the two figures below. Cell C's old and new roaming agreements overlap for the period August 2018 to June 2019. The difference between Cell C's roaming rates on Vodacom's network and its roaming rates on MTN's network ranges between [REDACTED].

Figure 72: Cell C's roaming cost per GB on Vodacom's network and MTN's network



Source: Roaming data provided in Cell C's submissions on 26 July 2018 and 17 July 2019

Figure 73: A comparison of Telkom's effective roaming cost per GB on MTN and Vodacom



Source: Roaming rates calculated using item 2 of Telkom's submission on 12 July 2019

573. Telkom's old and new agreements overlap for the period January 2019 to June 2019. The difference between the effective roaming rates per GB was [X] over the period with [X].

574. Thus, in terms of absolute prices, [X]. However, as will be demonstrated in the forthcoming sections, the new roaming prices per GB are still unaffordable for roaming operators and still restrict the ability of roaming operators to compete with roaming providers.

7.5.2 CONCERNS REGARDING THE SIZE OF THE ROAMING ACCESS PRICE

575. While roaming prices have decreased for roaming operators in the new roaming agreements, it is apparent from the forthcoming analysis that roaming operators [X] under both the old and new roaming agreements. While roaming operators' positions have improved under the new agreements, they are still [X] in these agreements.

576. In coming to this conclusion, the Commission calculated the effective roaming price per GB under the old and new agreements using monthly roaming traffic and payments

provided by the MNOs. The Commission also calculated the effective retail price per GB for roaming operators, namely revenue per GB. A ratio was constructed of the effective roaming price per GB to the effective retail price per GB. A ratio greater than 1 demonstrates that a roaming operator is paying more per GB on roaming than it earns on average per GB from retail customers.

577. Telkom and Cell C are paying between [X] per GB for each GB used on the roaming network. The figure below illustrates the cost per GB of Cell C roaming on Vodacom's network relative to Cell C's effective price per GB over the period June 2016 to June 2019. Over the period, the ratio increased from [X], peaking in April 2019 at [X]. At June 2019, Cell C was paying [X] the amount it earned on a GB towards the roaming cost of that GB. Thus, Cell C has become [X] on roamed data over time. To understand this in absolute terms, as at June 2019, Cell C earned [X] per GB from retail customers on average. The effective roaming price per GB as at June 2019 was [X]. Thus, Cell C was [X] per GB on each roamed GB. Cell C calculated that it had made [X] on roamed data in June 2019 alone.⁶⁸¹

681 Cell C's submissions on 26 July 2018 and 17 July 2019

Figure 74: The cost per GB of Cell C roaming on Vodacom's network as a proportion of Cell C's effective price per GB



Source: Roaming data provided in Cell C's submissions on 26 July 2018 and 17 July 2019, and Vodacom's submissions on 6 August 2019 and 30 August 2019; effective retail prices calculated using total revenue and traffic provided by Cell C on 17 July 2019

Figure 75: The cost per GB of Cell C roaming on MTN's network as a proportion of Cell C's effective price per GB



Cell C's submissions on 26 July 2018 and 17 July 2019 ⁶⁸²

578. While Cell C is in a far better position in its roaming agreement with MTN, the figure above demonstrates that Cell C is still [R] per roamed GB on average. Over the period August 2018 to June 2019, Cell C was paying between [R] its effective price per GB for each roamed GB. As at June 2019, Cell C was paying [R] its effective price per GB for each roamed GB. In absolute terms, at an effective retail price per GB of [R] and an effective roaming price per GB

of [R] for June 2019, Cell C was [R] per roamed GB. Cell C's customers used [R] of roamed data on MTN's network in June 2019. Thus, for June 2019, Cell C made [R] on roamed data. This is greater in absolute terms than [R] in the same period roaming on Vodacom's network.

579. [R]. As illustrated in the figure below, over the period June 2016 to March 2019 Telkom paid between [R] the effective price per GB

682 The roaming data supplied by MTN was not split according to voice and data and so could not be used in this analysis

Figure 76: The cost per GB of Telkom roaming on MTN's network as a proportion of Telkom's effective price per GB



Source: Roaming rates calculated using item 2 of Telkom's submission on 12 July 2019 and MTN's submissions on 31 July 2018, Annexure G and 26 July 2019, Annexure C; effective price calculated using item 1 of Telkom's submission on 12 July 2019

Figure 77: The cost per GB of Telkom roaming on Vodacom's network as a proportion of Telkom's effective price per GB



Source: Roaming data provided in item 2 of Telkom's submission on 12 July 2019 and Vodacom's submission on 6 August; effective prices calculated using item 1 of Telkom's submission on 12 July 2019

on roaming with the ratio steadily increasing over the period. As at March 2019, the ratio stood at [X]. In absolute terms, the effective retail price per GB was [X] and the effective roaming price per GB was [X], so for each roamed GB, Telkom was effectively [X]. Roaming data usage was [X] GB in March 2019, thus Telkom made [X] in March 2019 on roamed data.

580. While Telkom appears to be in a better position roaming on Vodacom's network

as compared to the same period roaming on MTN's network, Telkom is still [X] as demonstrated in the figure above. The ratio varied between [X] over the period December 2018 to March 2019. As at March 2019, the ratio stood at [X]. In absolute terms, Telkom's effective retail price was [X] per GB and the effective roaming rate per GB on Vodacom's network was [X] per GB in March 2019, so Telkom was [X] per roamed GB for March 2019. Telkom's total roamed data traffic in March 2019 was

[REDACTED], so Telkom [REDACTED] on roamed data on Vodacom's network in March 2019 of [REDACTED].

581. [REDACTED]. These operators do this by necessity. In order to compete effectively in the market and grow their businesses, they necessarily need to attract customers away from the incumbent operators by offering more attractive prices. However, even when compared to the effective price per GB of the roaming provider, roaming rates are high.

7.5.3 DATA ROAMING RATES ARE NOT AT A WHOLESALE LEVEL, HINDERING THE ABILITY OF ROAMING OPERATORS TO COMPETE WITH HOST NETWORKS

582. The preceding section illustrated that roaming operators are on average [REDACTED] used on a roaming network. Intuitively, this is strongly related to the fact that these smaller MNOs charge lower data prices to attract consumers and grow their subscriber

base. However, even compared to the retail effective prices of the host networks, roaming rates are high. This hinders the ability of roaming operators to compete with host networks. In this subsection, roaming prices for data are compared to the effective retail prices for data of the host networks to determine if roaming prices are in fact of a wholesale nature [REDACTED] and are hindering the ability of roaming operators to compete with host networks.

583. In the forthcoming two figures, the ratio of MTN's roaming rates offered to Telkom and Cell C to its own effective retail price for data is presented. A ratio greater than one occurs when the roaming rate exceeds the effective retail rate. According to the figures, [REDACTED]. The gradual deterioration over time also reveals that annual reductions in roaming rates did not keep pace with annual reductions in effective retail price declines. [REDACTED].

Figure 78: The cost per GB of Telkom roaming on MTN's network as a proportion of MTN's effective price per GB



Source: Roaming rates calculated using Telkom's submission on 12 July 2019 and MTN's submissions on 31 July 2018, Annexure G and 26 July 2019, Annexure C; effective price calculated using Annexure A and B of MTN's submission on 27 July 2019

Figure 79: The cost per GB of Cell C roaming on MTN's network as a proportion of MTN's effective price per GB



Source: Roaming data provided in Cell C's submission on 17 July 2019 and 1 August 2019⁶⁸³; effective data prices calculated using Annexure A and B of MTN's submission on 27 July 2019

584. Similarly, as demonstrated in the figure above, over the entire measurement period of August 2018 to June 2019, [✂], and therefore not of the character of a wholesale rate. Thus, at no point in Cell C's roaming agreement with MTN, could Cell C [✂] on MTN's network while remaining competitive relative to MTN.

585. A slightly different picture has been observed with Vodacom's roaming agreements with Cell C and Telkom as illustrated in the figures below. [✂], with the exception of the post November 2018 period for Cell C. However, this is a product of the high effective data rates that Vodacom is able to sustain given its market power. The trend line of an ever-increasing ratio is

Figure 80: The cost per GB of Cell C roaming on Vodacom's network as a proportion of Vodacom's effective price per GB



Source: Roaming data provided in Cell C's submissions on 26 July 2018 and 17 July 2019, and Vodacom's submissions on 6 August 2019 and 30 August 2019; effective retail prices calculated using Vodacom's effective rate calculations, Vodacom submission on 20 August 2019

683 The roaming data supplied by MTN was not split according to voice and data and so could not be used in this analysis

Figure 81: The cost per GB of Telkom roaming on Vodacom's network as a proportion of Vodacom's effective price per GB



Source: Roaming data provided in Telkom's submission on 12 July 2019 and Vodacom's submission on 6 August; effective retail prices calculated using Vodacom's effective rate calculations, Vodacom submission on 20 August 2019

also consistent with the observation above that reductions in roaming rates over time do not keep pace with reductions in retail prices.

586. Over an admittedly short period of analysis, December 2018 to March 2019, the roaming rate per GB that Telkom pays to Vodacom was [✂] Vodacom's effective price per GB over the whole period. However, already [✂] is observable in this short period and it

is likely that within a short period of time the ratio will breach the mark where the rates can no longer be considered 'wholesale'.

587. However, it is also clear that Vodacom's effective price per GB is higher than those of the other MNOs, including MTN, as demonstrated in the figure below. This means that even though [✂], this is primarily because Vodacom has a higher effective price per GB than all the other MNOs.

Figure 82: Effective retail prices for mobile data



Source: Effective retail prices calculated using Vodacom's effective rate calculations, Vodacom submission on 20 August 2019, Annexure A and B of MTN's submission on 27 July 2019, total revenue and traffic provided in Cell C's submission on 17 July 2019, and item of Telkom's submission on 12 July 2019

Figure 83: The cost per GB of Cell C roaming on Vodacom's network as a proportion of MTN's effective price per GB



Source: Roaming data provided in Cell C's submissions on 26 July 2018 and 17 July 2019, and Vodacom's submissions on 6 August 2019 and 30 August 2019; effective retail prices calculated using Annexure A and B of MTN's submission on 27 July 2019

Figure 84: The cost per GB of Telkom roaming on Vodacom's network as a proportion of MTN's effective price per GB



Source: Roaming data provided in Telkom's submission on 12 July 2019 and Vodacom's submission on 6 August; effective retail prices calculated using Annexure A and B of MTN's submission on 27 July 2019

588. In fact, when Vodacom's roaming prices are compared to MTN's revenue per GB as demonstrated in the two figures above, it becomes clear that roaming operators roaming on Vodacom's network [REDACTED]. Thus, roaming prices charged by Vodacom to the roaming operators on its network [REDACTED].

589. From November 2016, the roaming price per GB that Vodacom was charging Cell C [REDACTED], as illustrated in the figure above. Thus, for most of the period considered, Cell C

was being [REDACTED].

590. The same situation is observed for Telkom's roaming agreement with Vodacom. Over the entire period of consideration, December 2019 to June 2019, [REDACTED]. Thus, for the whole period considered, [REDACTED].

591. Thus, it is apparent from this and the preceding analysis, that roaming operators are being charged roaming rates that [REDACTED]. In short, the roaming rates are not even

Figure 85: Cell C's projected roaming costs on MTN's network compared to MTN's forecasted effective data price



Source: Roaming data provided in Cell C's submission on 17 July 2019 and 1 August 2019⁶⁸⁴; Effective data prices calculated using Annexure A and B of MTN's submission on 27 July 2019

wholesale rates, let alone cost-orientated, from the roaming providers which indicates that there are inequitable bargaining dynamics in favour of the roaming providers.

7.5.4 IT IS ANTICIPATED THAT THESE PRICING OUTCOMES ARE LIKELY TO PERSIST OR WORSEN IN THE FUTURE

592. In this subsection, we examine the future roaming rates as contractually agreed relative to the trend in effective retail prices to determine if the [✂] is likely to persist and potentially worsen.

593. Cell C provided the Commission with a forecast of their data roaming costs and volumes in terms of their roaming agreement

with MTN. While there are no forecasts for the effective price per GB of data, it is reasonable to presume that the effective price of data will continue to gradually fall in future, as it has done in the past for all operators. However, the effective price per data is unlikely to fall below zero, so it is expected that as effective data prices fall closer and closer to zero, the absolute size of the decrease in the effective retail price per GB is likely to shrink. In the figure above, MTN's effective data prices are forecasted using a decreasing exponential function fitted to MTN's historical effective prices.

594. The figure above illustrates that Cell C's projected roaming price per GB on MTN's

Table 39: Average monthly changes in the roaming price under the MTN/Cell C roaming agreement and the average monthly change in MTN's effective price per GB

	Jun, 2016 - Jul, 2018	Aug, 2018 - Jun, 2019	Jul, 2019 - Dec, 2020
MTN's effective price change	[✂]		
MTN/Cell C roaming price change		[✂]	

Source: Roaming data provided in Cell C's submission on 17 July 2019 and 1 August 2019⁶⁸⁴; Effective prices calculated using Annexure A and B of MTN's submission on 27 July 2019

684 The roaming data supplied by MTN was not split according to voice and data and so could not be used in this analysis

network are [redacted]. This is reflected by the fact that [redacted], as demonstrated in the table above. Cell C's forecasts suggest that [redacted] during the implementation period of the roaming agreement. The sharp reduction in roaming rates during June 2019 is largely a feature of the transition period of the roaming contract.

595. The Commission did not receive forecasted roaming rates from Telkom or Vodacom

based on their new roaming agreement. However, the actual roaming rates provided by Telkom for the period January 2019 to June 2019 and by Vodacom for the period December 2018 to June 2019 closely track the variable roaming charges schedule for 3G and 4G data for the period 1 December 2018 to 30 November 2019 as per the roaming agreement between Telkom and Vodacom.⁶⁸⁵ The excerpt of the roaming charges schedule as per the

Figure 86: Roaming charges contained in the roaming agreement between Telkom and Vodacom



Source: Roaming Agreement between Vodacom and Telkom, Telkom's submission on 14 December 2018

Figure 87: Telkom's projected roaming costs on Vodacom's network compared to Vodacom and MTN's forecasted effective data prices



Source: Roaming Agreement between Vodacom and Telkom, Telkom's submission on 14 December 2018; Vodacom's effective rate calculations, Vodacom submission on 20 August 2019; Annexure A and B of MTN's submission on 27 July 2019

685 Roaming Agreement between Vodacom and Telkom, p. 48, Schedule 2, para. 5. Telkom's submission on 14 December 2018

Table 40: Average monthly changes in the roaming price under the Vodacom/Telkom roaming agreement and the average monthly change in Vodacom’s effective price per GB

	Jun, 2016 - Nov, 2018	Dec, 2018 - Jun, 2019	Jul, 2019 - Mar, 2024
Vodacom’s effective price change	[X]		
MTN’s effective price change	[X]		
Vodacom/Telkom roaming rate change		[X]	

Source: Roaming Agreement between Vodacom and Telkom, Telkom’s submission on 14 December 2018; Vodacom’s effective rate calculations, Vodacom submission on 20 August 2019; Annexure A and B of MTN’s submission on 27 July 2019

roaming contract is presented in the figure above. According to the roaming charges schedule, [X]. Thus, the variable rate for 3G and 4G for the forthcoming schedule periods serves [X].

596. Using the variable roaming rate for 3G and 4G data as the projected roaming prices for the duration of the contract period, the figure above illustrates that the roaming price that Telkom pays Vodacom per GB [X] and that by late 2020, [X] too. In the figure above, MTN and Vodacom’s effective data prices per GB are forecasted using a decreasing exponential function fitted to MTN and Vodacom’s historical effective data prices.

597. According to the roaming charges schedule of the roaming agreement between Vodacom and Telkom [X] over the contract period. When compared to the average monthly decrease in Vodacom and MTN’s effective prices for the period June 2016 to June 2019, it is apparent [X].

7.5.5 THE APPROPRIATE DATA ROAMING PRICE SHOULD BE LOWER THAN ROAMING PROVIDERS’ RETAIL DATA PRICES

598. One of the criticisms raised in terms of the interim report by both Vodacom and MTN was that the Commission had failed to consider the risks to investment incentives from regulating national roaming. In the interim report, the Commission does acknowledge the general theoretic possibility that

network sharing can influence an individual operator’s incentive to invest in mobile infrastructure. In particular, the interim report stated: *“The relevant competition framework for mobile telephony primarily rests on infrastructure competition. The operation of infrastructure requires strong investment incentives to build and operate networks... Theoretical models demonstrate that under unconstrained roaming, MNOs will avoid duplicating infrastructure and maximise rents from roaming. Furthermore, when operators are symmetric, only colluding operators will have an incentive to conduct roaming agreements.”*⁶⁸⁶

599. However, it was determined that the models under which these conclusions have been drawn are very different from the market scenarios under which sharing occurs, such as asymmetric market entry. In particular, the interim report stated: *“However, these models are very far away from the market scenarios in which sharing occurs. One such scenario is the case of asymmetric market entry where roaming can generate investment incentives. First-movers are given the opportunity to recoup the costs of investment by having exclusive access to the market, which allows them to extract profits above competitive levels. Second movers do not have exclusive access to the market and cannot necessarily self-finance investment through supernormal profits. As previously discussed, roaming allows a second mover to provide a national service*

686 Provisional report, para. 628

while its network has not yet been fully developed. While this does not necessarily completely compensate for the competitive advantage of a first mover, it does allow effective competition to be achieved sooner. The second mover can generate a higher cash flow than it would have been otherwise able to generate while still building a network, which gives the operator a higher self-financing leeway for its own network investment and generates positive investment incentives. This can be further incentivised from a regulatory perspective by introducing limits to the availability of roaming over time.”⁶⁸⁷

600. Notwithstanding this, the Commission acknowledges that the level at which a roaming price is set can influence the roaming operator’s incentive to invest in its own mobile infrastructure, albeit only likely at the margin. Furthermore, the Commission acknowledges that a new operator may have an incentive to focus network investment in locations where the incremental cost of network roll-out is lower than the average cost of traffic on the host operator’s network – the so-called “cream-skimming” behaviour. In particular, the interim report states: “A new operator faces a choice in each location that it decides to operator in to either roam on an incumbent network or build its own network. When the price of roaming on another network is lower than the incremental cost of expanding its network, the new operator will opt to roam rather than invest in network infrastructure and operations at the upstream level. This would result in the complete investment burden of network infrastructure lying with the host network in the areas where the new operator chooses to roam on the host operator’s network. If the roaming operator only chooses to roam in more rural areas

and self-build in urban areas, then the roaming operator will be at a cost advantage compared to the host operator, as the cost of investing in infrastructure is high compared to the incremental cost of expanding network capacity in rural areas.”⁶⁸⁸⁶⁸⁹

601. In this regard, three pricing models for roaming were discussed in the Provisional Report, namely: the average cost of data traffic on the host network, the Efficient Component Pricing Rule (“ECPR”) and the competitive equality criterion. The national roaming price under the ECPR reflects the incremental cost of the roaming traffic on the roaming provider’s network plus the forgone profit from not self-supplying this traffic at the retail level.⁶⁹⁰ The competitive equality criterion, however, sets a roaming price that will only allow an efficient new entrant to achieve the same profitability as the first mover operator. It does so by considering the geographical cost structure of the host operator. As the new entrant expands its network and roaming traffic shifts further to more remote areas, the unit cost will rise. Thus, the new entrant will be incentivised to consistently self-build even while roaming as the roaming price rises to account for costlier areas. However, this presumes that the duplication of network infrastructure is desirable. Theoretical models suggest that non-cooperative investments in the wholesale market, operators may even overinvest.⁶⁹¹

602. A roaming price based on the average cost of data traffic on the host network will be lower than a roaming price based on the ECPR, while the roaming price based on the ECPR will be lower than a roaming price based on the competitive equality criterion, as demonstrated in the figure below. Setting the roaming price to the

687 Provisional report, para. 629

688 Sandbach, J. (2009), *National Roaming Pricing in Mobile Networks*, in Telecommunication Markets: Drivers and Impediments by Brigitte Preissl, Justus Haucap and Peter Curwen (eds). 249-264, Physica-Verlag HD.

689 Provisional report, para. 634

690 Sandbach, J. (2009), *National Roaming Pricing in Mobile Networks*, in Telecommunication Markets: Drivers and Impediments by Brigitte Preissl, Justus Haucap and Peter Curwen (eds). 249-264, Physica-Verlag HD.

691 Stühmeier, T. (2012) *Roaming and Investments in the Mobile Internet*. Heinrich-Heine-Universität Düsseldorf, Department of Economics, Düsseldorf Institute for Competition Economics (DICE), Discussion Paper [online]. Available at: https://www.econstor.eu/bitstream/10419/56463/1/046_Stuehmeier.pdf [Last viewed on 1 April 2019]

Figure 88: Pricing models for roaming access price

Roaming access price		
Average cost of data traffic on the host's network	ECPR	Competitive Equality Criterion
Considers the fixed costs of building and operating a network	Leaves the incumbents profits unaltered	Allows both networks the same level of expected profit given equal market shares
Allows for cream-skimming as the average cost of data traffic differs across urban and rural areas	Incremental cost of traffic on host's network plus the lost profit margin from not self-supplying at the retail level – retail price minus avoided retail costs, as such assumes the retail price is already efficient	Incentivises full roll-out of a national network by roaming operator – the roaming access price increases as the roaming operator expands its own network and roaming shifts to more expensive sites

Source: Commission's own construction

average cost of data traffic on the host network may still have some scope for the incentive to “cream-skim”. However, the ECPR implicitly assumes that existing retail prices are efficient, which is not the case in South Africa for the roaming operators, and requires a new entrant to be as efficient as the incumbent roaming provider, which in a market characterised by increasing returns to scale is not a convincing proposition. Thus, using the ECPR is likely to generate a roaming price that is too high. The competitive equality criterion price is higher still and may result in over-investment.

603. The appropriate roaming price is therefore likely to lie somewhere in between the host network's average cost of data traffic and the ECPR to avoid “cream-skimming”. The ECPR is essentially equal to the effective retail price less avoided retail costs.⁶⁹² Thus, as a conservative maximum benchmark, the roaming price should at least be less than the roaming provider's effective retail price.

7.6 FINDINGS

604. The concentration in the mobile market at the retail level has implications for competition at the wholesale level in respect of both MVNO and national roaming agreements.

605. In respect of MVNOs, the dominance of Vodacom and MTN and the high margins they are able to extract from the market result in limited incentives to host MVNOs,

let alone host them at attractive, cost-reflective market rates. This, and the fact that Telkom Mobile has not invested in the required capabilities to host MVNOs, means that it is largely Cell C that hosts MVNOs. The lack of outside options for potential MVNOs and the fact that Cell C's network is of a lower quality and higher unit cost relative to the two large incumbents means that MVNOs will not be a competitive force in the market. This is also evident from the fact that MVNOs' share of subscribers and market revenue is trivial, and that really this space is occupied by a few niche operations focused on delivering complementary services to an existing customer base.

606. However, the clear policy direction to support the establishment of a WOAN represents a move to address the MVNO problem in the market. As the WOAN's business would be based on providing access to MVNOs and other wholesale customers, it would be incentivised to develop MVNOs in order to grow its network usage levels and would also bring competition to the wholesale market for hosting MVNOs. This does imply that efforts to regulate MVNO access at cost-orientated levels may be unnecessary going forward if the WOAN is established, and in fact could in fact be counter-productive if it undermined the ability of the WOAN to compete for MVNO contracts, as noted in the Provisional Report,

607. The ICASA Draft IM does also make it a requirement that other licensees of high

692 Sandbach, J. (2009), *National Roaming Pricing in Mobile Networks*, in Telecommunication Markets: Drivers and Impediments by Brigitte Preissl, Justus Haucap and Peter Curwen (eds). 249-264, Physica-Verlag HD.

demand spectrum also host at least three MVNOs. Whilst heavy-handed regulation may not be necessary or appropriate, a review of regulatory action on MVNOs in other jurisdictions does suggest that some guidance is most likely required in respect of those contractual arrangements. This would include guidance on whether MVNOs need to be independent of the MNO and the time period required to find and contract MVNOs. It would also include quality of service considerations such as whether it receives a service of the same speed and quality as the MNO's own customers and access to additional support services such as locational information. Finally, it would also need to consider dynamic aspects such as rate reductions to at least ensure the wholesale rates remained below effective retail rates of the host and access to future technologies.

608. In respect of national roaming, only Vodacom and MTN, as first-movers, offer national coverage through their networks which was part of their obligations and a rationale for delaying further entry. Whilst RAIN offers data capacity in metro areas to Vodacom, they are not an option for national roaming given the limited coverage of their network. Neither of the two dominant networks has an incentive to offer the challenger networks a high-quality roaming service at cost-reflective prices given this would simply enhance the challenger network's ability to compete more effectively. [§]. [§] these simply are not of a wholesale character. This fact alone demonstrates that there is not a competitive market for national roaming and that neither of the incumbent operators have an incentive to offer competitive roaming rates. Furthermore, [§].
609. As was noted in the Provisional Report, competitive roaming rates are critical to ensuring that the challenger networks are effective competitors because it affects their average costs but also the incentive to reduce prices at the margin. It also provides an outlet for capacity constraints in their own network, allowing more aggressive pursuit of market share. This suggests some

form of regulatory oversight is required. The regulatory approach to price regulation of roaming suggests a range of options. The average cost of the host network represents the lowest price level but could incentivise 'cream skimming' behaviour as roaming agreement seekers are disincentivised to roll out in more costly locations. An alternative that is widely cited is the ECPR, which is in essence a retail minus approach where the relevant retail rate is that of the host network and the minus is the retail layer cost (as reflected as a % of the retail rate). The competitive equality criterion represents the highest price and seeks to escalate roaming rates as the roaming coverage is gradually reduced to higher cost locations.



8. FIXED LINE SUPPLY GAP

8.1 SUMMARY OF PROVISIONAL FINDINGS

610. Despite receiving sparse submissions relating to fixed line data services during the first round of stakeholder engagements, the Commission remained interested in the fixed line supply of data services because of the potential role that can be played by this segment in reducing the data prices generally and to the poor more specifically. At the time the Provisional Report was released, the Commission had not thoroughly considered this segment since the information it had at the time was insufficient to draw meaningful conclusions. As a result, we committed to look at this further.
611. One of the reasons for our interest in this segment is that fixed line supply remains the backbone in the supply of not just household and business access, but also public data services such as public Wi-Fi or even community networks. These represent alternative sources of data services, and therefore have the potential to provide cheaper (or even free) data services at different geographic places and/or different points in the day to consumers.
612. Secondly, this infrastructure can be an alternative source of competitive pressure on mobile data services to bring those prices down. This is largely because fixed line services are typically provided through Wi-Fi at the point of use, and hence available for smartphones to connect to. However, such competitive pressure is only likely to occur if these services are far more pervasive (to give more opportunity for off-load), and if they also have reach into poorer communities which currently have no options outside of mobile and which are being exploited as a result.
613. The Commission therefore found that, while it is important to fix mobile competition which has persistently failed to deliver affordable data services to consumers, efforts to extend the reach of alternative infrastructure such as fixed line or fixed wireless must also be considered since they can serve as an important solution to high data prices. The Commission's Provisional Report noted that:
- 613.1 Unlike in former whites-only residential areas, the residential areas of historically disadvantaged South Africans generally lack legacy infrastructure (including fixed-line copper-based services through aerial poles or underground ducts which former white-only areas received as a result of apartheid spatial planning), making it far more costly to roll out such services in those areas. The legacy infrastructure enabled Telkom Openserve to quickly rollout ADSL and later FTTH to these areas as opposed to the residential areas of previously disadvantaged South Africans.
- 613.2 Despite the rollout costs, evidence shows that even for FTTH service providers that lack the legacy infrastructure of Openserve, the primary targets for FTTH roll out are the wealthy suburbs given that there is likely to be a better investment case in these areas. This is because the chances of realising returns on investment are higher in

these wealthier areas as they have more households that a) have income levels sufficiently high to make FTTH affordable, b) are likely to already have data devices (tablets, smartphones, computers and smart TVs), and c) have the demand for high data usage applications which FTTH lends itself to services such as video streaming subscriptions.

613.3 Moreover, the roll-out of public Wi-Fi is skewed towards the wealthy and has been insufficient in terms of coverage to give even those consumers numerous off-load opportunities. This is likely because there is more benefit to shops and restaurants providing such free services if it assists in attracting wealthier customers who may choose where to go based on the availability of a public Wi-Fi service. The lack of roll-out by local government exacerbates the lack of public Wi-Fi access for lower income consumers as commuter and public service points outside of private businesses are unserved by public Wi-Fi.

614. Commission's Provisional Report considered two broad aspects that require attention in order to expand fixed line access, namely (i) addressing the cost of infrastructure rollout to these areas and (ii) identifying innovative business models to provide affordable packages to low-income individuals at home or free services in public. More specifically, the Commission argued as follows:

614.1 Any strategy to address the fixed line supply gap and to support the extension of fixed line services into lower income and smaller rural towns will need to find means to reduce the costs of rolling out infrastructure, including the costs of trenching and the sunk costs that are required upfront.

614.2 Since the infrastructure typically lends itself to localised monopolies, there

needs to be sufficient market and countervailing constraints such that these positions are not exploited through high pricing.

615. Innovation is required to make fixed line services such as public Wi-Fi available and for businesses to invest in rolling out these services in poor communities. This may include innovative business models that will draw in private funding and lower the cost of service to government.

8.2 SUBMISSIONS IN RESPECT OF PROVISIONAL FINDINGS

616. The Commission received a number of submissions relevant to the findings in the Provisional Report. For the most part, submissions supported the Commission's provisional findings:

616.1 In its submission, MWEB appeared to support the deployment of large-scale public Wi-Fi networks in underserved areas, which it notes will potentially offer a solution to expensive infrastructure deployments and the shortage of licensed spectrum. MWEB note that public Wi-Fi uses unlicensed spectrum and these networks are cheaper in terms of deployment and maintenance. It referred to the City of Tshwane, which it said successfully delivered free internet access across more than 780 Wi-Fi zones, connecting 1.6 million users.⁶⁹³ According to MWEB, a similar model such as the City of Tshwane Free Wi-Fi could easily be deployed by mobile network operators.

616.2 MWEB also argues that fibre providers can extend their networks by using Wi-Fi as the last mile in lower income areas, albeit not all fibre providers will be able to do this as the roll out of infrastructure is costly and there are a number of new players. Vumatel, a last mile provider, and ISPs are set to offer fibre in selected

693 Tshwane web page, available at: <http://www.tshwane.gov.za/Pages/WIFI.aspx> [Accessed 27 June 2019] in MWEB's submission, 14 June 2019, p.1

areas within Mitchells Plain on a prepaid basis at a significantly reduced cost. This trial will initially be offered on an uncapped basis without installation and connection costs. MWEB referred to media reports about a similar pilot project planned by Vumatel for the Alexandra township in Johannesburg at an even lower cost⁶⁹⁴. This project has not started yet.⁶⁹⁵ If such projects prove to be successful, all role players including municipalities ought to support them.⁶⁹⁶

- 616.3 R2K argues that service providers, or service providers with help from the government, need to collaborate in putting together an infrastructural plan dedicated to providing free and fast Wi-Fi to disadvantaged communities, townships, and rural areas.⁶⁹⁷
- 616.4 RIA supports the development of a backbone infrastructure to support alternative data services such as public Wi-Fi in low-income areas.⁶⁹⁸
- 616.5 SOS supports the greater deployment of free public Wi-Fi and agrees it will have a positive impact on data prices. It however notes that state-funded Wi-Fi projects ought to be conducted in a way that does not result in the crowding out of private sector investment.⁶⁹⁹
- 616.6 *amandla.mobi* agrees that infrastructure competition for low-income consumers could have kept mobile data prices down for low-income consumers. As

such, there will be substantial benefit if fibre and public Wi-Fi is to be extended to lower income areas. However, *amandla.mobi* also notes that for many low-income consumers including those living in rural areas, mobile networks are likely to remain the main way in which they use internet services, at least in the short-to-medium term.⁷⁰⁰ According to *amandla.mobi*, public Wi-Fi is not a full substitute for affordable mobile networks.⁷⁰¹

- 616.7 In his submission, Mr Walter Brown showed that Argentina, which had a similar population size in 1960 but a lower population density than South Africa experienced higher fixed telephone density growth than South Africa between 1960 and 2005. He also showed that Colombia, which has a similar per capita income level, population size and population density as South Africa experienced much faster fixed broadband penetration.⁷⁰²
- 616.8 Mr Brown argued in favour of mass public access via a single high capacity high speed broadband link shared by many users in public access facilities. The broadband providing entity receives its planned price for the service and the community shares this price equitably and in an affordable manner. One way of doing this is by using the LAN House model, which has been used in Brazil, China, and India.⁷⁰³ A LAN house is an internet café that serves the poor

694 Mcleod, Duncan. 1 September 2017, "Vumatel to offer 100Mbit/s uncapped home fibre in townships for R89/month", in TechCentral, Available at: <https://techcentral.co.za/vumatel-offer-100mbits-home-fibre-townships-r89month/76737/> [Accessed 27 June 2019] in MWEB's submission, 14 June 2019, p.2

695 De Wet, Phillip. 8 May 2019, "Alexandra was supposed to get very cheap - and super fast - fibre more than a year ago. Here's why Mitchells Plain will probably get there first", in Business Insider, Available at: <https://www.businessinsider.co.za/vumatel-alexandra-project-delays-while-mitchells-plain-due-soon-2019-5> [Accessed 27 June 2019] in MWEB's submission, 14 June 2019, p.2

696 MWEB's submission, 14 June 2019, p.2

697 R2K's submission, 14 June 2019, p. 7

698 RIA's submission, 14 June 2019, para. 8.4-8.4.1

699 SOS submission, 14 June 2019, p.11

700 *amandla.mobi's* submission, 14 June 2019, p.2-3

701 *amandla.mobi's* submission, 14 June 2019, p.4

702 Walter Brown's submission, 13 June 2019, p.7

703 Walter Brown's submission, 13 June 2019, p.14. See also Walter Brown, July 2017, Concept paper: Tackling South Africa's Inequality, Poverty, and Unemployment, available at: <https://www.sakan.org.za/Docs/Concept%20Paper%202017.pdf> [Accessed 26 June 2019]

and operates at substantially reduced capital and operational costs via public/private support. They are developed as sustainable private micro, small, and medium business enterprises by residents of target communities. They provide (a) time-limited fast uncapped broadband access, (b) a sustained income level for their owners, and (c) affordable prices to the community.⁷⁰⁴ Another project worthy of further scrutiny and support is the Zenzeleni initiative at Mankosi village in the Eastern Cape. Initiatives such as the Zenzeleni community projects face challenges such as scalability (in terms of cost and time).⁷⁰⁵

617. However, a number of criticisms, or alternative views, were also offered by stakeholders. These are summarised as follows (and then dealt with in more detail below):

- 617.1 Although Afrihost⁷⁰⁶ [redacted].
- 617.2 [redacted]⁷⁰⁷ (see Provisional Report for details of concerns pertaining IP Connect). [redacted].⁷⁰⁸
- 617.3 Vodacom submits that it is concerned that the Commission did not focus on fixed services in the interim report. According to Vodacom, fixed services are important because of two main reasons. Firstly, fixed broadband could offer higher speeds, higher usage caps and greater reliability than mobile services. Secondly, fibre backhaul is an essential input for mobile services, as data usage increases.⁷⁰⁹ Vodacom further argues against the view that many aspects of the fixed supply chain are competitive and is of the view that majority of the supply chain for fixed

services are not competitive. In this regard, Vodacom argues that effective access to ducts and poles is likely lead to greater competition other than access products (IP Connect). This assertion is on the basis that access to ducts and poles will allow alternative operators to invest in their own backhaul, last mile infrastructure and core networks, alternative operators will have more influence over the place of their network rollout and access to ducts and poles will allow alternative operators to have significant control over their own costs.⁷¹⁰ Lastly, Vodacom submits that *"Whilst Vodacom would welcome lower prices for Telkom's IP Connect product, its preference would be to gain effective access to ducts and poles, so that it can roll-out its own fixed infrastructure"*⁷¹¹

- 617.4 Vodacom effectively argues that recommendations should prioritise effective access to ducts and poles as this is likely to lead to greater competition than access products like IP Connect. This assertion is on the basis that access to ducts and poles will allow alternative operators to invest in their own backhaul, last mile infrastructure and core networks, alternative operators will have more influence over the place of their network rollout and access to ducts and poles will allow alternative operators to have significant control over their own costs.⁷¹²
- 617.5 Telkom submits that historically, Vodacom and MTN used termination revenues from calls originating at fixed locations to fund their network expansions. Considering this, Telkom argues that Vodacom and MTN should

704 Walter Brown, July 2017, Concept paper: Tackling South Africa's Inequality, Poverty, and Unemployment, p.14, available at: <https://www.sakan.org.za/Docs/Concept%20Paper%202017.pdf> [Accessed 26 June 2019]

705 Walter Brown's submission, 13 June 2019, p.14-15

706 Afrihost's submission, 14 June 2019, p.9 (Confidential)

707 Afrihost's submission, 14 June 2019, p.9 (Confidential)

708 Afrihost's submission, 14 June 2019, p.10 (Confidential)

709 Vodacom's submission, 14 June 2019, p.24, p.171-173 (Non-Confidential)

710 Vodacom's submission, 14 June 2019, p.24, p.173-174 (Non-Confidential)

711 Vodacom's submission, 14 June 2019, p.175 (Non-Confidential)

712 Vodacom's submission, 14 June 2019, p.25, p.173-175. (Confidential)

“pay a higher termination rate for calls terminating at fixed locations”⁷¹³. According to Telkom, “this would provide a flow of revenue to fixed operators that could be used to fund fixed line infrastructure development”⁷¹⁴

- 617.6 ICASA submits that the ECA makes provision for class licenses which are not subject to policy directives and make it easier for individuals and smaller businesses to enter the infrastructure market in smaller areas. ICASA states that in the case where the Commission is of the view that universal service obligations should be imposed on class licensees to facilitate universal access, then such obligations should only be contemplated for larger class licensees that meet a revenue threshold to be determined.⁷¹⁵ ICASA notes that the Commission should also consider the proposed obligations in conjunction with section 2(z) of the ECA which requires ICASA, when intervening in the market, to consider the impact of placing social imperatives on class licensees on their sustainability.⁷¹⁶

8.3 COMMISSION’S RESPONSE AND FURTHER ASSESSMENT

618. In this section, we deal with two main aspects. Firstly, we deal with the allegations that Telkom’s IP Connect product is excessively priced. Secondly, we tackle the challenges and submissions regarding the development of infrastructure and alternative access approaches in lower income areas.

- 618.1 In relation to Telkom’s IP Connect product, we present the evidence obtained thus far both from stakeholders and from Telkom itself. Our assessment shows that there is a *prima facie* case for excessive pricing in terms of Section 8(a)

of the Competition Act against Telkom.

- 618.2 In relation to the development of backbone infrastructure and alternative access for lower income areas, we find that there are a variety of scenarios where interventions may be preproperate, each with different challenges and their own interventions or approaches.

8.3.1 ALLEGATIONS THAT TELKOM’S IP CONNECT PRODUCT IS EXCESSIVELY PRICED

619. As highlighted above, the Provisional Report stated that some stakeholders raised concerns regarding Telkom’s IP Connect product. More specifically, two ISPs (Afrihost and Internet Solutions) were of the view that fixed data prices were high in South Africa because of high prices for IP Connect.⁷¹⁷ As summarised above, [§<] in its submission in response to the Provisional Report [§<].

620. The Commission has had extensive engagements with Telkom mainly to understand the IP Connect product and, secondly to understand the IP Connect cost structure and its pricing. Considering this, the Commission will analyse IP Connect in this sub-section as follows:

- 620.1 Firstly, we briefly describe IP Connect and its role in fixed data services.
- 620.2 Secondly, the Commission compares IP Connect prices with other similar products.
- 620.3 Thirdly, the Commission analyses the price-cost mark-up of IP Connect as calculated by Telkom.

Description of IP Connect

621. As already explained in the Provisional Report, Telkom (Openserve) is the largest provider of last mile fixed line broadband services nationally, built on its historic position as the monopoly provider prior

713 Telkom’s submission, 14 June 2019, p.32 (Confidential)

714 Telkom’s submission, 14 June 2019, p.32 (Confidential)

715 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p.14.

716 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p.1.4.

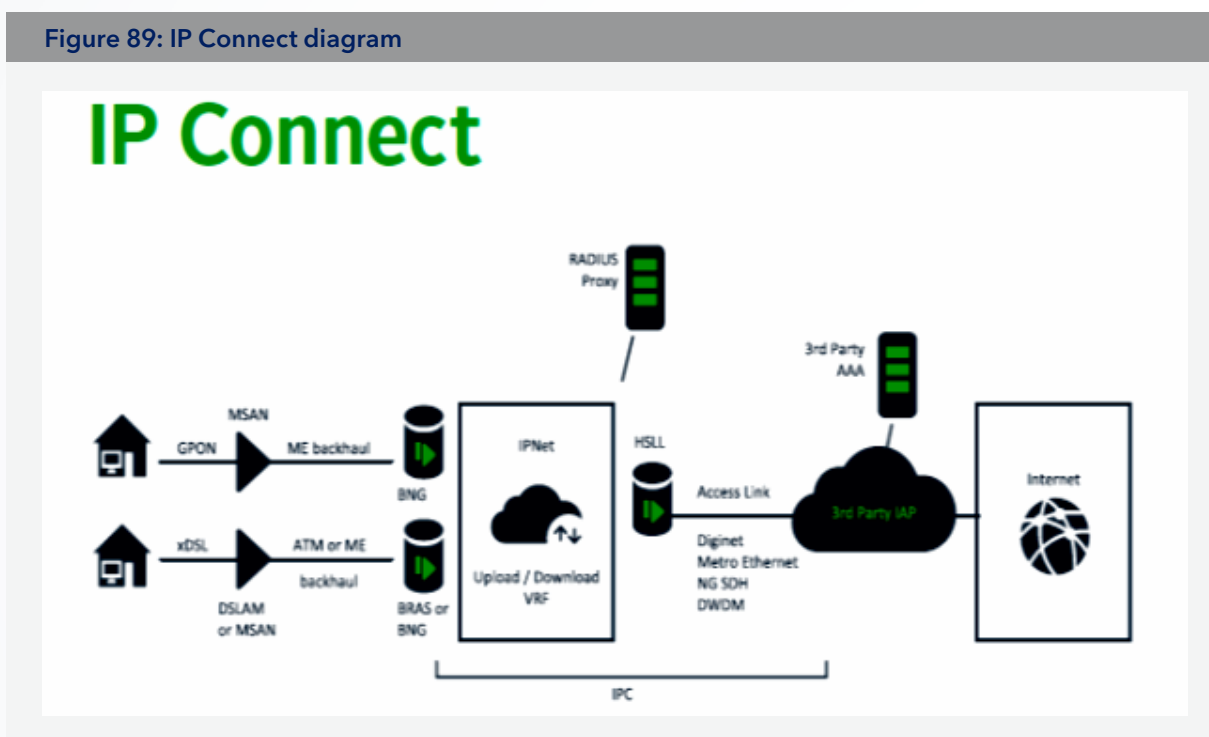
717 DSMI Provisional Report, p.142, para 470.

to 2005. This incorporates a substantial number of legacy technology ADSL lines and a growing volume of FTTH / FTTB lines based on new rollout of fibre, often on existing aerial poles or ducts used previously for copper services. Telkom Openserve does provide access to this infrastructure on a wholesale basis to third party Internet Service Providers (ISPs) which then contract with the customer directly.⁷¹⁸

622. Openserve, as a wholesale division of Telkom offers a number of products such as connectivity for carriers and enterprises⁷¹⁹ as well as the IP Connect product. Given its position as a national provider of wholesale connectivity and services, we understand that many of its products would, at least to some degree, be carried on the same fixed infrastructure. In its discussion with the Commission regarding IP Connect, Telkom also showed [redacted].⁷²⁰

623. Any customer who uses fixed line internet services needs to contract with an ISP. The ISP in turn needs access to an ADSL provider or FTTH provider of last mile infrastructure (further detail on the value chain is provided in section 2 above and in Appendix A of the Provisional Report) in order to provide internet services to the end customer. In order to provide service to the end consumers, an ISP must pay two access fees; a line rental which covers the last mile infrastructure and a connection fee for a connection product which is IP Connect or similar connectivity provider. IP Connect product in essence is the links and throughput (bandwidth) which allows ISPs (at the data centre) to access the Openserve copper ADSL and fibre last mile connections and thus ultimately the customer.⁷²¹ According to Internet Solutions, "purchasing IP Connect bandwidth from Openserve is the only means ISPs have to connect to

Figure 89: IP Connect diagram



Source: Openserve⁷²²

718 DSMI Provisional Report, 24 April 2019, p. 141, para 467

719 Openserve *Our Solutions* [Online]. Available at: <https://openserve.co.za/open/products/consumer-isp/#> [Accessed 14 November 2019]

720 Meeting with Telkom, 28 May 2018

721 Internet Solutions 's submission, 17 October 2018, p.4

its last mile ADSL and fibre networks that enable ISPs to deliver services to home and business users".⁷²³ A graphical representation of IP Connect is provided in Figure 89.

624. For an ADSL customer, Openserve is the only provider of last mile infrastructure while for FTTH, although there are various FTTH last mile providers, the choice is limited to the installed last mile FTTH infrastructure in that specific area as we understand it is unusual to find two FTTH last mile providers in one area. So, where the FTTH last mile provider is Openserve, the ISP (and ultimately the customer) will pay Openserve both the line rental fee and a connection fee (IP Connect). For another FTTH provider like a Vumatel, an ISP (and the ultimately the customer) will pay that FTTH provider the line rental fee plus a connection fee (for a company aligned to them) to carry the traffic between the last mile and the ISP's Point of Presence (PoP), which is typically located at a data centre⁷²⁴.

625. While the complaint from ISPs is that the price of IP Connect is excessive, we note that IP Connect prices have been decreasing in recent years as summarised below. As indicated below in Table 41, Telkom started reducing IP Connect prices [redacted]. We also note that all these price decreases but for two [redacted].

IP Connect comparators

626. Submissions on IP Connect were first made by Afrihost and Internet Solutions at public hearings where they both pointed to what they viewed as a comparable product in the Automation Exchange service used in conjunction with Vumatel. In order to understand to what degree revenue (or prices) exceeds cost and therefore the extent to which prices may be considered unreasonably high, we have also compared IP Connect prices with other similar products offered by other companies. In this regard, we compared Openserve's IP Connect

Table 41 : IP Connect's price reductions over time

Date	Reduction
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

Source: Telkom ⁷²⁵

722 Telkom (Openserve) IP Connect [Online]. Available at : http://openserve.co.za/open/media/downloads/Openserve_eBrochure_IPConnect.pdf [Accessed 18 March 2019]
 723 Internet Solutions 's submission, 17 October 2018, p.4
 724 POP is primarily the infrastructure that allows remote users connect to connect to the Internet. A POP is generally present at an Internet service provider (ISP) or the telecommunication service provider. It can consist of a router, switches, servers and other data communication devices
 725 Telkom's submission, 10 July 2019, p.2 (Confidential)

Table 42: Openserve IP Connect Price versus Vumatel and Frogfoot prices as submitted by stakeholders (2019)

	1 POP Price	2 POP Price	3 POP Price
Telkom IP Connect	[REDACTED]	[REDACTED]	[REDACTED]
Vumatel Automation Exchange		[REDACTED]	
Frogfoot's IP Connect equivalent		[REDACTED]	

Source: Various submissions to the Commission (2019)

prices with Vumatel's connectivity partner, Automation Exchange, and Frogfoot's IP Connect equivalent prices above.

627. As shown above, IP Connect's prices are between [REDACTED] as compared the Automation Exchange prices. Similar, Frogfoot's equivalent of IP Connect is between [REDACTED] than Openserve's IP Connect product.

628. As already indicated earlier, ISPs pay two access fees to last mile providers; a line rental fee and a connection fee which is the IP Connect. Considering this, we also compared the total access fees (line rental plus estimated IP Connect costs) for Openserve as well as line rental plus Automation Exchange (IP Connect equivalent) for Vumatel using a 20mbps FTTH product. As shown below in Table 43, even though [REDACTED]. For those ISPs that must use Openserve as the provider of last mile infrastructure because Openserve is the only last mile infrastructure provider in a specific area, they would [REDACTED] of IP Connect by having a higher contention ratio for IP Connect. This means that ISPs will have as

many users as possible sharing the data capacity of IP Connect in order to contain their wholesale connectivity costs.

Analysis of IP Connect price-cost mark-up

629. Following the release of the Provisional Report, the Commission engaged with Telkom (Openserve) in order to understand the underlying costs specific to the IP Connect product and separate from the other products carried by Openserve across its infrastructure. In the course of the interaction with the Commission, Telkom eventually produced a price-cost test for the 2017-2018 financial year done by FTI Consulting using [REDACTED].

630. Table 44 below summarises the estimated price-cost test for IP Connect for the 2018 financial year as conducted by FTI Consulting on behalf of Telkom (Openserve). Broadly speaking, the price-cost test is derived by comparing the revenue of IP Connect to operating costs plus an estimate of a fair return on capital invested for IP Connect. The approach taken by FTI Consulting is summarised below.

630.1 Revenue. [REDACTED].⁷²⁶

Table 43: Estimated access fees on a 20 mbps FTTH product for Openserve and Vumatel per subscriber

	Line rental cost per month	IP Connect or Automation Exchange cost per month	Total access fees per month
Openserve	[REDACTED]	[REDACTED]	[REDACTED]
Vumatel	[REDACTED]	[REDACTED]	[REDACTED]

Source: Various submissions to the Commission

726 Telkom's submission- Annexure A, 10 July 2018, p.12 (Confidential)

Table 44: Telkom's 2017-2018 (Rm) IPC price-cost mark-up

Legend	Line Items	Total
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

Source: Telkom ⁷²⁷

630.2 *Operating costs.* [REDACTED].⁷²⁸

630.3 *Pre-tax margin.* [REDACTED].

630.4 *Cost of Capital.* [REDACTED].⁷²⁹

630.5 *The price-cost mark-up.* [REDACTED]. This is broadly in line with what was done in the Sasol excessive pricing case.^{730 731}

631. As argued above, the profit earned by a firm can give some insights on whether a firm may be considered to be engaging in excessive pricing. Profits are normally expected to be in line with an undertaking's cost of capital or investors' required return on investment.⁷³² If profits are greater than the firm's cost of capital for prolonged periods of time, it may be a sign of some anti-competitive conduct such as excessive pricing. According to Telkom's own calculations, in the 2017-2018 financial year, IP Connect's prices were [REDACTED] above their total economic costs (operational plus capital costs or fair return).

632. Notwithstanding this, a closer analysis of Telkom's price-cost calculations revealed a number of concerns. Given that Openserve

is a multi-product / service firm as argued above, operating a wholesale network, there are common costs (such as operating costs and capital costs) that need to be allocated to a specific product / service when conducting a specific product/ service price-cost calculation. The main concern that the Commission has with Telkom's price-cost calculations is that it appears [REDACTED] were assigned to IP Connect based on revenue.

633. As summarised below, a revenue figure for the IP Connect product is stated as [REDACTED] and an operating cost of [REDACTED] is presented for IP Connect for the 2018 financial year. For the 2018 financial year, Telkom's Audited Financial Statements shows revenue for Openserve as R17,570 million and operating costs as R10,656 million. Thus, IP Connect represented about [REDACTED] of Openserve's revenue and the exact same [REDACTED] of Openserve's operating costs. The implication of this is that effectively the results as presented by Telkom do not relate to IP Connect but to Openserve as whole.

727 Telkom's submission- Annexure A, 10 July 2018, p.13 (Confidential)

728 Telkom's submission- Annexure A, 10 July 2018, p.7 (Confidential)

729 Telkom's submission- Annexure A, 10 July 2018, p.12 (Confidential)

730 Competition Appeal Court, Sasol Chemical Industries v Competition Commission, 131/CAC/Jun14, Decision on 17 June 2015; Competition Tribunal decision on the Sasol case (Case no. 48/CR/Aug10).

731 Telkom's submission- Annexure A, 10 July 2018, p.1,7-13 (Confidential)

732 Fleet, A. and Moilola, T. The use of profitability analysis by competition authorities.

Table 45 : IP Connect's revenue and costs as a proportion to Openserve overall costs and revenue (FY2018)

	Openserve	IP Connect
Revenue (Rm)	17,570	[REDACTED]
Operating costs (Rm)	10,656	[REDACTED]
IP Connect revenue as a proportion of Openserve revenue		[REDACTED]
IP Connect costs as proportion of Openserve costs		[REDACTED]

Source: Telkom ⁷³³

634. This allocation of costs on the basis of revenue will mask any differences in the actual costs of supplying each service. To the extent that prices in areas where Openserve has less market power like wholesale services provided to enterprises and other carriers are in fact lower than for IP Connect (which we expect may be the case), then the true price-cost margin for the IP Connect product would be significantly higher. The Commission's view is that the most appropriate approach would be to allocate common costs to IP Connect using a volume-based or capacity-weighted approach as opposed to using the revenue-based approach.

635. Telkom however does not agree with the assertion that cost allocation has been done on the basis of revenue. It submits that [REDACTED]⁷³⁴. [REDACTED]⁷³⁵ Telkom further argues that [REDACTED].⁷³⁶

636. In its initial response to the allegations that IP Connect is excessively priced, Telkom previously made two main arguments.

636.1 Firstly, Telkom argued that *"Telkom is a national network, so obviously the*

costs of our network inputs costs are far higher. You also have a legacy network which layers in a fixed cost overhead".⁷³⁷ Essentially Telkom argues here that due to its legacy national network, its cost base is different to others and its national pricing approach must cover all of its costs.

636.2 Secondly, Telkom argued that the prices of IP Connect have decreased significantly over time and this was achieved by implementing efficiency measures. Specifically, Mr Maseko, the CEO of Telkom argued during the public hearings that *"IP Connect prices have been coming down over the last few years, I think if I am not mistaken those prices have come down by about 80%, 90%. They continue to come down"*.⁷³⁸ Mr Maseko further explains that IP Connect prices came down at a cost, the staff compliment was 22 000 when he started at Telkom and now Telkom's staff compliment is around 12 000.⁷³⁹ Telkom also indicated that more price decreases for IP Connect were in the pipeline at the time of the hearings.⁷⁴⁰

733 Telkom's submission, 10 July 2018, p.9 (Confidential); Telkom's submission, 18 November 2019, p.9 (Confidential);

734 Telkom's submission, 18 November 2019, p.9 (Confidential)

735 Telkom's submission, 18 November 2019, p.9 (Confidential)

736 Telkom's submission, 18 November 2019, p.9 (Confidential)

737 Telkom's presentation at the public hearings held on 17-19 October 2018. See Day 2 transcripts, p.164-165, line 3-11

738 Telkom's presentation at the public hearings held on 17-19 October 2018. See Day 2 transcripts, p.165, line 16-17

739 Telkom's presentation at the public hearings held on 17-19 October 2018. See Day 2 transcripts, p.165, line 20-21

740 Telkom's presentation at the public hearings held on 17-19 October 2018. See Day 2 transcripts, p.165, line 15-16

637. In a more recent communication with the Commission, Telkom also argued [redacted].⁷⁴¹ By arguing [redacted], Telkom is effectively arguing that ISPs have options in those areas [redacted] and they do not necessarily have to use Telkom's last mile infrastructure in those areas. This is held to mean that Telkom is in fact constrained in its pricing of the IP Connect product. These three arguments by Telkom however cannot justify the results of the price-cost test and price comparison exercise as shown above:

637.1 Firstly, although we (and stakeholders) acknowledge that IP Connect prices have reduced over time, a price that is between [redacted] than that of its closest competitor (Automation Exchange) is an indication of its excessiveness. [redacted] when using the reduced price in the 2018 financial year and while the price has come down further, there would have also been a volume effect that preserves profitability at least to some extent. Abuse of dominance investigations are typically also backward looking, or *ex post* analyses.

637.2 Secondly, even if we accept the argument that Telkom is a national network with a legacy network and has higher costs; a price-cost analysis accounts for those "higher costs" as it calculates margins after considering all costs, including capital costs. Put differently, even after considering those "higher costs", [redacted].

637.3 [redacted]. So, it is not clear that the [redacted] is credible. In any event, what is apparent from Telkom's own price-cost test results is that it (Openserve) was not effectively constrained as it is able to [redacted].

638. Therefore, the results of the price-cost test and the comparator analysis show that there is a *prima facie* case of excessive pricing in terms of Section 8(a) of the Act against Telkom (Openserve) for IP Connect. This is because Openserve earned [redacted] mark-

up above economic value in the 2018 financial year on its own calculations and IP Connect prices as compared to Vumatel's Automation Exchange prices are between [redacted], further indicating that IP Connect prices are excessive. It is likely that the price-cost margins for previous years would be higher than [redacted] in the 2018 financial year because IP Connect prices were higher in previous years. Furthermore, the approach to allocating costs means that the price-cost margins could in fact be far larger than what has been presented to the Commission.

639. In the Sasol judgement, the CAC decision recommended the consideration of the arguments regarding the origins of dominance, in particular the history of state support and the fact that the dominant position in the relevant market was not the result of any innovation or risk taking on its part to be included in the reasonableness assessment. According to the CAC:

"[.....] This Court [the CAC] in Mittal considered that these factors should be examined at the reasonableness stage of the enquiry, because it was here that it was appropriate to take into account how the firm's cost affected the reasonableness of its price in relation to the value of the good and whether the high price of the good represented a reward for risk and innovation".⁷⁴²

640. Telkom's dominant position in the market is as a result of previous extensive state support and from the fact that it was previously a natural monopoly as it was previously wholly owned by the state. Therefore, a lot of the initial legacy infrastructure capital costs were paid for by the state and it cannot be argued that higher prices for IP Connect are a reward to Telkom for making more risky or innovative investments relative to other network operators.

641. Although EBITDA margins are typically calculated for an entity as a whole, we also calculated the IP Connect's EBITDA margins

741 Telkom's submission- Annexure A, 10 July 2018, p.13 (Confidential)

742 See Competition Appeal Court decision on the Sasol case (Case no. 131/CAC/Jun14), Para 171

Table 46 :IP Connect EBITDA margins (Rm) for 2017- 2018 financial year

	Openserve	IP Connect
Revenue	[X]	[X]
Operating cost	[X]	[X]
Pre-tax margin	[X]	[X]
EBITDA margin (%)	[X]	[X]
Average for the period	[X]	

Source: Telkom ⁷⁴³

based on the information provided by Telkom. EBITDA margins are calculated as per the below table by dividing IP Connect Revenue by pre-tax margin as a percentage of IP Connect Revenue for the financial years 2017 to 2018.

642. From the table above, we also note that IP Connect’s EBITDA margins were [X] in the 2017 and 2018 financial years respectively. Telkom in its submission in response to the CFS for the public hearings submitted that “[.....] South Africa, with an average EBITDA margin of 37% for the top two operators (Vodacom and MTN), is above the median and the mean (both approximately 35%) of the top two operators in all countries that have three or four operators for which data is available.⁷⁴⁴” Telkom further adds that “Telkom does not consider this to be an exhaustive analysis of the profitability of mobile operators in South Africa [.....]. However, it does provide a high-level indication that Vodacom and MTN are more profitable than average for a broad set of countries and may therefore potentially be earning profits above their cost of capital over a significant period of time [.....].”⁷⁴⁵ While these comments were directed at mobile network operators, they do suggest, at least at face value, that Telkom itself is of the view that high EBITDA margins of 37% and above are possibly an indication that firms are “earning profits above their

cost of capital”. Therefore, with EBITDA margins of [X] earned in the 2017 and 2018 financial years respectively, [X] for IP Connect and appears to have been abusing its dominance position in this market.

8.3.2 ALTERNATIVE FIXED LINE ACCESS

643. As highlighted above, the Commission stated in the Provisional Report that the submissions received in response to the call for submissions (“CFS”) on fixed line services were sparse. Considering this, the Commission in the Provisional Report requested submissions on all aspects of developing alternative infrastructure into lower income and public areas comprising diagnosis of the source of failure, potential solutions to unlocking such infrastructure, and whether doing so is likely to assist in reducing data prices. Following submissions and extensive consultations with stakeholders, the Commission has identified and assessed different challenges and solutions to close the supply gap. We provide the Commission’s analysis of these submissions in this sub-section:

- 643.1 Firstly, we briefly discuss the state of FTTH roll out and constraints in extending core infrastructure and FTTH; and
- 643.2 Secondly, we highlight potential solutions to providing affordable or free

743 Telkom’s submission, 10 July 2018, p.9 (Confidential); Telkom’s submission, 18 November 2019, p.9 (Confidential)

744 Telkom’s submission, 15 October 2019, p.8

745 Telkom’s submission, 15 October 2019, p.9

access to data particularly through Wi-Fi based models.

State of FTTH roll out and constraints in extending core infrastructure and FTTH

644. As explained in the value chain above (see section 2), metropolitan fibre provides connection between local sites with high-density urban and sub-urban areas and metropolitan points of presence, normally providing high speed broadband connections.⁷⁴⁶ It is where a national fibre link lands in a city or large town and the traffic is then carried to a point which is closer to the customer. Metropolitan fibre connection is achieved through metropolitan area networks which typically use fibre or microwave links, also known as backhaul networks. The metro fibre backhaul connects the last mile infrastructure to larger switches and aggregation points in a metropolitan area. There are few suppliers of metro fibre, including the MNOs supplying their own needs.⁷⁴⁷

645. In analysing the extent of core metro infrastructure roll out, we analyse the backhaul footprints of metro fibre suppliers such as Dark Fibre Africa (“DFA”), Broadband Infraco (“BBI”), Liquid Telecom, Fibreco and Telkom. These are major metro fibre suppliers and their fibre footprints provide an indication of the spread of core metro infrastructure in South Africa.

646. As detailed in Appendix D, we found that these metro fibre suppliers have widespread core infrastructure coverage even covering certain townships such as Alexandra, Tembisa and Soshanguve. In addition, some of the backhaul suppliers such as DFA also connect MNOs’ mobile sites while MNOs also self-provide backhaul to their towers. It is common cause that mobile broadband services cover 99% of the South African population, which means

that technically, 99% of the population is close to fibre networks, although not necessarily in sufficient proximity that last-mile FTTH infrastructure is a real or imminent possibility. The only exception to this may be in more outlying areas where the backhaul to the mobile site is done via a microwave link and therefore the actual fibre network is less accessible. However, the prevalence of metro-level infrastructure and the density of mobile sites in more urban areas suggests that there does not appear to be an insurmountable barrier in rolling out FTTH or last mile infrastructure in more urban low-income areas. More so, as discussed below, wireless solutions, particularly in rural areas remain a possibility for connection to core networks in instances where there is no fibre network infrastructure deployment nearby, as is often the case.

647. Our understanding therefore is that urban low-income areas and many other low-income areas adjacent to higher income areas in less urban areas, are served by core infrastructure networks, with the primary challenge being the last-mile roll-out of FTTH infrastructure the barrier to fixed access, and the route to closing the supply gap.

648. Despite the reasonably widespread core infrastructure roll out, FTTH roll-out or last mile roll out is currently relatively limited and FTTH is mostly deployed in wealthy, historically white, urban areas. According to the 2017 General Household Survey, only 10.6% of the South African households have access to the internet at home. At a provincial level, Western Cape (25.7%) and Gauteng (16.5%) have the highest percentage of households who have access to the internet at home. For the two predominately rural provinces, Limpopo and Eastern Cape, the percentage of households who have access to the internet at home is 2.2% and 3.5% respectively.⁷⁴⁸

746 ICASA’s Priority Markets Discussion Document, p. 43, para. 87

747 This layer of connectivity consists of multiple providers, including Telkom (Openserve), Link Africa, Liquid Telecoms, Fibre Co, Metro Fibre, DFA, Vodacom and MTN amongst others.

748 Statistics South Africa (21 June 2018). 2017 General Household Survey, [Online]. Available at <http://www.statssa.gov.za/publications/P0318/P03182017.pdf> [Accessed 18 March 2019].

649. As is the case with other network industries, it is common cause that FTTH roll-out or last mile roll out is very expensive, even where core infrastructure or backhaul is available and in close proximity to the market. Where there is no core infrastructure, FTTH roll-out may be prohibitively expensive. We however note that although FTTH roll out has been sparse, there has been a significant growth in FTTH/B subscriptions. According to ICASA, total fixed broadband subscriptions increased by 147.1% from 3 million in 2017 to 7.4 million in 2018.⁷⁴⁹ In the four-year period from 2015 to 2018, fixed broadband subscriptions increased significantly by 88.9%. This growth trajectory of fixed subscriptions is important to us because as it shows that where there is core infrastructure and demand, roll-out happens.

650. Further, because the take-up of FTTH is very low in South Africa, it is common cause that FTTH providers will not realise their return on investments during the early stages of their network deployment as they will have limited revenue streams. This lack of return on investments in the early stages of network deployment means that companies have little funds to re-invest in extending their network to other areas. This cycle has resulted in many fixed line operators mainly deploying their networks in urban affluent suburbs. As such, FTTH roll-out has still traditionally been a challenge in predominantly lower income areas. However, there are signs that FTTH providers are now considering the next level of demand with initiatives in lower income areas such as Alexandra, Mitchells Plain, and Soweto coming to the fore.

651. Considering this, and beyond simple demand concerns that make entry into lower income areas harder, stakeholders submit that there are two main challenges in rolling out core infrastructure and

FTTH services: wayleave applications and business forums. We briefly discuss these below in turn.

Wayleave application challenges

652. A wayleave is a right to cross land and use the property of another without possessing it. In the context of infrastructure deployment, *"the roads in towns are normally built on public land owned by the local council, by virtue of the township declaration that was gazetted to create the town/city. The local council is therefore responsible to administrate the publicly owned land and need to give permission to all parties before they may install utility services or infrastructure, even if it is supplied by the council. All parties and their contractors therefore need to obtain permission from the council to install their services or infrastructure on the public land"*.⁷⁵⁰ Therefore, before any company or person can trench to deploy infrastructure, they need approval or the wayleave so that they do not damage other existing infrastructure (telecoms infrastructure, gas etc.).⁷⁵¹

653. The ICT White Paper places a focus on access and infrastructure supply-side issues. The policy highlights the infrastructure-based challenges in the provision of broadband, which include ineffective competition, supply bottlenecks, infrastructure duplication, and the inefficient use of scarce resources.⁷⁵² These policies found their way into the Amendment Bill for the ECA prior to it being withdrawn from Parliament. Wayleave applications were to be dealt with in the ECA Amendment Bill under the Rapid Deployment Policy and this can be summarised as follows:

653.1 The Rapid Deployment provisions seeks to simplify and minimize the period from the time of application for wayleaves and permits to the issuance

749 ICASA's report on the state of ICT sector in SA-March 2019

750 City of Tshwane What is a Wayleave [Online]. Available at <https://wayleave.tshwane.gov.za/> [Accessed 25 June 2019]

751 Meeting with DFA held on 09 May 2019

752 ICASA Discussion document, Appendix 2: Government Policy Objectives. Government Gazette No. 41446. 16 February 2018, p. 90

thereof, which would decrease the cost and time involved in infrastructure deployment and thereby further policy efforts to address the costs to communicate in South Africa.⁷⁵³ Amongst others, the revisions in the ECA cover the following aspects⁷⁵⁴: the application process and procedure for network deployment; fees, charges and levies involved in infrastructure deployment; the apportionment of roles and responsibilities in supporting rapid infrastructure deployment ; and the relevant rapid deployment regulations.⁷⁵⁵

654. According to stakeholders, the main issue with wayleaves is that they are often expensive require large deposits (in some municipalities), some municipalities cannot process wayleave applications timeously, and certain towns attach conditions to wayleaves approvals which make the deployment of infrastructure economically unfeasible and conditions are inconsistent across municipalities.⁷⁵⁶ The below mentioned pilot project of offering FTTH access in Alexandra township at a monthly cost of R89 has not commenced (at the time of writing) because Vumatel is yet to receive the necessary wayleaves approvals.⁷⁵⁷ This also indicates that municipalities (at least Johannesburg municipality) may not be able to process wayleave applications timeously. The Commission understand that in some areas this is further complicated by business forums which seek to extract the 30% set aside for local historically disadvantaged businesses.

Business forum challenges

655. Stakeholders submit that they have encountered business forum challenges, especially in Durban and (Kwa-Zulu Natal) KZN when expanding infrastructure in underserved areas. According to Vumatel, business forums are not formalised and municipalities (especially in Durban) cannot control business forums. We understand that business forums create significant challenges both in terms of the cost implications on the firm that is investing in infrastructure (given various conditions that may be enforced by the business forum) and additional risks to the safety of employees. As a result of this, Vumatel (and other FTTH providers) have stopped deploying infrastructure in KZN,⁷⁵⁸ which is of great concern. For instance, it was reported that Edge Telecoms, a company that has been installing fibreoptic cables in the Dolphin Coast ceased deploying fibreoptic cables after a business forum threatened physical violence against their workers.⁷⁵⁹

656. DFA also states that in certain towns, there is the issue related to “mafia groups” that run the township where companies have to pay them a protection fee to protect the company and its staff against these groups.⁷⁶⁰

Challenges in providing affordable or free access to data

657. In this sub-section, we highlight four separate areas or initiatives the Commission has become aware of where there may be potential for free or affordable access to data to be provided to consumers,

753 Ellipsis (2015) *Rapid deployment of electronic communications facilities*. [Online]. Available at: <https://www.ellipsis.co.za/rapid-deployment-of-electronic-communications-facilities/> [Accessed on 20 July 2018]

754 Electronic Communications Amendment Bill. Government Gazette No. 41880, 31 August 2018. Chapter 4.

755 Ellipsis (2017) *Overview of the Draft ECA Bill 2017. Page 2*. [Online]. Available at: <https://www.ellipsis.co.za/wp-content/uploads/2017/12/Overview-EC-Amendment-Bill-2017.pdf> [Accessed on 18 June 2018]

756 Meeting with DFA held on 09 May 2019; Meeting with Vumatel on 23 May 2019.

757 Meeting with Vumatel on 23 May 2019

758 Meeting with Vumatel on 23 May 2019

759 Citizens *Trenches abandoned as tender mafia delay fibre installations in KZN* [Online]. Available at <https://citizen.co.za/news/south-africa/1959223/trenches-abandoned-as-tender-mafia-delays-fibre-installations-in-kzn/> Accessed 28 October 2019]

760 Meeting with DFA held on 09 May 2019

typically via a Wi-Fi access model. Based on submissions and engagements with stakeholders, we detail the challenges and key considerations involved in each area and the potential for interventions to further develop the possibility of free and affordable data access on the back of fixed line infrastructure. We also highlight affordable access to be provided in each example.

- 657.1 Firstly, we highlight the challenges of broadening access in low-income urban areas (such as townships) and consider potential solutions.
- 657.2 Secondly, we consider the case of rural access, highlighting the key case study of the Zenzeleni community network, and consider the challenges and potential solutions for expanding accessing rural areas.
- 657.3 Thirdly, we briefly discuss SA Connect initiatives led by BBI and how these initiatives can assist in providing affordable or free access to data.
- 657.4 Lastly, we briefly discuss smaller towns and wealthier rural communities access initiatives.

Urban low-income access

658. Low-income urban area, like townships, are densely populated and are likely to be adjacent to richer areas and as such there is normally metro infrastructure nearby needed to roll out FTTH or last mile access to these areas. However as already indicated, deployment of FTTH infrastructure or other fixed infrastructure may be limited in these areas because of the following:

- 658.1 Firstly, average household incomes in areas such as Alexandra and Soweto (which are probably relatively better off than other townships) are generally much lower.

658.2 Secondly and related to lower average incomes in townships, demand in townships such as Alexandra and Soweto is erratic. Potential customers are unable to spend significantly on internet access but also less able to commit to contracts due to erratic demand. This makes the business case for FTTH deployment riskier and often economically unfeasible.⁷⁶¹ Therefore, the issue with low-income areas such as townships relate to unpredictability of client signup with a service provider, whereas in more affluent markets consumers easily commit to monthly payments and demand is more certain.⁷⁶² The Commission also understands that FTTH (and previously ADSL) rollout requires a high fixed investment to pass households in an area and the need for at least 40% of those households to take up the service for it to break even.

658.3 Thirdly, due to the risks involved (as per the previous two points) and the relatively recent history of investment in FTTH infrastructure, the FTTH companies have typically focused on richer areas where investment is more certain. This has also meant that a particular model of deployment has been along with a selection of products that is more catered towards more wealthy consumers. As FTTH providers look at new opportunities in less affluent areas, firms need to develop and test new models of deployment. In some areas, it is not clear that any form of FTTH infrastructure may be viable with other models needing to be considered.

659. It appears that FTTH companies have indeed begun exploring new models and areas of lower income levels that what has been the case in recent years. Companies such as Vumatel have begun to explore new ways to deploy FTTH to low-income areas at a lower

761 Teleconference with Herotel on 07 May 2019
762 Teleconference with Herotel on 07 May 2019

cost, which is evident in its efforts to deploy to Alexandra township and Mitchells Plain. Mr Tim Genders (“Genders”) from Project Isizwe and the chairperson of the Wireless Access Providers Association (“WAPA”), has also developed a Wi-Fi model to roll out infrastructure to underserved areas at a low cost and is testing this model in pilot projects. There is also the City of Tshwane Free Wi-Fi project that offered residents of Tshwane 500MB of data for free daily. Below, we briefly discuss a) Vumatel’s Alexandra FTTH project, b) the model of Project Isizwe and c) the Tshwane free Wi-Fi project.

Vumatel’s Alexandra FTTH project

660. The key in servicing households in townships is minimising the initial costs of deploying FTTH so that the services are offered at a lower price while still maintaining similar quality as that offered in a wealthier suburb. For instance, Vumatel is planning to offer uncapped, 20Mbps fibre broadband services to the residents of Alexandra township for R89 per month. Vumatel is aiming to do this in a way that is commercially sustainable, without subsidising the township network with profits from clients in affluent suburbs. In order to achieve this, Vumatel will run the lines in townships at a 1:20 contention ratio as opposed to uncontended⁷⁶³ lines in suburbs. Practically, this means that 20 homes will effectively share the same main fibre line. Similar projects are being developed by Vumatel to service other lower income areas. For instance, Vumatel is piloting an FTTH project in Mitchells Plain in the Western Cape, although the precise model that Vumatel is intending on using is not public.

Project Isizwe roll out plan

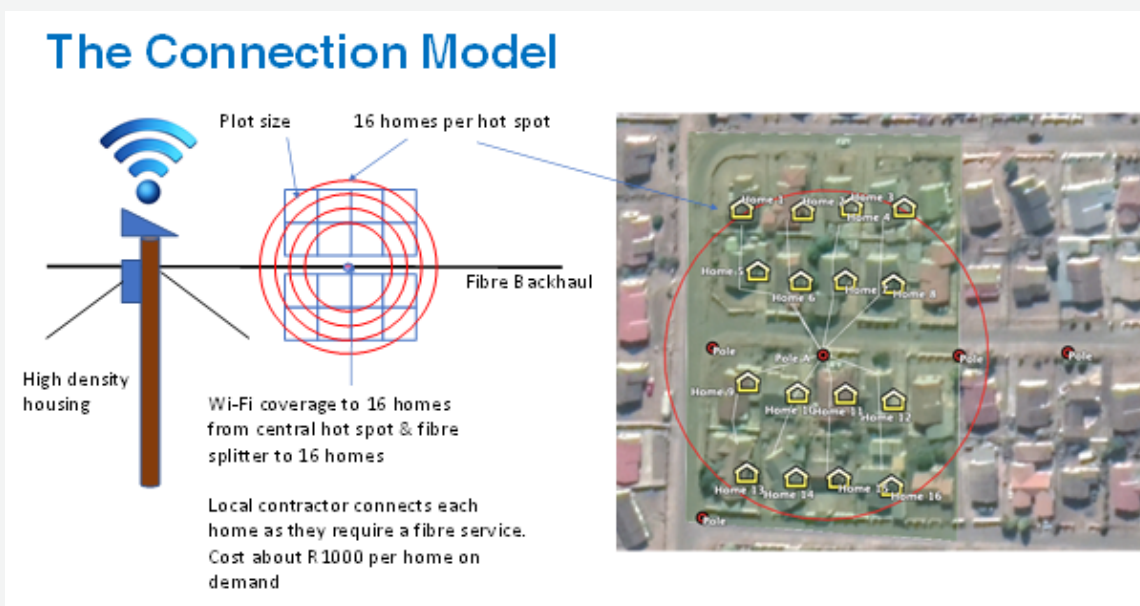
661. Consultation with Mr Genders from Project Isizwe showed that there may be alternative models to FTTH in lower income areas where FTTH may not be viable. Project Isizwe has considered strategies to bring fixed access to lower income areas using Wi-Fi based models and is indeed testing such models. Project Isizwe has conducted an analysis which shows that 7.5 million lower income homes (mainly because they are using prepaid data services) are paying up to 80 times more for internet access than high income homes (mainly because they are using mobile postpaid data services). Given that low-income (formal) residential areas generally have the same layout with blocks of streets and back-to-back plots of the same size, Project Isizwe has developed a model to connect unserved homes mainly using Wi-Fi based technology as illustrated below.

662. The proposed network infrastructure is made of a fibre network called a passive network where you have one power source. A fibre line (light) is split using a projector into eight, connecting to eight hotspots which must have a power source. In between the projector and the receiver there is no requirement for power. Then, given the typical layout of low-income residential areas, 16 homes can be connected to each hotspot and thus one line of fibre can connect 128 homes. The cheapest projector, or Optical Line Terminal (OLT), which costs about R30 000, can service 512 homes as it has four ports and thus four fibre lines can be connected to it. One port of the projector goes to eight poles/hotspots and one pole/hotspot can connect 16 homes.⁷⁶⁴

763 Simply put, uncontended is when a user’s internet speed is not influenced by other users. In contention, it’s the other way around. Practically, this is observed when there is lower internet speed during peak times, when more users are accessing the internet at the same time.

764 Meeting with Tim Genders from WAPA on 15 May 2019

Figure 90: Project Isizwe' proposed low-income connection model



Source: Tim Genders⁷⁶⁵

663. Using this model, Project Isizwe estimates that it will cost around R2 500 in capital expenditure (capex) per home to connect low-income homes⁷⁶⁶. The project is divided into 3 phases and it would cost about R20 billion to get more than 50% of the 7.5 million homes connected.⁷⁶⁷

664. There are two main reasons this project has not been rolled out extensively to date:

664.1 Firstly, most people in low-income areas can only afford a once-off installation fee of about R500-R1000 as opposed to the proposed R2500. The targeted market is also mostly not credit-worthy and as such they are unable to subscribe to these services on a long-term contract. As indicated above, demand from this market may be erratic and therefore this makes the project very risky for a provider.

664.2 Secondly, Genders states that given the extensive capital required to roll out this project, banks are generally reluctant to fund Wi-Fi projects as compared to fibre roll-out projects because Wi-Fi is classified as a movable asset while fibre is classified as a fixed asset.⁷⁶⁸ Other barriers include the risk of the equipment in the home and understanding the various communities when rolling out this type of project.⁷⁶⁹ Our understanding is that it is imperative that service providers have a good understanding of the context and the eco-system of different areas in which they operate in order for the project to be successful.

665. Genders was involved in the City of Tshwane Wi-Fi project (discussed) below and based on knowledge gained through that experience, is now piloting the above model in selected areas such as Lamontville, KwaDabeka and Marion Hill in Durban and

765 Meeting with Tim Genders from WAPA on 15 May 2019 (Non-Confidential)

766 The cost of equipment in the home is R2000: R1500 for the radio receiver and R500 for the Wi-Fi router. It would also cost an additional R500 to install the equipment

767 Meeting with Tim Genders from WAPA on 15 May 2019

768 Meeting with Tim Genders from WAPA on 15 May 2019

769 Meeting with Tim Genders from WAPA on 15 May 2019

in Elsie's River in Cape Town.⁷⁷⁰ It appears that there is potential for commercially viable operations where customers purchase vouchers for internet access, perhaps combined with some level of free Wi-Fi access. It is not clear yet whether a free service can be funded from methods such as advertising revenue. The success of these pilot projects must be monitored. There are however various options in this regard:

- 665.1 The one way is generating revenue through advertisements on the Wi-Fi portal or selling vouchers to users in order to access the network.⁷⁷¹ The challenge with pursuing an advertising model is that such projects need to appeal to large companies or advertisers for them to generate sustainable advertising revenue. However, attracting international brands/ clients can be a challenge given that these Wi-Fi projects normally connect low-income users and low-income users are normally not the main target market for many large advertisers.⁷⁷²
- 665.2 After the initial period of providing data services for free, selling prepaid vouchers to users at a relatively cheaper price might be a way of generating income for the network and ensuring that it is self-sustaining. The main challenge in this regard might be the erratic demand for such services and as such a combination of an advertising model and selling vouchers to users might be the sustainable solution.

City of Tshwane Free Wi-Fi project case study

666. City of Tshwane Free Wi-Fi project was initially funded by the City of Tshwane as a

municipal grant⁷⁷³ and the network was built on behalf of the City of Tshwane by Project Isizwe, a non-profit organisation, in 11 phases at a total capital cost of R240 million over the course of the project (4 years). The operational cost was R2 million per month at the final stage of the project comprising 1,050 hotspots providing over 600,000 users with 500MB of data per day for free and these users were consuming about 320TB of data per month in total. Considering the capital and operational costs, the effective rate of data (cost of providing data services by the City of Tshwane) was about R11.67 per month⁷⁷⁴ per user (or R23 per GB).⁷⁷⁵ It is worth noting that although people can get connectivity in transit points such as taxi ranks, the observation from the City of Tshwane Free Wi-Fi project is that the hotspots that saw the greatest data volumes were in low-income residential areas.⁷⁷⁶

667. Upon completion of the project, Project Isizwe handed the network over to the City of Tshwane and our understanding (at the time of writing) was that the City of Tshwane had issued and awarded a tender for a service provider⁷⁷⁷ to run the project on their behalf.
668. Three key issues arise from the City of Tshwane Free Wi-Fi project.

668.1 Firstly, it is whether a similar project can be replicated in other areas in light of the total capital costs required for such a project taking into account that municipalities in general have limited budgets and have utilities (water, roads and electricity) that they must deliver to residents. City of Tshwane is one of the few metropolitan municipalities in the country and as such they have a

770 Meeting with Tim Genders from WAPA on 15 May 2019 (Non-Confidential)

771 Meeting with Project Isizwe on 21 May 2019 (Non-Confidential)

772 Meeting with Project Isizwe on 21 May 2019 (Non-Confidential)

773 The project was funded by a grant provided by the municipality under the Municipal Finance Management Act (MFMA). No tender process was followed because Project Isizwe has a Non-Profit Organisation (NPO) status

774 R11 per user per month is derived by dividing the total costs (capital costs + operational costs) by the number of subscribers as follows: Capital costs of R240 million/ 4 years= R60 million /12= R5 million + R2 million Operational costs = R7 million/ 600 000= R11,66

775 Meeting with Project Isizwe on 21 May 2019 (Non-Confidential)

776 Meeting with Project Isizwe on 21 May 2019 (Non-Confidential)

777 Project Isizwe is an NPO and as such, it did not participate in the tender process

relatively larger budget than other local municipalities. However, as the City of Tshwane Free Wi-Fi project showed, the project can be carried out in stages which does mitigate some of the capital costs' impact on the rest of the budget for the municipality. While the other seven metropolitan municipalities⁷⁷⁸ might have the budgets to fund similar projects as City of Tshwane Free Wi-Fi, it is not clear whether the others (district and local municipalities) would be able to fund such projects or whether they would even have the capacity to initiate a Wi-Fi project. In these cases, funding models may be needed and the Department of Communications (DoC) may also have a role in assisting in capacity building in these municipalities and understanding where similar projects can be rolled out in low-income areas.

- 668.2 Secondly, there is perhaps some room going forward, in an increasingly digital world, to require municipalities to treat data access as a utility alongside water and electricity. This may encourage investment in Wi-Fi projects like the Tshwane Free Wi-Fi Project or other initiatives to encourage investment in fixed access technologies, even by FTTH firms in partnership with the municipalities.
- 668.3 The third issue is the commercial sustainability of such projects and to ensure that such projects do not rely on government (either municipalities or DoC) to pay the ongoing operational costs. If the project can be monetised and is commercially sustainable then the municipality may be able to sell it to a private operator and use those funds in starting a similar project in a new area. There is thus a need to continue to explore whether there are models that allow for the monetisation of these projects where a sustainable

revenue model is developed that still allows for affordable data access. We anticipate that as more of these projects are undertaken, alongside the work of people like Genders, models suitable to the South Africa low-income and urban context may evolve.

Low-income rural access expansion

669. According to the 2017 General Household Survey, only 1.7% of households living in rural areas in South Africa have access to the internet at home. At a provincial level, Western Cape (12.8%) and Gauteng (12.2%) had the highest percentage of households in rural areas who have access to the internet at home. For the two predominately rural provinces, Limpopo and Eastern Cape, only 0.8% and 0.6% of households living in rural areas have access to the internet at home respectively. Therefore, fixed access and FTTH expansion in rural areas has been very limited mainly because (i) rural areas are significantly less dense than urban areas and are normally situated far from towns and (ii) the erratic nature of consumer spend in low-income rural areas is an issue that makes deploying fibre less feasible.
670. These factors have largely meant that there is no FTTH deployment in rural areas and as such consumers in rural areas mostly rely on mobile services for their internet needs. Considering this, below we highlight a case study of a community network provided fixed access that was established in rural Mthatha and provides users with affordable internet daily.
671. Zenzeleni, a community-based network in Mankosi (made up of 12 villages and home to over 6,000 people) in the Eastern Cape created (with some help from researchers) and owns its own telephone and internet "company".⁷⁷⁹ Users of the network only pay R25 for a data voucher which allows them to access data services for a month (uncapped) using Wi-Fi enabled devices.

778 Since the boundary reform at the time of the municipal elections held on the 3rd of August 2016, South Africa is comprised of eight metropolitan municipalities, 44 district municipalities and 44 local municipalities

779 Zenzeleni Home [Online]. Available at <http://zenzeleni.net/> [Accessed 01 July 2019]

Zenzeleni uses a technology of connected hotspots using a mesh of hotspots which the network connects to the core network via a microwave backhaul.⁷⁸⁰

672. Zenzeleni by all accounts is a success story because communities that would have otherwise relied on mobile connections for data needs are able to connect to the internet at a fraction of what it would cost them if they were using mobile services. However, there are specific factors that made this community network a success.

672.1 Firstly, this community network was built as a research project funded by University of Western Cape (UWC) and its success has been driven by committed individuals who have given their time and expertise to make the project work. Currently the Steering Committee (which handles the legal aspects of the network, negotiations with backhaul providers and the initial purchase of the equipment, etc.) is key to the ongoing success of the project. While the project currently pays for its own operational costs, we understand the Steering Committee is not funded by the community network itself.

672.2 Secondly, Mankosi is a closely-knit community and they have taken ownership of the network. There may therefore be features specific to this community, in combination with the individuals who have built and developed the network, that may not be replicable in other communities or areas.

673. A key challenge for the network appears to be the reliance on Wi-Fi technology and spectrum in order to run the network. Members of the Steering Committee believe that if Zenzeleni could access better spectrum, costs could be reduced significantly and there is potential for the model to be more commercially sustainable

and replicable. In this regard, Zenzeleni submits that because the smaller operators (such as Cell C and Telkom) are roaming on MTN and Vodacom networks, spectrum allocated to these smaller operators is currently not been used in rural areas. Zenzeleni is of the view that there should be a framework in place, similar to the TV white space regulations where spectrum is dynamically assigned. According to Zenzeleni, there will be primary users who are guaranteed to have access and to the extent that it is underutilised, secondary or tertiary users can then make use of that spectrum. Zenzeleni further argues that if they had access to 900 MHz or 1800 MHz spectrum that is currently not utilised in rural areas because of national roaming, they would be able to build a network consisting of one tower using 900 MHz or 1800 MHz spectrum as compared to having a mesh network consisting of 60 hotspots. Zenzeleni argues that this is a cheaper way of providing access to the community.⁷⁸¹ A Technical Steering Committee headed by DoC may be needed for further examples of such a model, but there is potential for further engagement.

674. We also note that these models may not be fully sustainable when one considers the true cost of the Steering Committee and the expertise on it. Thus, there is a role for DTPS in establishing Steering Committees or councils of experts who can assist in capacitating new community networks. We also however note that community networks have the potential to create new small business and entrants.

SA Connect initiatives of connecting government facilities

675. Broadband Infracore ("BBI"), along with the State Information Technology Agency ("SITA"), have been appointed by the Minister of Telecommunications and Postal Services ("DTPS")⁷⁸² to lead SA Connect's initiative of providing broadband connectivity to

780 Zenzeleni What is a Mesh Networking [Online]. Available at <http://zenzeleni.net/> [Accessed 01 July 2019]

781 Zenzeleni teleconference call held on 22 May 2019

782 DTPS has now been incorporated into DoC

6,135 government facilities in eight district municipalities⁷⁸³ between 2017 and 2030. Given their lack of broadband connectivity and because they are situated in rural areas, these eight districts can be characterised as under-serviced communities.⁷⁸⁴

676. The Commission understands that the DoC (formerly DTPS) is the central coordinating body for the rollout of SA Connect and it is also funding SA Connect initiatives of connecting 6,135 government facilities. Given this, the Commission is of the view that once connected, these government facilities should at least also provide free Wi-Fi connectivity as a way of extending free data services in low-income and rural areas.

677. BBI submits that ICASA needs to do an infrastructure audit, especially regarding connectivity provided by MNOs in rural and peri-urban areas. The infrastructure audit according to BBI should inform everyone what infrastructure exists and where. BBI argues that this will help improve network planning and deployment.⁷⁸⁵

Smaller towns and wealthier rural communities' access

678. Another distinct scenario to be considered is that of smaller town and wealthier rural communities and customers (such as farmers). Here the Commission has found there are a number of initiatives and commercial activity around providing access to data services. There are a number of Wireless Internet Service Providers ("WISPs") which are typically small and regional business that are connecting smaller towns and wealthier rural areas, mostly farming towns, using Wi-Fi spectrum for microwave backhaul. A WISP provides a service based

on wireless links or connection originating from a high site to specific buildings or homes in the same manner that wireless backhaul to mobile sites is provided, or the backhaul that connect the Zenzeleni network to the core network infrastructure. There is typically a high site⁷⁸⁶ that has an antenna that points in a direction (a high site can service or connect around 50-60 customers to that antenna). Each customer has an antenna outside the property that connects to the antenna of the WISP (such as HeroTel)⁷⁸⁷. A WISP will use 5GHz spectrum frequency band for outside connection while a 2.4GHz spectrum frequency band will be used for indoor connection via Wi-Fi. Therefore, WISPs can provide customers with a 10 to 20mbps connection inside their home because of the fixed wireless nature of the product.

679. These WISPs provide fixed broadband access where other fixed line options are not available (FTTH) or inadequate (ADSL) at prices that are typically less than mobile (if there is mobile coverage). Furthermore, we understand several of these smaller towns now have fibre infrastructure and FTTH access following the activities of a WISP. In other words, where a WISP has established a demand for broadband, the WISP may invest in FTTH infrastructure and shift its wireless infrastructure to more outlying areas, thus expanding access. There are many WISPs across the country and larger WISPs like HeroTel have also developed over time. HeroTel specifically has a country wide network and large coverage operating in North West, Gauteng, Limpopo, Mpumalanga, Western Cape, KwaZulu-Natal, Free State and Eastern Cape.⁷⁸⁸

783 The eight districts cover all provinces except Gauteng and Western Cape as the focus is on those provinces that lack connectivity

784 BBI submission dated 07 May 2019 (Non-Confidential)

785 Meeting with BBI on 17 May 2019

786 A high site is a mast (similar to those used by MNOs in the form an antenna on a building, the main difference however is that MNOs use licensed spectrum while a WISP such as HeroTel uses spectrum in licence exempt bands (2.4GHz & 5GHz bands) for unlicensed use and for Wi-Fi offloading. Given that a WISP does not pay for the spectrum, they are able to provide data services at reduced costs.

787 This is done purely on a line of site basis, with no obstacles like trees or buildings) and that creates a high-speed connection which gets offloaded on a Wi-Fi router device (typically in the 2,4GHz range).

788 Teleconference with HeroTel on 07 May 2019

680. An important observation for WISPs, which can also be applied to community networks and Wi-Fi projects, is that when it comes to internet or data services, there is no need for national coverage or interconnection (unlike with voice services) and thus there is more opportunity for the entry of small businesses like WISPs and small FTTH providers. All that is needed is an ISP and a connection to a metro or national fibre network. Anything that can be done to further incentivise the ongoing commercial activities in these areas such that access to data service is expanded should be encouraged. This may include incentives to invest in fibre deployments or access to better spectrum to enable WISPs to connect communities where laying fibre is too costly.

8.4 FINDINGS

681. The Commission received submissions alleging that the IP Connect product of Telkom (Openserve) has been priced excessively, and indeed the evidence is consistent with a *prima facie* case of excessive pricing under Section 8(a) of the Act. Given the evidence before the Commission an investigation of the conduct with the possibility of referring an excessive pricing case to the Competition Tribunal appears justified.

682. With respect to the development and expansion of infrastructure, the Commission finds that there is significant commercial activity, and extensive core and metro fibre networks and ongoing investment across the country. Firms such as Vumatel and other FTTH suppliers have closed the fixed line gap to some extent by investing in last-mile infrastructure in higher income urban areas. However, there do appear to be moves to connect lower income areas such as Alexandra and Mitchells Plain, which is encouraging and potentially indicative of next wave of investment in less wealthy areas. The Commission has found three primary concerns that need to be addressed in this area:

682.1 The first concern identified relates to applications for wayleaves. In this regard, the Commission found that wayleave applications are held to be unreasonably expensive in some municipalities, some municipalities cannot process wayleave applications in time and there are instances where towns attach conditions (such as requiring FTTH providers to employ certain people at a higher cost) to wayleaves approvals and these conditions are also inconsistent across municipalities. Stakeholders have informed the Commission that this practice of attaching certain conditions to wayleave applications may make the deployment of infrastructure economically unfeasible.

682.2 The second issue identified by stakeholders relates to business forums. According to stakeholders, business forums are not formalised, and municipalities (especially in Durban and KZN) cannot control the business forums. As a result of this, Vumatel (and other FTTH providers) have stopped deploying infrastructure in KZN.

682.3 The third issue relate to a continued need for incentives to encourage investment in fibre infrastructure in low-income areas whether in terms of metro-level/backhaul or last mile FTTH infrastructure. In this regard aggressive tax breaks or other incentives may be appropriate to accelerate the expansion of fibre access into lower income areas.

683. In terms of alternative access models in low-income areas including rural communities, there are several initiatives and activities aiming at expanding access, particularly for low-income consumers but also rural communities. These include various low-cost operational models mainly using Wi-Fi technologies that have been deployed or that are being explored, ranging from Wi-Fi based networks and community networks to the access provided by WISPs. Thus, this an area of new opportunity and learning where the solutions are not yet clear and government has a key role to play.

Our specific findings on this aspect are as follows:

- 683.1 Firstly, there is a need for free/ low-cost Wi-Fi projects similar to that of City of the Tshwane Free Wi-Fi Project in urban low-income areas. There is also broadly a need for municipalities and government to start thinking about data as a utility and including expansion of access to data in their strategies. In this regard, the metro municipalities can be a starting point with government (DTPS/DCDT) taking a lead role in partnering with these municipalities and supporting them with funding or the facilitation of donor funding to engage in free Wi-Fi projects similar to that of the City of the Tshwane Free Wi-Fi Project. The emphasis should be on creating sustainable projects where possible, that can be transferred into sustainable businesses that offer affordable data. Government should monitor and learn from these initiatives and support municipalities in choosing the most suitable option(s).
- 683.2 Secondly, government (the DTPS/DCDT taking the lead role) should specifically assist in the creation and entry of community networks (like Zenzeleni) and other small or non-profit businesses in the data space. In this regard, a technical or advisory committee of experts such as those assisting in the various current projects should be established to assist the DCDT in capacity-building, advising and growing these businesses and similar developments.
- 683.3 Thirdly, ICASA should look at models and regulatory changes to allow at least non-profit community networks (like Zenzeleni), and possibly even small commercial enterprises to access licensed spectrum not used by mobile operators in rural areas in a similar manner to television white space. Process can be created whereby the licensed operator can reclaim the spectrum which it was assigned in order to invest in that specific area. The provisions for such access will

significantly reduce costs and allow for the economic inclusion of some of the more marginalised citizens of South Africa.

9. RECOMMENDATIONS

9.1 SUMMARY OF PROVISIONAL RECOMMENDATIONS

684. The Commission identified a provisional package of recommendations in the Provisional Report that aimed to provide immediate relief to high prices, especially for low-income consumers, combined with initiatives to improve mobile price competition and greater alternatives for consumers over the medium term.⁷⁸⁹ These included the following:

9.1.1 IMMEDIATE ACTIONS ON RETAIL PRICE STRUCTURE AND LEVEL

685. The programme for immediate relief on data pricing included the following provisional recommendations on the level and structure of pricing:

- 685.1 A commitment by mobile operators to reduce headliner tariff levels to the current effective level of charges inclusive of occasional free data and promotions, which ensures lower average rates are available to all subscribers, all of the time. The greater price transparency also promotes price-based competition.
- 685.2 A commitment by mobile operators to then reduce the price of sub-1GB bundles to within an objectively justifiable and socially defensible range of the 1GB price, provisionally a maximum of 25% higher on a per MB basis. This will provide immediate relief to lower income consumers using smaller data packages. A similar

commitment on maximum out-of-bundle rates relative to in-bundle rates is also required as lower income consumers have been found to be more exposed to these, raising their effective data costs.

685.3 A consistent industry-wide approach to the zero-rating of content from public benefit organisations and educational institutions to ensure broad application.

685.4 Absent such commitments, regulators should coordinate around a legislative or regulatory means to achieve such outcomes which may include amendments to the ECA, additions to ICASA's End-User and Subscriber Service Charter Regulations, obligations or an investigation of excessive pricing to lower income consumers by the Commission.

9.1.2 ADDRESSING COST DRIVERS: SPECTRUM AND FACILITIES LEASING

686. The Commission recommended that high demand spectrum be urgently assigned and a cost-orientated access to a broader range of facilities to reduce infrastructure costs be implemented, alongside obligations to pass on cost savings to lower prices.

686.1 In the assignment of spectrum by ICASA, the objective should be to improve affordability and enhance competition. Any assignment should be contingent upon obligations to pass through cost reductions from greater spectrum access, alongside other obligations to

789 Data Services Market Inquiry Provisional Findings and Recommendations. 24 April 2019, p. 146 - 155.

improve affordable access. This may potentially include the provision of free public Wi-Fi in certain lower income areas or commuter routes, or the extension of fibre backbone infrastructure to such areas. Pro-competitive assignment may include spectrum caps on larger operators, asymmetric assignments and set asides for new entrants such as the WOAN, in a manner that ensures a prospect of commercial success.

- 686.2 The use of existing facilities leasing legislation and regulations to extend the list of essential facilities to include ducts and poles, but also to impose cost-orientated pricing requirements on such facilities. This should reduce costs, especially for challenger networks, and promote more rapid rollout of infrastructure to the benefit of greater price-based competition.

9.1.3 ENHANCING COMPETITION: WHOLESALE MOBILE ROAMING AND MVNOS

687. Owing to the findings on the imbalance in roaming negotiations and on the inadequacy of MVNO activity, the Commission called for the enhancement of price-based competition in the mobile industry by recommending more regulatory scrutiny and potentially action at the wholesale level of the industry in the event there are no voluntary commitments to improve the terms of wholesale access as briefly summarised below.

- 687.1 National roaming arrangements with the smaller networks need to move towards more cost-orientated pricing levels to support the ability of the smaller networks to be more aggressive on price without incurring losses on the roaming side, whilst using roaming as a means to expand capacity to still deliver a high quality data service to new subscribers.
- 687.2 The failure of operators to compete for MVNO arrangements also needs to be addressed, along with the level of wholesale pricing to resellers more

generally. Whilst the WOAN has been proposed as one means to address this market failure, voluntary commitments to improve the terms of access amongst existing operators in the short-term, failing which regulatory action, is still most likely required as a more immediate solution whilst the WOAN gets established.

- 687.3 In both these cases, some form of functional and/or accounting separation may be required of the larger networks if there is to be greater transparency as to the costs of the radio access network (RAN) and core network relative to the retail services. Such separation may also provide more appropriate incentives to the network layer to engage in fairer access pricing to third parties relative to the operator's own retail division. These are certainly some of the lessons from the Telkom settlement agreement with the Commission which is widely perceived to have had a transformative impact on wholesale infrastructure access in fixed line.

- 687.4 In addition, the history of failure to engage in necessary wholesale regulation, not just of mobile but also fixed line markets, which has resulted in entrenched concentration strongly suggests that reform to the legislative and/or regulatory framework is most likely required if the institutions are to deliver on this type of regulatory action going forward. It would seem that not only are the preconditions for regulatory action under section 67 of the Electronic Communications Act (ECA) unnecessarily onerous, but they may also serve to limit the degree of collaboration between regulators. For instance, there would seem to be no basis currently on which ICASA could regulate based on findings by the competition authorities, either in market inquiries or as a result of enforcement action. More effective means of inter-regulator collaboration would strengthen regulatory oversight, enforcement and regulation in these

markets. The current process to amend the ECA presents an opportunity to bring about such changes.

9.1.4 DEVELOPMENT OF ALTERNATIVE INFRASTRUCTURE FOR DATA SERVICES

688. The Commission noted in its Provisional Report that the development of alternative infrastructure to mobile in poorer areas is an essential component of any long-term solution to high data prices in South Africa as this will serve to provide off-load opportunities for free or at lower prices to consumer, but also provide an additional point of competitive pressure on mobile prices if there is a more pervasive presence. Given that submissions pertaining to this area of the inquiry were limited, the Commission continued with this part of the Inquiry post the release of the Provisional Report (see Section 9 above). Nevertheless, the Commission did make provisional recommendations in this regard which were divided into two broad parts as follows:

Development of backbone infrastructure to support alternative data services in low-income areas

689. In this regard the Commission recommended that government should look to use its own demand and facilities to reduce the costs of investment in both backhaul and last mile infrastructure into lower income areas, and improve the investment case with base customer demand. This would enhance the investment case for private providers to roll out infrastructure and/or use any base infrastructure to innovate around commercial models for business and residential supply in these areas. This initiative may begin with fast-tracking the intended rapid infrastructure deployment strategy which sought to facilitate greater ease in acquiring wayleaves and the use of municipal infrastructure such as poles for aerial deployment.

690. More generally, government should ensure that where it does make use of its procurement in these markets that this is done in a manner which supports a more competitive environment, be it through

supporting smaller players / new entrants or facilitating open access on the infrastructure.

Development of free and/or pay-wall public Wi-Fi in low-income areas (commuter routes and public spaces).

691. The Commission recommends that local and national government, under the lead of the Department of Communications (DOC), actively support the development of free public Wi-Fi in low-income areas, including commuter points (e.g. train stations, taxi ranks) and public spaces (e.g. parks, shopping areas, government service offices). The initiative should look to crowd in private provision in order to reduce the cost and extend the reach of the programme. This will require innovation around business models, such as a limited free service in exchange for the ability to offer a premium subscription service or models based on advertising and/or data use.

9.2 SUBMISSIONS IN RESPECT OF THE PROVISIONAL RECOMMENDATIONS

692. After the release of the Provisional Report, the Commission received numerous submissions in respect of the recommendations in the Provisional Report. The following section provides a summary of the submissions directly relevant to the provisional recommendations, rather than the findings underpinning the recommendations. It first considers submissions as to the overall approach and then submissions specific to each category of recommendations in the Provisional Report.

9.2.1 SUBMISSIONS ON THE COMMISSION'S OVERALL APPROACH TO PROPOSING ITS PROVISIONAL RECOMMENDATIONS

693. The Commission has received various submissions regarding its overall approach to its proposed recommendations, which we discuss further below. The first part covers those stakeholder submissions which generally support the Commission's

approach to the Commission's proposed recommendations, after which those alternate or opposing stakeholder views are presented.

- 693.1 Broadband Infraco submits that, from a qualitative point of view, it appreciates the Commission's approach to the provisional recommendations *"in that both remedial measures and alternative data supply sources were put forward as means to correct the country's problem of a lack of access to data services."*⁷⁹⁰
- 693.2 In terms of the Commission's approach to its recommendations, Telkom submits that the Commission has *"gone to great lengths to attempt to understand the telecommunications sector and to think creatively around potential solutions to the issues it perceives to exist"*.⁷⁹¹
- 693.3 Amandla.mobi states in its submission that it strongly endorses the Commission's approach that mobile operators be asked to make certain commitments and only on the basis of such commitments to release additional spectrum.⁷⁹²
- 693.4 The SOS Coalition submits that it *"broadly agrees with the analysis undertaken by the Competition Commission in its Draft Digital Services Market Inquiry Report, and agrees with the majority of its conclusions and recommendations"*.⁷⁹³
- 693.5 MMA submit that it acknowledges *"the robust approach taken by the Commission through the Inquiry, and the important preliminary findings and recommendations regarding the current state of competition in the telecommunications sector being anti-poor."*⁷⁹⁴

694. In addition to the submissions above, there were a number of alternative views, or criticisms, offered by stakeholders in regard to the Commission's approach to proposing its provisional recommendations, which are presented below.

- 694.1 Vodacom submits that it views the Commission's approach to reaching the recommendations in the Provisional Report as unclear and resulting in many different and opposing remedies where no iterative process has been followed and no consideration given to how the different remedies would interact with each other.⁷⁹⁵ It views the Commission's approach as extending further than the usual *ex-ante* remedies which Vodacom views as regulators first identifying a failure in the retail market and then imposing a remedy in the most upstream market.⁷⁹⁶
- 694.2 The Commission's approach to its recommendations, according to Vodacom, is intrusive and lacking in acknowledgement of the constraints that operators face in South Africa. Vodacom note that structural remedies should only be considered in cases where there exist competitive bottlenecks that limit competition, and the Commission's approach has not included a proper competition assessment of the market which would typically include market definition and an assessment of dominance.
- 694.3 Additionally, Vodacom points to proportionality in that the least intrusive remedy should be employed when two alternative options could reach the same result. Vodacom states that it is not clear why remedies at the wholesale level would not be sufficient if there exists a lack of competition at

790 Broadband Infraco submission, 7 May 2019, p.1
791 Telkom submission, 14 June 2019, p.3, para 7.1(Non-Confidential)
792 Amandla.mobi submission, 14 June 2019, p3.
793 SOS Coalition submission, 14 June 2019, p12.
794 MMA submission 14 June 2019, p2.
795 Vodacom submission, 14 June 2019, p 176. (Non-Confidential)
796 Vodacom submission, 14 June 2019, p. 177 (Non-Confidential)

the retail level (which it does not accept is the case).⁷⁹⁷ Vodacom also note that the Commission, in their approach, should first allow wholesale regulatory processes to proceed before it proposes retail market interventions.

694.4 MTN similarly views the Commission's recommendations as onerous in that it notes that no operator in the mobile data market has broken any law including the Competition Act in its view. MTN views the proposed recommendations as *"irrational, unreasonable and disproportionate"* especially considering the Commission has failed to show that MTN has substantial market power and that there has been an abuse of dominance, as well as failing to conduct a cost-benefit analysis of the proposed recommendations (which it views as unreasonable and not aligned to *"good regulatory practice"*).⁷⁹⁸

694.5 Telkom submits that some of the proposed recommendations (especially those concerning the retail prices of mobile data services) will not achieve the Commission's desired objectives as they are *"not founded on competition grounds, nor would these enhance competition"* and could result in *"unintended adverse consequences for competition and consumers"*.⁷⁹⁹

694.6 Cell C has concerns with the Commission's approach to its recommendations in terms of regulation within telecommunication markets. Cell C's submission acknowledges the Commission for taking into account certain concerns, like structural features of the market and spectrum issues, while also viewing the proposed recommendations as generally unsubstantiated and not aligned to industry precedent concerning

the requirement for regulation in telecommunication markets.⁸⁰⁰ Cell C, in this regard, notes that wholesale regulation should be the form of regulation that is conducted in the mobile market as this would then benefit retail competition, and it is the approach that ICASA has followed. Appropriate wholesale regulations, Cell C state, would better serve to remedy structural problems in the market. Cell C views the Commission's approach to retail price intervention as likely to result in the significant risk of unintended outcomes.⁸⁰¹

9.2.2 SUBMISSIONS ON RECOMMENDATIONS RELATING TO THE STRUCTURE OF DATA PRICES AND "ANTI-POOR" PRICING

695. The Commission has received various submissions regarding its proposed recommendations regarding retail price structure and levels, which we discuss further below in relation to the reduction of headline tariffs to effective prices and price discrimination, as well as the zero-rating of Public Benefit Organisation (PBO) content. The first part of each sub-section covers the stakeholder submissions which generally support the proposed recommendations, after which the alternate or opposing stakeholder views are presented.

Submissions regarding the reduction of headline tariffs to effective prices and price discrimination recommendations

696. The following submissions broadly supported or aligned with the Commission's provisional recommendations on a reduction in headline tariffs and on price discrimination:

696.1 SOS expressed its agreement with the Commission that the pricing structure of data disadvantages poor South African consumers. Its own calculations

797 Vodacom submission, 14 June 2019, p. 177(Non-Confidential)

798 MTN submission, 14 June 2019, p.50 para 5.10.1-5.10.2 (Non-Confidential)

799 Telkom submission, 14 June 2019, p.3, para 7.3 (Non-Confidential)

800 Cell C's submission, 14 June 2019, p.9 & 18 (Non-Confidential)

801 Cell C's submission, 14 June 2019, p.9 & 18 (Non-Confidential)

suggest that data for consumers of small bundles cost upwards of 300% more than the per megabyte price of larger-sized bundles. SOS advocates for the imposition of full parity pricing per MB, which it says would promote universal access. It also suggests a provision of a mandatory 'lifeline' data allocation per user as is the case with water service provision.⁸⁰² Furthermore, SOS broadly supports the interventions proposed by the Commission to drive down the price of data services. It further recommends that ICASA undertake a full Chapter 10 inquiry into data service pricing as was done with respect to mobile termination rates, which lead to regulatory interventions that put downward pressure on mobile voice prices.⁸⁰³

696.2 In its submission, RIA also supports the Commission's recommendation that there should be a reduction in operators' headline prices. It notes that it is essential for the Commission to conduct a detailed market review in order to understand the cost of data services provision in order to create a competitive market outcome where prices are closer to costs.⁸⁰⁴

696.3 R2K supports the call for more transparency in the pricing of data and calls for there to be a publicly available record of true data pricing to allow consumers to compare and break down their cost of data so they can make informed decisions.⁸⁰⁵ This view was echoed by Sutherland who proposed, as a possible way to improve transparency, that operators be required *"to disclose effective rates to customers, perhaps with an app to show how much data was really costing."*⁸⁰⁶

696.4 DGMT supports the Commission's recommendations in general and more specifically in relation to the following:⁸⁰⁷ the reduction of the price of sub-1GB prepaid data bundles such that price differences between smaller volume and larger volume bundles, as well as between prepaid and postpaid, are reduced to levels that are objectively justified and socially defensible; the move for voluntary commitment from mobile operators to reduce data prices and that in the absence of such commitments, authorities should act upon market interventions that would achieve this outcome.

697. In addition to the submissions above, there were a number of alternative views, or criticisms, offered by stakeholders in regard to the recommendations relating to a reduction in headline tariffs and price discrimination contained in the Provisional Report. These are summarised as follows:

697.1 Regarding the recommendation that MNOs voluntarily commit to changing the structure of retail pricing by reducing the differential between the price of smaller and larger volume bundles, MWEB suggests that if licensees were to sell prepaid and postpaid bundles of 500MB or less for the same price, the playing field between consumers will be levelled to some extent without disrupting the operating models of licensees.⁸⁰⁸

697.2 Sutherland points out what he calls a 'weakness' in the Commission's recommendation regarding the immediate relief on data pricing. He criticised the alternative recommendation from the Provisional Report which reads, *"Absent such commitments, regulators should*

802 SOS submission, 14 June 2019, p.10
803 SOS submission, 14 June 2019, p.10
804 RIA's submission, 14 June 2019, para. 8.13
805 R2K's submission, 14 June 2019, p.6
806 Ewan Sutherland's submission, p.3
807 DGMT's submission, 28 May 2019
808 MWEB's submission, 14 June 2019, p.1

*coordinate around a legislative or regulatory means to achieve such outcomes which may include amendments to the ECA, additions to ICASA's End-User and Subscriber Service Charter Regulations, obligations or an investigation of excessive pricing to lower income consumers by the Commission".*⁸⁰⁹The gist of his concern is that these actions are, at best, medium-term efforts and could easily be delayed and/ or rendered ineffective.

- 697.3 In terms of the operators' views of the provisional recommendations, Vodacom, MTN and Telkom have all argued that price regulations intended to reduce the gap between the per MB rates of large and small bundles and in-bundle and OOB rates will likely reduce competition, innovation, and choice which may harm the poor.⁸¹⁰ Furthermore, Vodacom considers the recommendation to reduce headline tariffs to actual effective prices as likely to result in less promotional offers and personalised pricing going forward (as these could increase the difference between headline and effective prices) and that this could have negative outcomes for low-income consumers in the longer term.⁸¹¹
- 697.4 MTN argues that the Commission cannot justify changing the retail price structure as their claims about anti-poor pricing are incorrect.⁸¹² MTN states that the Commission has not done a cost-benefit analysis (taking into account potential unintended consequences) that would support the implementation of price regulation, and

in the form it has proposed.^{813,814} MTN views the recommendations on retail price structure as inappropriate and unnecessary as MTN has implemented many initiatives to lower retail prices which have occurred without any regulatory interventions such as new lower OOB rates (as of 1 December 2017).⁸¹⁵ Vodacom, similarly, submits that its recent pricing transformation strategy, [3<], has not been considered by the Commission and that its proposals are not based on sound economic reasoning.⁸¹⁶ It views that any further price decreases need to be driven by measures which lower the cost of service provision, such as the allocation of high demand spectrum (HDS).

- 697.5 Vodacom, MTN, and Telkom believe that the regulations are likely to adversely affect poor consumers. Telkom argued that besides being impractical, they may potentially create adverse incentives for operators. Vodacom referred to Mr Richard Feasey's report in which he argued that the regulation proposed by the Commission will have the effect of forcing low-income consumers to spend more and high-income consumers to spend less.⁸¹⁷ MTN noted that the recommendations will hinder innovation, the number of competitive offers available, and the ability of subscribers who spend the least on mobile services to enjoy lower effective rates.⁸¹⁸
- 697.6 Vodacom, Cell C, and Telkom have argued that the use of a 1GB bundle as a reference tariff will have unintended and

809 DSMI Provisional Findings and Recommendations Report, 24 April 2019, p.18, para 37.4

810 Vodacom's submission, 14 June 2019, p.180-181; 183-184 (Non-Confidential); MTN's submission, 14 June 2019, p.52 (Non-Confidential); Cell C's submission, 14 June 2019, p.14 (Non-Confidential); Telkom's submission, 14 June 2019, p.46-47, para. 91 (Non-Confidential)

811 Vodacom's submission, 14 June 2019, p. 182 (Non-Confidential)

812 MTN's submission, 14 June 2019, p.51, para 5.19 (Non-Confidential)

813 MTN's submission, 14 June 2019, p.50-51(Non-Confidential)

814 MTN's submission, 14 June 2019, p.51(Non-Confidential)

815 MTN's submission, 14 June 2019, p.51, para 5.18 (Non-Confidential)

816 Vodacom's submission, 14 June 2019, p.169 (Confidential)

817 Vodacom's submission, 14 June 2019, p.183-184 (Non-Confidential)

818 MTN's submission, 14 June 2019, p.52 (Non-Confidential)

undesirable consequences. Vodacom has suggested that mobile operators may circumvent the legislation by introducing new bundle sizes just above the 1GB level.⁸¹⁹ Cell C argued that since the 25% differential is [3<], operators are likely to offer a [3<], which will [3<].⁸²⁰ Telkom has noted that operators may respond to the regulations by raising the effective price of 1GB bundles instead of lowering the price of small bundles.⁸²¹ In addition, Vodacom noted that the reduction in the variance between in-bundle and out-of-bundle rates are likely to put upward pressure on in-bundle rates.⁸²²

697.7 Mr Richard Feasey, on behalf of Vodacom, further argued that the Commission's proposed 25% difference in the per MB rate of bundles below 1GB and the 1GB bundle as well as in-bundle and out-of-bundle data is arbitrary and unjustified.⁸²³ MTN also criticised the recommendation of a 25% difference across different size bundles and between in-bundle and out-of-bundle data as not being substantiated and thus arbitrary.⁸²⁴

697.8 Telkom has noted that the Commission's recommendations on price convergence of different sized bundles is unclear. In particular, it requires clarity on aspects such as which validity period is applicable, whether the reference price is the standalone price of a 1GB bundle or the effective price of 1GB of data, and how promotions will be accounted for.^{825 826}

697.9 ICASA submitted that it is not certain as

to how the Commission arrived at the proposed 25% maximum difference between the price of bundles smaller than 1GB and the average effective 1GB bundle price as well as the same maximum difference for OOB data rates relative to in-bundle rates. ICASA states it would be appropriate to conduct a cost analysis study to determine the suitable figure here (if any).⁸²⁷

697.10 The operators submit that the Commission's concerns over out-of-bundle prices relative to in-bundle prices have already been addressed. Vodacom noted that its out-of-bundle charges have already been reduced significantly.^{828 829} Cell C also argued that the Commission's concerns about out-of-bundle rates have been effectively addressed by the ICASA's End User Regulations and no further intervention is required.⁸³⁰

Submissions on recommendations regarding the zero-rating of PBO content

698. The following submissions broadly supported the Commission's provisional recommendations regarding the zero-rating of PBO content:

698.1 DGMT supports the Commission's recommendation to formalize and regulate the zero-rating of PBOs but also added that such zero-rating should not place onerous technical and reporting requirements on the PBOs, which would lead to increased costs. DGMT further indicated that they are in the process of testing a Social Innovation Register which will independently vet and approve organisations that are eligible

819 Vodacom's submission, 14 June 2019, p.183-184 (Non-Confidential)

820 Cell C's submission, 14 June 2019, p.12 (Confidential)

821 Telkom's submission, 14 June 2019, p.46 (Non-Confidential)

822 Vodacom's submission, 14 June 2019, p.184-185 (Non-Confidential)

823 Vodacom's submission, 14 June 2019, p.183 (Non-Confidential)

824 MTN's submission, 14 June 2019, p.51 (Non-Confidential)

825 Telkom's submission, 14 June 2019, p. 48 (Non-Confidential)

826 Telkom's submission, 14 June 2019, p.49 (Non-Confidential)

827 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p.2.

828 Vodacom's submission, 14 June 2019, p.185 (Non-Confidential)

829 Telkom's submission, 14 June 2019, p.48-49 (Non-Confidential)

830 Cell C's submission, 14 June 2019, p.14 (Non-Confidential)

for zero-rating. DGMT is available to share these experiences with interested parties.

698.2 Telkom supports the recommendation that there should be an industry-wide approach to the zero-rating of content from public benefit organisations and education institutions.⁸³¹ Vodacom appear to support the zero-rating of PBO's as it is stated that they themselves already zero-rate PBO content and will continue to do so.⁸³² Vodacom provide some examples in this regard, such as free education via a free portal from a collaboration between Vodacom and the Department of Education and free Wi-Fi to 26 universities in South Africa.⁸³³

699. The Commission also received a few alternative views, or criticisms, offered by stakeholders in regard to the recommendations regarding the zero-rating of PBO content.

699.1 MWEB noted in its submission that formalising and regulating the zero-rating of PBOs is technically unviable. This is because complex systems would need to be developed to identify this type of traffic. According to MWEB, maintaining an accurate directory of those sites that qualify for zero-rating would be very difficult to manage.⁸³⁴

699.2 SOS also noted reservations about formalising the provision of zero-rated content as it may impact on net neutrality and create perverse incentives for content providers to be defined as zero-rated services.⁸³⁵

699.3 MTN appears to be the only operator who registered its opposition to formalising the zero-rating of PBOs. Regulating this may stunt MNOs'

abilities and incentives to extend zero rating to other applications that are not mandatory, threatening the dynamic by which MNOs compete by offering applications that they think subscribers will value at a low cost. Secondly, MTN notes that the regulations could also harm competition amongst application developers and third-party service providers who approach MNOs to arrange zero rating for their applications. Thirdly, MTN argues that it is very difficult to decide on which applications are worthy of being zero-rated. It is not clear what priorities poorer subscribers have and why the Commission would be able to make that judgement call.⁸³⁶

9.2.3 SUBMISSIONS ON RECOMMENDATIONS RELATING TO SPECTRUM AND FACILITIES

700. The Commission has received various submissions from stakeholders regarding its proposed recommendations concerning spectrum and facilities access regulation, which is discussed by sub-section further below. The first part of each sub-section covers those stakeholder submissions which generally support the proposed recommendations, after which those alternate or opposing stakeholder views are presented.

Spectrum

701. In its submission to the Commission, SOS agreed that the lack of high-demand spectrum limits the reduction of data prices as well as the quality and wider bandwidth necessary for online delivery of broadcast-like content.⁸³⁷ SOS agreed that high-demand spectrum needs to be made available quickly, requiring that the Minister issue her final policy direction in this respect on an urgent basis.⁸³⁸ It also agrees that the

831 Telkom's submission, 14 June 2019, p.49 (Non-Confidential)
832 Vodacom's submission, 14 June 2019, p.185 (Non-Confidential)
833 Vodacom's submission, 14 June 2019, p.185 (Non-Confidential)
834 MWEB's submission, 14 June 2019, p.1
835 SOS submission, 14 June 2019, p.11
836 MTN's submission, 14 June 2019, p. 52-54 (Non-Confidential)
837 SOS submission, p6, para 3.3
838 SOS submission, p10, para 5.4

method for allocating this spectrum should not aim to maximise revenues.⁸³⁹

702. Afrihost agrees with the Commission's recommendation that [redacted].⁸⁴⁰
703. RIA welcomes the Commission's recommendation to urgently assign high demand spectrum as this spectrum can allow the provision of 4G/LTE services in a more cost-effective way and this assignment process has been delayed for years.⁸⁴¹
704. Vodacom agrees with the Commission regarding the urgent need for additional spectrum to be made available to operators, as South Africa currently lags behind other countries in terms of mobile spectrum availability and spectrum scarcity increases mobile operators' costs.⁸⁴² Vodacom also agrees with the Provisional Report in that the WOAN should not be allocated all high demand spectrum as this would create a "near-monopoly RAN provider".⁸⁴³
705. In terms of spectrum scarcity, MTN similarly agrees with the Provisional Report in this regard, stating that an obvious recommendation is the allocation of more spectrum for operators in South Africa's spectrum-constrained environment.⁸⁴⁴
706. Cell C, like other operators eager to access additional spectrum, agrees with the Provisional Report in terms of the prioritisation of the assignment of high demand spectrum to avoid any further delays in the process.⁸⁴⁵ Cell C supports the Provisional Report regarding the recommendation⁸⁴⁶ that ICASA should use the spectrum assignment process to impose

pro-competitive obligations and licence conditions on operators.⁸⁴⁷

707. In regard to spectrum assignment, Telkom (like Cell C) also appears to approve of the Provisional Report's recommendation that any new spectrum assigned to existing operators or the WOAN must be pro-competitive in its design and impact.⁸⁴⁸
708. In terms of the Commission's provisional recommendations, ICASA notes that the assignment/licensing process in relation to the licensing of HDS is detailed in Regulation 7 of the Radio Frequency Spectrum Regulations (2015) read together with section 31(3(a) of the ECA.⁸⁴⁹ ICASA submits that the consultative nature of the Licensing Process will ensure that all stakeholders can make submissions to ICASA at various intervals. Furthermore, ICASA notes that the Memorandum of Understanding between ICASA and the Commission allows for the establishment of a Joint Working Committee in which the two regulatory bodies can engage on areas of overlapping jurisdiction.⁸⁵⁰
709. The recommendations in the Provisional Report regarding spectrum drew some opposing or alternative views from stakeholders, which we summarise below.
- 709.1 Afrihost believes that [redacted].⁸⁵¹ Afrihost is of the view [redacted] is not the solution to competition problems [redacted]. Rather, Afrihost calls for regulation of the [redacted] and the [redacted] can compete to provide low prices to consumers.⁸⁵²

839 SOS submission, p10, para 5.6

840 Afrihost's submission, 14 June 2019, p.7 (Confidential)

841 RIA's submission, 14 June 2019, para. 8.2.1

842 Vodacom written submission to Provisional Findings Report of DSMI. 14 June 2019, p.92 (Non-Confidential)

843 DSMI Provisional Findings and Recommendations. 24 April 2019, p.90, para. 285.1

844 MTN response to the DSMI Provisional Report. 14 June 2019, p.5 (Non-Confidential)

845 Cell C's submission, 14 June 2019, p.22 (Non-Confidential)

846 Data Services Market Inquiry Provisional Findings and Recommendations. 24 April 2019, p.150, para. 493.8

847 Cell C's submission, 14 June 2019, p.23 (Non-Confidential)

848 Data Services Market Inquiry Provisional Findings and Recommendations. 24 April 2019, p. 150, para. 493.6.

849 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p.16

850 ICASA response to the Provisional Findings Report of DSMI, 26 June 2019, p.16.

851 Afrihost's submission, 14 June 2019, p.8 (Confidential)

852 Afrihost's submission, 14 June 2019, p. 2 (Confidential)

- 709.2 Although SOS has long urged the completion of digital migration, given the ongoing delays, it has called for a review of the project in its entirety with the possibility that introducing DTT be shelved in favour of satellite delivery.⁸⁵³ This, it argues, will further help free up in the short-term the spectrum so needed to reduce data prices.⁸⁵⁴ The SOS suggest that the award of spectrum, in an aim to benefit the current users of data as well as those who currently lack access, be connected to data service pricing (directly or indirectly) and universal access commitments like coverage targets and 'lifeline' data provision.⁸⁵⁵
- 709.3 RIA recommends reducing some of the cost drivers associated with broadening services such as (i) making unused spectrum available to communities and entities wishing to offer low-cost services, (ii) enabling the "*deployment of dynamic spectrum technologies on the vastly underutilized spectrum available in rural areas which can be deployed at a fraction of the cost of GSM services*", and (iii) expediting the roll out of public Wi-Fi (as mandated by SA Connect) especially to schools.⁸⁵⁶
- 709.4 SOS expressed concern that the Commission has given credence to the licensing of a WOAN provider and providing spectrum to the WOAN. SOS is firmly opposed to this as SOS believes that the proposed WOAN will obstruct the reduction in data prices.
- 709.5 Broadband Infraco ("BBI") have argued that State Owned Companies ("SOCs") with statutory mandates to increase access to and affordability of wireless

broadband services be granted preferential access to High Demand Spectrum. This would serve to improve internet access and possibly also help reduce mobile data prices since the beneficiaries will have alternative ways to access the internet.⁸⁵⁷ BBI has noted that another requirement for license allocation is that spectrum licence fees have to be proportionate to the expected ARPU operators can be expected to generate from users of the network. Annual spectrum licence fees for licensees providing services in rural communities should be zero or close to it. Additionally, BBI notes that if high demand spectrum is prioritised for SOCs and is proportionate to the expected ARPU, BBI will not provide last mile services itself. Instead, Access Network Providers would buy wholesale wireless broadband capacity from BBI and then bundle it and on-sell it.

- 709.6 Vodacom states that the Commission's view that ICASA should consider imposing a pro-competitive asymmetry in the design of spectrum assignment is unfounded and that any remedies applied before spectrum is assigned could be unnecessary or disproportionate.⁸⁵⁸ The smaller operators in South Africa, according to Vodacom, have much more spectrum per subscriber than the larger operators so Vodacom views the '*pro-competitive asymmetric allocation*' as having no economic rationale and that limiting the larger operators' quantity of spectrum could cause various unintended consequences like spectrum being under-utilised, spectrum left unsold

853 The release of digital dividend spectrum needs to account for technological change and market shifts. Both analogue and digital terrestrial television are dying markets "...facing fundamental inroads from over-the-top (OTT) and streaming services delivering television-like content" and "...subscription services delivered via satellite". In fact, the consumption of premium television content has shifted to digital satellite platforms along with the bulk of advertising spend. Source: SOS submission, 14 June 2019, p.8

854 SOS submission, 14 June 2019, p.6,8, 10

855 SOS submission, 14 June 2019, p.10-11

856 RIA's submission, 14 June 2019, para. 8.2.2

857 Broadband Infraco's submission, 7 May 2019, p. 1-2

858 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.186. (Non-Confidential)

- and large operators remaining capacity constrained.⁸⁵⁹
- 709.7 Furthermore, Vodacom considers the recommendation regarding a commitment to pass on cost reductions as a condition for acquiring additional spectrum as “completely unprecedented” and views it “inappropriate to recommend the imposition of Chapter 10/ Market review-type remedies, a process currently underway by ICASA, as part of an auction”⁸⁶⁰ Vodacom views these stringent conditions and caps on larger operators as leading to worse consumer outcomes (like higher prices, poorer quality, less competition) as well as being “mutually inconsistent” in that cost reductions would be limited if larger operators get a smaller relative spectrum allocation.⁸⁶¹
- 709.8 Vodacom submits that ICASA should prioritise spectrum efficiency as its top objective when the regulator designs the future spectrum award and not impose a “pro-competitive asymmetry” as this would “...exclude the most efficient operators in the market”. Vodacom also notes that the Commission’s remedies that concern a WOAN (like mandated national roaming and MVNO access) are “both unprecedented and completely disproportionate”.⁸⁶²
- 709.9 MTN claims, in line with Vodacom, that the Commission’s view on pro-competitive spectrum allocations does not recognise that in order for the spectrum allocation to have a great effect in lowering costs and benefitting consumers, the spectrum would need to be provided to the large operators

that are currently the most spectrum constrained.⁸⁶³ MTN considers a cost-benefit analysis of asymmetric spectrum assignments or set asides for new entrants as necessary for the Commission’s recommendations on spectrum. According to MTN, the Commission has also not analysed the WOAN’s probable effect on pricing and market efficiency nor has the Inquiry considered the likely impact the WOAN could have on wholesale pricing and investment.⁸⁶⁴ Furthermore, MTN views the proposed additional conditions to be applied to the allocation of spectrum as unwarranted and vague and these conditions would need to be justified via a comprehensive analysis which should include a cost-benefit and feasibility analysis.⁸⁶⁵

- 709.10 In terms of spectrum sharing and the regulatory regime, MTN views that the regulations governing spectrum sharing and trading, as well as other network resources, could limit efficient network sharing and spectrum trading, and prevent further effective wholesale competition. MTN note that other jurisdictions “have more permissive regulatory regimes, and accordingly allow more effective and more efficient spectrum trading and network sharing arrangements”.⁸⁶⁶ MTN argues that a clear recommendation for the inquiry should be “the allocation of more spectrum, and a more efficient and pro-competitive regulatory stance towards spectrum sharing and trading”.⁸⁶⁷
- 709.11 Cell C views it unlikely that a new entrant or WOAN will make the best use of high demand spectrum, particularly due to the need for current licensees to increase

859 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.187. (Non-Confidential)

860 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.187 (Non-Confidential)

861 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.188 (Non-Confidential)

862 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.115 (Non-Confidential)

863 MTN response to the DSMI Provisional Report. 14 June 2019, p.55, para.5.23.4-5.23.5 (Non-Confidential)

864 MTN response to the DSMI Provisional Report. 14 June 2019, p.55, para.5.23.32-5.23.33 (Non-Confidential)

865 MTN response to the DSMI Provisional Report. 14 June 2019, p.55, para.5.23.34-5.23.36 (Non-Confidential)

866 MTN response to the DSMI Provisional Report. 14 June 2019, p.55, para 5.23.37 (Non-Confidential)

867 MTN response to the DSMI Provisional Report. 14 June 2019, p.5, para 1.10 (Non-Confidential)

network capacity in order to meet rising data demand. Cell C, instead, views that a better recommendation would be to use wholesale access obligations on licensees (on reasonable terms) to be granted by dominant operators in return for high demand spectrum.⁸⁶⁸ Cell C views that [S&K].⁸⁶⁹ Cell C notes further that *“any rural coverage obligations should be carefully specified and should recognise that national roaming is an effective and efficient means for a rural network to be better utilised through wholesale access”*.⁸⁷⁰

709.12 Regarding the assignment of spectrum to operators, Telkom observes that the Provisional Report does not provide any reasons to justify the view that current spectrum assignments to operators should be reassigned, and it states that the resulting unintended consequences have not been addressed in the report. Telkom states that *“current spectrum holdings play a critical and central role in capital expenditure plans, network design and overall commercial strategy”*.⁸⁷¹ In terms of any new spectrum assigned to operators, Telkom states that *“it would be preferable to first focus on assigning new spectrum according to the pro-competitive principles outlined in the report and then revisit whether it is still necessary to reassign unused spectrum between operators”*.⁸⁷² Telkom also share their view that Vodacom and MTN should not be assigned any new spectrum until sub-1Ghz spectrum becomes available and it assigned to Telkom (as the delay in the digital migration has resulted in Telkom not being able to receive sub-1Ghz spectrum).⁸⁷³

709.13 Mr Walter Brown argued in his submission that certain “Digital Dividend” spectrum bands of 450MHz, 700MHz, and 800MHz ought to be dedicated to pro-poor ICT services as these spectrum bands are not required by the large mobile operators.⁸⁷⁴

709.14 On the recommendation by the Commission for spectrum allocation to be designed in a pro-competitive manner, Sutherland warned that this might end up in courts and be subject to lengthy litigation processes thereby resulting in considerable delays.⁸⁷⁵ Sutherland proposes that ICASA conduct a full assessment and publish tables of allocated spectrum, with comparisons with BRICS and SADC countries.

Facilities leasing and access

710. With regards to the recommendations in the Provisional Report on facilities access, Vodacom submits that it strongly supports mandated access to ducts and poles as *“access to fixed passive infrastructure is critical for the promotion of infrastructure-based competition”*.⁸⁷⁶ Vodacom views this as consistent with the European Commission’s approach which places more importance on *“mandating access to passive infrastructure (ducts and poles) rather than to active products”*.⁸⁷⁷

711. The recommendations in the Provisional Report regarding facilities access received some opposing or alternative views from stakeholders, which we summarise below.

711.1 While Vodacom recognise the importance of mandated access to ducts and poles, it notes that *“requiring*

868 Cell C’s submission, 14 June 2019, p.22-23, para.6.4 (Non-Confidential)

869 Cell C’s submission, 14 June 2019, p.24, para.6.7.2 (Confidential)

870 Cell C’s submission, 14 June 2019, p.24, para.6.7.3-6.7.4 (Non-Confidential)

871 Telkom submission to DSMI Provisional Report. 14 June 2019, p.26, para.54.1 (Non-Confidential)

872 Telkom submission to DSMI Provisional Report. 14 June 2019, p.27. para.54.2 (Non-Confidential)

873 Telkom submission to DSMI Provisional Report. 14 June 2019, p.4. para.7.6-7.7 (Non-Confidential)

874 Walter Brown submission to DSMI Provisional Report, 13 June 2019, p.15.

875 Ewan Sutherland’s submission, page 12

876 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.188 (Non-Confidential)

877 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.188 (Non-Confidential)

*this to be done on a cost-orientated basis could have unintended consequences. The impact of it should be considered.*⁸⁷⁸

711.2 Cell C acknowledges the Commission's consideration of its arguments in relation to the cost of wholesale access (particularly in relation to site and facilities access and national roaming), but it also views that the Commission has not gone far enough in its recommendations. Cell C argues that there is a need to define and deal with essential facilities. According to Cell C, "ICASA has not fulfilled the requirements of section 43(8) of the ECA which obliges it to "prescribe a list of essential facilities" and a list of examples of essential facilities is given..."⁸⁷⁹ Cell C also considers that the Commission should "urge ICASA to (i) complete its inquiry into the broadband value chain as soon as possible having defined facilities and site-sharing as a relevant market and/or (ii) undertake a new consultation on the Facilities Leasing Regulations as a matter of urgency, and with a view to determining pricing under section 47 of the ECA."⁸⁸⁰

711.3 Telkom submits that "if interventions aimed at improving access to mobile sites are introduced, they should not be limited to high sites only, but to any mobile site where demand for access exists and where it is technically feasible to provide such access. This should include potential sites on municipal properties."⁸⁸¹

711.4 MTN is of the view that the Commission failed to consider or even acknowledge "that there is a trade-off between decreasing costs in the short term

*and the risk of the very likely harm to investment incentives in the long term that would be created by mandated access to infrastructure".*⁸⁸² MTN further adds that the Commission did not perform any necessary cost-benefit analysis of mandated access to infrastructure.

711.5 Mr Brown noted that there are various ways in which to further fibre optical broadband reticulation via the combined use of overhead pole routes owned by Eskom and other utilities, including Telkom.⁸⁸³

711.6 Sutherland doubts the capabilities of the existing legislation to cater for network sharing. He states that new legislation and the strengthening of the regulator is required to avoid delays and failure of any attempts on facilities or network sharing. Sutherland's view is that if facilities sharing could be enforced under the Competition Tribunal then it would be worthwhile pursuing.

9.2.4 SUBMISSIONS ON RECOMMENDATIONS REGARDING WHOLESALE MOBILE ROAMING AND MVNOS

712. The Commission has received various submissions from stakeholders regarding its proposed recommendations concerning wholesale mobile competition and MVNOS, which is presented further below. The first section covers those stakeholder submissions which generally support the proposed recommendations, after which those alternate or opposing stakeholder views are presented.

712.1 Afrihost agrees with the Commission's recommendation that [X].⁸⁸⁴

878 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.188 (Non-Confidential)
879 Cell C submission to DSMI Provisional Report. 14 June 2019, p.3-4, para. 2.1 (Non-Confidential)
880 Cell C submission to DSMI Provisional Report. 14 June 2019, p.19, para. 5.6 (Non-Confidential)
881 Telkom response to DSMI Provisional Report. 14 June 2019, p.28, para.54.7 (Non-Confidential)
882 MTN response to the DSMI Provisional Report. 14 June 2019, p.67, para 5.29 (Non-Confidential)
883 Walter Brown submission to DSMI Provisional Report, 13 June 2019, p.15.
884 Afrihost's submission, 14 June 2019, p.7 (Confidential)

- 712.2 SOS agrees that structural separation of data service providers be considered as an intervention, although only of “later resort”. It submits that structural separation ought only to be used if other interventions fail to produce the desired outcomes.⁸⁸⁵
- 712.3 R2K also agrees that the wholesale and retail divisions of operators be structurally separated to encourage transparency regarding wholesale prices and potentially lead to open access in the long run which will in turn increase the level of competition.
- 712.4 In terms of the WOAN as a potential remedy, Vodacom agrees with the Commission that *“there should not be a monopoly WOAN, that the WOAN should not be allocated all HD spectrum and that a WOAN is an alternative to market regulation”*.⁸⁸⁶
713. The recommendations in the Provisional Report regarding wholesale mobile competition and MVNOs also received some opposing or alternative views from stakeholders, which we summarise below.
- 713.1 In terms of the recommendation to unlock MVNOs, Sutherland agrees that the introduction of more MVNOs might help, but warns that *“it is unlikely to be quick and would be far from certain”* as it would require the regulation of the networks of MTN and Vodacom, thereby presenting legal and regulatory challenges and consequently creating delays and uncertainties.⁸⁸⁷
- 713.2 Afrihost proposed [X].⁸⁸⁸
- 713.3 Vodacom strongly disagrees with the Commission’s recommendations regarding national roaming, as it states

that the Commission has not assessed the latest deals for national roaming and is therefore not suited to propose national roaming recommendations.⁸⁸⁹ Vodacom points out that national roaming obligations are generally used as a temporary measure to support new market entry, and that the Commission should *“assess if the larger operators’ networks represent a competitive bottleneck (non-replicable assets) and to regulate only if this assessment is positive”*.⁸⁹⁰ Mandating cost-orientated national roaming would, in Vodacom’s view, reduce incentives towards infrastructure investment for larger and smaller operators and would result in less competition, higher prices and poorer quality. In this regard, Vodacom states that the Commission has not assessed *“the impact of its proposed remedy on future investment in new technologies, network quality and consumer satisfaction”*.⁸⁹¹

- 713.4 Vodacom views the Commission’s recommendation to consider a form of functional/accounting separation of the larger networks, in the absence of larger operators not voluntarily coming to improved MVNO access terms, as *“unprecedented and disproportionate”*. It notes the Commission has not acknowledged the costs involved in a structural separation (including direct and indirect implementation costs) and has failed to conduct an assessment of its proposal’s impact or to determine if there exist less intrusive remedies as alternatives to structural separation (which Vodacom submits is a permanent measure that cannot be reversed).⁸⁹² Furthermore, with regards to the WOAN, Vodacom submits that there would be no requirement to

885 SOS submission, 14 June 2019, p.11

886 Vodacom response to DSMI Provisional Report. 14 June 2019, p.191 (Non-Confidential)

887 Ewan Sutherland’s submission, p. 14

888 Afrihost, 14 June 2019, p.4 (Confidential)

889 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.189 (Non-Confidential)

890 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.189 (Non-Confidential)

891 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.190 (Non-Confidential)

892 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.190 (Non-Confidential)

mandate the existing operators to offer MVNO access if there is also a WOAN, as Vodacom views this would weaken the WOAN's business case.⁸⁹³

713.5 MTN submits that the Commission has not justified its consideration that *"regulated wholesale access regimes would lead to any net benefit"* and that the small scale of MVNO's in South Africa is due to a lack of competition between operators at the wholesale level. The Inquiry has not, in MTN's view, accounted for the aspects that could be limiting MVNO success in South Africa, including the capacity constraint on MNO's networks and the use of credit cards for online payments and sales (which excludes a large part of South Africa's population).⁸⁹⁴

713.6 MTN views mandated wholesale access as likely to harm investment incentives, especially in the mobile communications industry where significant capital investment is needed, and MTN notes that the Commission has not done the necessary cost-benefit analysis of mandated wholesale access.⁸⁹⁵ Additionally, MTN considers the recommendation regarding a potential functional or accounting separation as onerous and very costly which could also *"lead to massive losses, destroying the natural efficiencies of vertical integration"*.⁸⁹⁶

713.7 Telkom submits that, while it is not opposed to improving MVNO access, it *"would need to see more specific proposals on how the DSMI believes access should be improved before it can offer any comments"*.⁸⁹⁷

9.2.5 SUBMISSIONS ON RECOMMENDATIONS REGARDING THE DEVELOPMENT OF INFRASTRUCTURE TO SUPPORT ALTERNATIVE DATA SERVICES IN LOW-INCOME AREAS

714. The Commission has received some submissions from stakeholders regarding its proposed recommendations concerning the fixed line supply gap and the development of backbone infrastructure, which is summarised below. The first section covers those stakeholder submissions which generally support the proposed recommendations, after which those alternate or opposing stakeholder views are presented.

714.1 With regard to the provisional recommendations aimed at closing the fixed line supply gap, Telkom submits that in principle it agrees that *"government intervention would be required to improve the economics of serving lower income or rural areas with fixed line infrastructure"*.

714.2 RIA submits that it supports the development of a backbone infrastructure to support alternative data services such as public Wi-Fi in low-income areas.

714.3 amandla.mobi agrees that infrastructure competition for low-income consumers could have kept mobile data prices down for low-income consumers. As such, there will be substantial benefit if fibre (and therefore public Wi-Fi) is to be extended to lower income areas.⁸⁹⁸

715. The recommendations in the Provisional Report regarding developing backbone infrastructure received some opposing or alternative views from stakeholders, which we summarise below.

893 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p. 191 (Non-Confidential)

894 MTN submission, 14 June 2019, p.67-68, para 5.33-5.33.2 (Non-Confidential)

895 MTN submission, 14 June 2019, p.68, para 5.34-5.35 (Non-Confidential)

896 MTN submission, 14 June 2019, p.68, para 5.36-5.37 (Non-Confidential)

897 Telkom submission, 14 June 2019, p.57, para 117 (Non-Confidential)

898 amandla.mobi's submission, 14 June 2019, p.4

715.1 Telkom notes that when considering the cost of fixed infrastructure, the rollout of mobile infrastructure seems to represent a more economical option of serving remote, lower income areas in the country than fixed-line infrastructure. Telkom submits that historically, Vodacom and MTN used termination revenues from calls originating at fixed locations to fund their network expansions. Considering this, Telkom argues that Vodacom and MTN should “[<]”⁸⁹⁹. According to Telkom, “[<]”⁹⁰⁰

715.2 ICASA states that in the case where the Commission is of the view that universal service obligations should be imposed on class licensees to facilitate universal access, then such obligations should only be contemplated for larger class licensees that meet a revenue threshold to be determined.⁹⁰¹ ICASA notes the Commission should also consider the proposed obligations in conjunction with section 2(z) of the ECA which requires ICASA, when intervening in the market, to consider the impact of placing social imperatives on class licensees on their sustainability.⁹⁰²

9.2.6 SUBMISSIONS ON RECOMMENDATIONS REGARDING DEVELOPMENT OF WI-FI IN LOW-INCOME AREAS

716. The Commission has received various submissions from stakeholders regarding its proposed recommendations concerning the development of Wi-Fi models in low-income areas which is summarised below. The first section covers those stakeholder submissions which generally support the proposed recommendations, after which

those alternate or opposing stakeholder views are presented.

716.1 Afrihost agrees that [<].⁹⁰³

716.2 In its submission, MWEB appeared to support the deployment of large-scale public Wi-Fi networks in underserved areas, which it notes will potentially offer a solution to expensive infrastructure deployments and the shortage of licensed spectrum. MWEB note that public Wi-Fi uses unlicensed spectrum and these networks are cheaper in terms of deployment and maintenance.⁹⁰⁴ MWEB also adds that fibre providers can extend their networks by using Wi-Fi as the last mile in lower income areas, albeit not all fibre providers will be able to do this as the roll out of infrastructure is costly and there are a number of new players.⁹⁰⁵

716.3 SOS supports the greater deployment of free public Wi-Fi and agrees it will have a positive impact on data prices. It notes, however, that state-funded Wi-Fi projects ought to be conducted in a way that does not result in the crowding out of private sector investment.⁹⁰⁶

716.4 R2K argues that service providers, or service providers with help from the government, need to collaborate in putting together an infrastructural plan dedicated to providing free and fast Wi-Fi to disadvantaged communities, townships, and rural areas.⁹⁰⁷

716.5 In terms of recommendations concerning alternative infrastructure for data services, Vodacom submits that it is willing to engage with the Commission and the DTPS regarding the discussion of issues in deploying free public Wi-

899 Telkom’s submission, 14 June 2019, p.32 (Confidential)

900 Telkom’s submission, 14 June 2019, p.32 (Confidential)

901 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p14

902 ICASA written submission to the Provisional Findings Report of DSMI, 26 June 2019, p14

903 Afrihost’ submission, 14 June 2019, p.9 (Confidential)

904 MWEB submission, 14 June 2019, p1.

905 MWEB submission, 14 June 2019, p2

906 SOS submission, 14 June 2019, p.11

907 R2K’s submission, 14 June 2019, p.7

Fi in low-income areas.⁹⁰⁸ Similarly, Telkom also states that it is keen on further engagements with government concerning *“the most economical way of reducing the digital divide and to provide access to data by developing a cost-effective means of improving and expanding access to a range of government and social services”*.⁹⁰⁹

717. The recommendations in the Provisional Report regarding alternative infrastructure also received some opposing or alternative views from stakeholders, which we summarise below.

717.1 While amandla.mobi agrees there will be substantial benefit if public Wi-Fi is to be extended to lower income areas, public Wi-Fi is not, however, a full substitute for affordable mobile networks.⁹¹⁰

717.2 Vodacom submits that initiatives concerning alternative infrastructure should not be linked to future spectrum auctions as it views this and obligations to fund the extension of fibre backhaul as inappropriate when part of auction conditions. Mobile operators do not have lots of experience with successful Wi-Fi models and such auction conditions could create more uncertainty and well as unduly favouring Telkom (as it already has the existing fixed infrastructure and could accommodate such conditions at a lower cost).⁹¹¹

717.3 While Telkom generally supports the Commission’s recommendation that government use its own demand to support the investments in free public Wi-Fi projects, Telkom emphasises a simpler option, which would be for government *“to accelerate its existing plans to connect all of its own buildings with fixed line infrastructure, and then use those buildings, many of which are*

public in nature already, to offer free Wi-Fi hotspots.” It notes that leveraging existing infrastructure would not be expensive or capital intensive as is the case in developing and delivering free public Wi-Fi. Telkom further expresses its concern that public Wi-Fi projects would favour urban residents as it is very costly to roll out fixed-line infrastructure in sparsely populated, poor areas. Telkom also points to mobile networks being most suited to serve poorer consumers in remote areas as most people already own handsets to access mobile broadband services.⁹¹²

717.4 Mr Brown argued in favour of mass public access via a single high capacity high speed broadband link shared by many users in public access facilities. The broadband providing entity receives its planned price for the service and the community shares this price equitably and in an affordable manner.⁹¹³ One way of doing this is by using the ‘LAN House model’, which has been used in Brazil, China, and India.

9.3 FINAL RECOMMENDATIONS

718. The Commission’s recommendations are informed by the assessment of the level and structure of data prices, as well as the diagnosis of what factors may be driving up costs or inhibiting competition. The recommendations also take into account the current policy, legislative and regulatory context, including existing initiatives to change legislation and assign spectrum. In addition, the public hearings and written submissions provided a forum for interested parties, including the operators themselves, to provide suggestions on how to address high prices for mobile data services, or for low-income consumers more generally. These have also been taken into

908 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.191-192 (Non-Confidential)

909 Telkom’s submission, 14 June 2019, p.59, para 125 (Non-Confidential)

910 amandla.mobi’s submission, 14 June 2019, p.4

911 Vodacom response to Provisional Findings Report of DSMI. 14 June 2019, p.192 (Non-Confidential)

912 Telkom’s submission, 14 June 2019, p.59, para.122-124 (Non-Confidential)

913 Walter Brown’s submission, 13 June 2019, p.14-15

account by the Commission in formulating recommendations.

719. In respect of the general approach adopted by the Commission to recommendations, we make the following observations in response to some of the submissions received:

719.1 First, it is not incumbent upon the Commission to demonstrate dominance in a market formally defined by the hypothetical monopolist test in order to justify remedial action in the context of a market inquiry. As indicated in section 43A of the Act (pre-amendment), a market inquiry is an *"inquiry in respect of the **general state of competition in a market for particular goods or services, without necessarily referring to the conduct or activities of any particular names firm**" (emphasis added).*⁹¹⁴ *This makes clear* that whilst there is a notion of a market, it is not one used to determine single firm dominance nor is dominance of a single firm a requirement for recommendations. In addition, section 43B makes clear that the Commission can conduct an inquiry *"(i) if it has reason to believe that **any feature or combination of features of a market for any goods or services prevents, distorts or restricts competition within that market; or (ii) to achieve the purposes of this Act**" (emphasis added).*⁹¹⁵ This too makes clear that market features rather than single firm behaviour may be the basis for recommendations, but also the test is not necessarily one of a substantial lessening of competition. Rather, the test is one of preventing, distorting or restricting of competition, or alternatively impediments to achieving the purposes of the Act. Those purposes, as outlined in section 2 of the Act, include *"a) to promote **efficiency, adaptability and development of the economy, b) to***

***provide consumers with competitive prices and product choices, and c) to promote employment and advance the social and economic welfare of South Africans**"* (emphasis added).⁹¹⁶ However, the Commission also notes that the final report does in fact identify dominance of Vodacom and MTN within mobile retail and wholesale markets as commonly defined in competition law mergers and/or complaints.

719.2 Second, whilst many regulators do subscribe to the 'good regulatory practice' of addressing concerns at a wholesale level before considering retail level interventions, this is not to the exclusion of retail level interventions entirely if they are appropriate. This may be where wholesale intervention cannot address the concern (e.g. the out-of-bundle issue addressed by ICASA in the End-User and Subscriber Service Charter Regulations) or where wholesale regulations will take time to play out before there is change at the retail level. In respect of this Inquiry, concerns over the structure of retail pricing cannot be addressed by wholesale interventions in the short-term and there is an urgent imperative to address high data prices given the adverse social and economy-wide consequences of such prices with the knowledge that wholesale remedies will take considerable time to put in place, let alone create an impact. Furthermore, the approach of the Commission is to address the longer term competition issues through wholesale remedies.

720. The Commission has identified a final package of recommendations that provide immediate relief to high data prices, especially for low-income consumers, combined with initiatives to improve mobile price competition and greater infrastructure alternatives to consumers over the medium

914 The Competition Act, no.89 of 1998, Chapter 4A, Section 43A, p.62

915 The Competition Act, no.89 of 1998, Chapter 4A, Section 43B (1) (i) (ii), p.62

916 The Competition Act, no.89 of 1998, Section 2, (a) - (c), p.14-15

term. The full implementation of this package of remedies will not only lower prices for all consumers, and particularly the poor, but will lead to greater economic and social inclusion moving forward as the country moves into the digital age. The full implementation of the package of remedies is also essential to provide the necessary building blocks for South Africa to participate fully in the Fourth Industrial Revolution and take advantage of the opportunities that revolution presents. Participation in the future digital economy requires low data prices to support a broader consumer and industrial demand required to make digital platforms and solutions commercially viable. It also requires competitive mobile and fibre infrastructure markets to ensure prices remain low as investment and development of new technologies, such as 5G, are rolled out.

721. Note that where we refer to DTSP, this should also be interpreted as also referring to its future successor, the Department of Communications and Digital Technologies, once the merger with the Department of Communications is completed.
722. We start by setting out the recommendations falling within each category of interventions before discussing why these particular recommendations have been adopted.

9.3.1 IMMEDIATE RELIEF ON DATA PRICING

Recommendations

723. Access to affordable data is of paramount importance for economic and social inclusion and thus mobile pricing must be addressed. The programme for immediate relief on mobile data pricing includes the following recommendations on the **level and structure of pricing**:

- 723.1 Notwithstanding the most recent price reductions, Vodacom and MTN must independently reach agreement with the Commission on substantial and immediate reductions on tariff levels, especially prepaid monthly bundles, within two months of the release of

the report. The preliminary evidence suggests that there is scope for price reductions in the region of 30% to 50%.

- 723.2 Vodacom and MTN must independently reach agreement with the Commission within two months on a reduction in the headline prices of all sub-500MB 30-day prepaid data bundles to reflect the same cost per MB as the 500MB 30-day bundle, or cost-based differences where such cost differences have been quantified, as well as the cessation of partitioning strategies that contribute to anti-poor pricing and/or inferior service outcomes. Given their collective market position, adjustments to their prices should impact on market-wide pricing.
- 723.3 Vodacom and MTN must independently reach agreement with the Commission to cease ongoing partitioning and price discrimination strategies that may facilitate greater exploitation of market power and anti-poor pricing.
- 723.4 All mobile operators must reach agreement with the Commission within three months to offer all prepaid subscribers a lifeline package of daily free data to ensure all citizens have data access on a continual basis, regardless of income levels. This agreement must then be given formal legislative or regulatory effect within six months. This may include the ICASA End-User and Subscriber Charter Regulations, spectrum licensing conditions or planned amendments to the ECA. The precise level of lifeline data and any annual adjustments should be determined in consultation with industry, ICASA and relevant experts. The Commission is of the view that it should be sufficient to ensure each citizen's participation in the online economy and society.
- 723.5 All mobile operators must reach agreement with the Commission within three months on a consistent industry-wide approach to the zero-rating of content from public benefit organisations and educational

- institutions to ensure broad application. This agreement should then be given formal regulatory status through the ICASA End-User and Subscriber Service Charter within six months of the report. The starting point for such a list of zero-rated sites should be the existing collective list of zero-rated content in this category from all operators, but that process should seek to establish clear principles and criteria to be applied as well as an application process for those PBOs and educational institutions that seek zero-rating. These criteria should expressly include greater zero-rated access to content in African languages.
- 723.6 All mobile operators must reach agreement with the Commission within three months to inform each subscriber, on a monthly basis, of the effective price for all data consumed by the customer. This agreement should be given formal regulatory status in the ICASA End-User and Subscriber Service Charter within six months of this report.
- 723.7 Telkom Openserve must reach agreement with the Commission on substantial reductions in the price of IP Connect to remove excessive pricing concerns within two months.
724. With respect to the above recommendations on the level and structure of pricing, should an operator fail to reach the required agreements with the Commission within the specified timeframes, the Commission will proceed to prosecution under the appropriate sections of the Act. The Commission will also institute ongoing monitoring of pricing levels and profitability into the future until the market becomes more competitive.
725. The other aspect to more immediate relief concerns the assignment of high demand spectrum. In this respect the process has moved in parallel with the Commission. The recommendations in the Provisional Report to accelerate the process and focus on affordable access rather than revenue generation have been acted upon by DTSP in its release of the Policy Directive. The Commission made further submissions to ICASA on how to approach assignment in the context of the Policy Directive, most of which have also been acted upon and reflected in the Information Memorandum. These are all welcome developments.
726. The Commission will continue to engage with the ICASA spectrum assignment process in line with the principles contained in the submissions on the IM process. These include:
- 726.1 In the licensing of the WOAN, to ensure a commercially viable consortium secures the license, to ensure it has cost-orientated access to facilities and national roaming, to provide a spectrum fee holiday, and to build in appropriate regulatory oversight which includes at a minimum non-discrimination, but potentially more if an existing operator is licensed.
- 726.2 In the licensing of the remaining spectrum, to ensure imposition of spectrum caps on the two largest operators, to ensure wholesale open access at cost-orientated prices to their facilities, to ensure social obligations including a lifeline data package to all South Africans, and to ensure any cost reductions are passed through to price reductions.

Discussion

727. *Substantial reduction in Vodacom and MTN 30-day tariffs.* The Commission remains of the view that immediate relief from high prices is required and hence a retail level intervention is appropriate. However, the final recommendation represents a shift from the provisional recommendation of a drop by all operators to effective price levels to a focus on reductions in the Vodacom and MTN tariffs, in particular 30-day prepaid bundles, notwithstanding their latest price decreases, for the following reasons:

- 727.1 The Commission accepts that the challenger networks are already pricing lower than the market leader in most

cases and therefore an obligation on all operators may be disproportionate. However, the Commission also appreciates that Vodacom and MTN's actions will impact on market-wide pricing given its dominant position, and therefore obligations on all operators are also unnecessary.

- 727.2 The Commission also accepts that the original formulation around effective prices poses implementation difficulties as identifying effective prices is complex given that consumers may purchase multiple bundles in the course of a month. The final recommendations have a particular focus on 30-day prepaid bundles because these bundles provide ongoing data access unlike the short-validity bundles, and Vodacom / MTN have been resistant to reducing these prices unlike in other markets where it operates. This is notwithstanding some recent price reductions in some of the 30-day bundles, but not all.
- 727.3 Whilst the Commission does have a *prima facie* case of excessive pricing, the Commission also accepts that litigation takes time and the interests of consumers may be best served by an immediate and substantial unilateral reduction agreed with the Commission by these operators. If not, the Commission will proceed to prosecution, will demand maximum penalties and open up the operators to potential class action suits if successful. The ongoing monitoring is necessary as immediate reductions may simply be offset by lower reductions in future given that these operators continue to have market power.
728. *Pro-poor measures.* The Commission does remain of the view that the poor are being unfairly exploited by the operators and that the extent of price discrimination in bundles is inexplicable. The Commission also does not accept the retort that poor consumers can purchase inferior short-validity bundles as an answer to the discrimination. However, the Commission accepts that the initial 25% stipulated as the maximum differential may be considered arbitrary and that some scope for promotions and other beneficial packaging behaviour is warranted. As a result, the final recommendations represent a more focused effort to bring relief to poorer consumers such that they may participate in the digital economy on an ongoing basis.
- 728.1 The daily lifeline package of free data seeks to ensure cheaper access to data services on a daily basis for all South Africans and to partially offset the discrimination against the poor from higher pricing per MB in smaller monthly bundles which will always be the case despite other interventions to reduce the extent of discrimination. It is also simpler to enforce with lower risks of unintended consequences than other price discrimination proposals. The Commission is also cognizant of the fact that all operators claim to provide free data to lower income consumers already, so this recommendation essentially looks to refocus that free data provision in a more deliberate fashion. The Commission also recognises that mobile operators all make use of a national scarce resource to offer their services, namely spectrum, and that the people of South Africa should therefore all benefit from the licensing of what is their collective resource. The Commission is of the view that it is important to first reach an agreement and then an appropriate regulatory home can be found to house and monitor that agreement. The Commission has also left open the volume of daily free data as this should be the subject of determination and negotiation.
- 728.2 In addition, the Commission believes it is also necessary to place some limits on price discrimination in respect of small bundle sizes for the monthly data bundles. Indeed, the latest price reductions by Vodacom on its monthly bundles started at the 250MB bundle and smaller volume bundles saw no price decline, exacerbating the

- current differentials. In this respect, the Commission has focused its recommendation to Vodacom and MTN only, and to bundles of 500MB or lower. The recommendation provides scope for Vodacom and MTN to quantify any differences in costs to supply bundle sizes lower than 500MB to the Commission and to set the price differential on a per MB basis on these cost differences. However, if the operators are unable to justify that cost differences exist, then the requirement is that all bundles lower than 500MB have the same cost per MB as that of the 500MB bundle. Again, given Vodacom and MTN's dominance, their pricing is likely to have impacts market-wide.
- 728.3 The Commission remains concerned that a broader set of partitioning and price discrimination strategies undertaken by Vodacom and MTN contribute to higher prices and exploitation of all consumers, but especially the poor. For this reason the Commission requires an agreement to cease those practices that partition customers in a manner that permits exploitation and which are not clearly related to any efficiency objective. Failing an agreement, the Commission will proceed to prosecution of Vodacom and MTN under section 8(a) of the Competition Act and in respect of those customer segments which these operators seek to partition. These engagements will also create a degree of certainty as to what types of practices would be considered exploitative price discrimination in future.
729. *Zero-rating.* There was broad support for a common industry approach for the zero-rating of PBO and educational sites. The Commission is of the view that zero-rating is part of a package of measures along with lifeline free data which ensure that all South Africans can participate in the benefits of the digital economy, especially regarding essential online resources and government services which citizens need to access. A collective industry approach is preferred as South Africans can then be assured of zero-rating access regardless of which mobile operator they subscribe to.
- 729.1 This does not prevent operators from zero-rating other content, including commercial content, which concerned MTN, but rather provides a minimum requirement based on public benefit and educational criteria. By its very focus this would necessarily exclude commercial and paywall content.
- 729.2 The Commission has recommended that once agreement has been reached with the operators, that this agreement find a home in the ICASA End-User and Subscriber Charter Regulations as this provides a framework to house such an initiative. The Commission would then look to industry to work with government and other stakeholders to identify principles and criteria for selection. The current practice may provide a starting point, but this could also extend to online government services or educational applications for instance.
- 729.3 The recommendation makes explicit reference to African language content to be included as the Commission found that zero-rating other content and not African language content reduced access to such content. Access to content in one's home language is a fundamental right of all citizens given the recognition of all official languages.
730. *Transparency.* The lack of transparent pricing in terms of what the subscriber finally pays for data is self-evident given the complex array of different bundles which a single subscriber may purchase and the varying levels of utilisation of those bundles. Transparency is an important principle in making competition work better as consumers are more able to make informed decisions about the relative value offered by different bundles as well as different operators and select accordingly. The Commission also is of the view that an agreement reached as to how consumers

will be informed should then be given a formal regulatory home to ensure ongoing monitoring and enforcement.

731. *Spectrum assignment.* The spectrum assignment process has moved considerably since the Provisional Report, and the Commission has made submissions to ICASA in respect of the approach to licensing given the Policy Directive. The Commission believes that the ICASA IM process is now where the focus should lie, and it will continue to engage around the draft IM along with all other stakeholders. However, it will do so in line with the principles set out in the submission it made to ICASA.

732. *IP Connect.* The Commission investigated the persistent complaints in terms of IP Connect and has established that a *prima facie* case of excessive pricing exists. However, the Commission also recognises that the price of IP Connect has been on a downward trajectory over the past few years. The Commission will therefore first engage Telkom Openserve on the planned future trajectory and whether this will rapidly eliminate excessive pricing concerns. If agreement can be reached within two months, then the Commission will not proceed to prosecution as it would be in the interests of consumers to see reductions quickly rather than lengthy litigation.

9.3.2 INTERMEDIATE PROGRAMME TO ENHANCE PRICE-BASED MOBILE COMPETITION

Recommendations

733. The intermediate programme is focused on enhancing price-based mobile competition through wholesale market interventions and promoting the development of alternative infrastructure to provide data services in lower income areas and smaller secondary cities and towns nationally.

734. In terms of **enhancing price-based competition** in the mobile industry, the Commission recommends the following action at the wholesale level of the industry

to improve the terms of wholesale access and reduce infrastructure costs.

734.1 Legislative changes must be made to facilitate cost-based access to facilities. Such legislative changes should set pricing standards for different types of facilities, such as cost plus a fair return for essential facilities but a less stringent standard for non-essential facilities. The Commission also recommends that ICASA undertake the process of defining essential facilities as a basis for regulating such facilities at cost plus a fair return. The objective would be to have legislation and regulations in place within the next eighteen months.

734.2 Vodacom and MTN must reach agreement with the Commission within six months to ensure that their national roaming agreements with other networks are priced, at a minimum, at wholesale rates which reflect a reasonable discount on their own effective retail rates as measured by the average revenue per GB, with provision for annual downward revisions to reflect reductions in their own effective retail rates over time. If no such agreement is reached, the Commission will proceed to prosecution in respect of excessive pricing and/or exclusionary conduct. Ultimately the minimum pricing standards for national roaming should be incorporated into the amendments to legislation with powers for ICASA to regulate roaming agreements.

734.3 With respect to MVNOs, all mobile operators must reach agreement with the Commission to ensure that the wholesale rate reflects a discount on the prevailing effective retail rate. If no such agreement is reached, the Commission will consider prosecution. Ultimately the minimum pricing standards for MVNOs and wholesale access should be incorporated into the amendments to legislation with powers for ICASA to regulate such agreements.

734.4 Vodacom and MTN must reach agreement with the Commission to institute accounting separation for their wholesale network infrastructure, including the radio access network (RAN) and core network within the next year. In addition, the Commission also recommends that ICASA re-institutes the regulatory accounting reporting requirements for Vodacom, MTN and Telkom Openserve within the next six months.

735. The Commission also recommends DTPS immediately start the process of policy and legislative reforms to incorporate the legislative changes identified above, support the ongoing regulatory function of ICASA as well as the rapid rollout of infrastructure. This should occur through a process of amendments to the ECA which had already been initiated by DTPS prior to the last national election. An amendment to the ECA should be fast-tracked over the next twelve months and, in addition to other contemplated changes, the Commission recommends that the amendments incorporate the following changes:

735.1 A complete review of section 67 of the ECA to ensure that the preconditions for regulatory action are proportionate to the type of regulatory action and that ICASA can regulate on the basis of findings by the Commission, other relevant regulators or courts;

735.2 Provide for the regulation of national roaming and MVNO agreements by ICASA;

735.3 Provide clear principles for access and price regulation for the leasing of different types of facilities; and

735.4 Progress the rapid infrastructure deployment strategy contained in the previous ECA Amendment Bill. These should facilitate greater ease in acquiring wayleaves and the use of municipal infrastructure such as poles for aerial deployment. These legislative changes should also incorporate

appropriate restrictions on municipal charges and conditions for granting such wayleaves.

Discussion

736. *Cost-orientated facilities leasing.* There is broad support for cost-orientated rates for facilities leasing, albeit that often large operators point to each other's infrastructure and not their own.

736.1 The Commission recognises that current legislation and regulations exist in respect of facilities leasing, but that these present challenges in terms of imposing actual pricing regulations. The Commission also recognises that whilst the current ICASA draft IM on spectrum licensing requires cost-orientated access to mobile infrastructure, it is uncertain what the final IM may look like and this would not cover fixed line facilities.

736.2 For these reasons, the recommendation is that changes to the legislation are most likely required if more meaningful regulations are to be developed. The Commission has also deliberately used the term cost-orientated in the recognition that different cost standards may be appropriate for different types of facilities. For instance, essential facilities may warrant cost-based rates, whilst more scope may be given to non-essential facilities. It is also for this reason that we recommend ICASA proceed with the process of defining essential facilities.

736.3 This should reduce costs for challenger mobile networks, mobile backhaul self-provisioning and for FTTH and alternative infrastructure providers. It will also promote more rapid rollout of infrastructure to the benefit of greater price-based competition.

737. *National roaming.* The Commission remains of the view that competitive national roaming agreements are essential for enhancing competition in the mobile industry for the reasons outlined in the findings. However,

the Commission also recognises that pure cost-based measures may be complex to determine and may have unintended consequences for investment incentives if roaming partners continually 'cherry pick'. The recommendation is therefore more light touch in terms of only identifying a maximum roaming rate that at least represents a wholesale rate (and is therefore below the retail rate) and leaving the rest to commercial negotiation. As outlined in the findings section, such a maximum level lies within the middle range of possible benchmarks and therefore is fair to both roaming provider and roaming seeker. The Commission is of the view that an agreement should be reached with the two major operators whilst legislative changes are made to facilitate the regulation of roaming agreements in order to ensure a more timely implementation.

738. *Wholesale MVNO access.* The Commission believes that there is far more scope to improve competition for MVNO access within the medium term through the WOAN initiative and the draft IM requirement for other licensees of high demand spectrum to host three MVNOs. For this reason, it does not believe heavy handed regulation is required and in fact believes it could be adverse to the WOAN whose main target market is the MVNO. The result is the same light touch regulation as suggested with roaming, namely that the rate must at least be a wholesale one and hence lower than the effective retail rates of the host network. Again, the Commission is of the view that such an agreement should be reached in the near term whilst the market is uncompetitive and the WOAN is not in place. Whether or not legislative and regulatory changes are required will depend on whether the WOAN initiative is successful and whether enhanced competition occurs in the longer term.

739. *Regulatory accounting.* Given the various initiatives around wholesale regulation included in this recommendation package as well as that of the ICASA IM, the Commission believes that some form of

accounting separation and reporting is absolutely essential for monitoring and enforcement. The final recommendation is more light touch than the potential for structural separation outlined in the provisional finding, but appropriate and proportionate to the circumstances. Indeed, Telkom Openseve has already been separated from Telkom Retail (now Telkom Consumer) as a result of the settlement with the Commission and the Commission understands that one other mobile operator is already going down this path internally in any event. The ICASA regulations for regulatory reporting provide an existing, albeit unenforced, means to take this forward and is appropriate given that it is ICASA that is the regulator which will monitor and enforce future wholesale regulation.

740. *Legislative changes.* The DTSP was already in the process of reviewing the ECA and proposing amendments to the legislation, and the Commission recommends that this process resume in the near future by the successor to the DTSP. The Commission therefore feels it is appropriate to propose potential legislative changes to make regulatory oversight more effective in the telecommunications industry. This is essential given the regulatory failings of the past and the pivotal role that the industry will play in the so-called 'fourth industrial revolution' going forward. Whilst the other recommendations seek to address current issues, no doubt new issues will arise in future as new technological platforms are rolled out (such as 5G) and regulatory challenges change.

9.3.3 DEVELOPMENT OF ALTERNATIVE DATA SERVICE INFRASTRUCTURE

Recommendation

741. The **development of alternative infrastructure** to provide data services in lower income areas and smaller secondary cities and towns nationally will provide off-load opportunities from the mobile networks to free public Wi-Fi or even simply lower priced subscription Wi-Fi services.

It will also provide an additional point of competitive pressure on mobile prices if there is a more pervasive presence. Whilst this is naturally occurring in wealthier areas, there are barriers to investment in poorer areas. The Commission recommends the following:

- 741.1 That national government consider providing investment incentives to FTTH providers for network rollout in low-income areas. These may take the form of tax breaks or financial support from the Universal Service and Access Agency of South Africa (USASA) based on competitive bidding around the least subsidy required. Government should also consider complementing these initiatives with contracts to provide services to government buildings in the vicinity to add base demand for any infrastructure provider. Such contracts may also be linked to rollout commitments.
- 741.2 That government at all levels actively promote the development of free public Wi-Fi in low-income areas, including government buildings, commuter points (e.g. train stations, taxi ranks) and public spaces (e.g. parks, shopping areas, government service offices) as well as the creation and entry of community networks. The ultimate objective should be for each municipality to provide free and affordable Wi-Fi services in such public areas within the boundaries of the municipality.
- 741.3 That ICASA consider models and regulatory changes to allow at least non-profit community networks, and possibly small commercial enterprises to access licensed spectrum not used by mobile operators in rural areas in a similar manner to television white space.
- 741.4 That a single government department or agency be designated as responsible for driving these initiatives across the different departments and levels of government. That department or agency should establish a technical or

advisory committee of experts to assist it in capacity-building, advising and growing both the more urban Wi-Fi projects and the community networks envisaged above.

Discussion

- 742. *Investment incentives for FTTH.* There was strong support for promoting FTTH and other alternative technologies alongside mobile broadband. However, it was recognised that the single biggest challenge is determining a revenue model that works in lower income areas and which can recover predominately fixed cost infrastructure. In that context, the simplest and most appropriate intervention is to reduce the overall fixed cost of the investment, which then reduces the revenue required to make the investment case. The most efficient means of achieving that is through investment incentives rather than more complex interventions aimed at specific costs in the business model. This may take the form of tax breaks on the capital spend in designated lower income areas, or subsidies provided by government. If subsidies are envisaged, then this should be on the basis of competitive bidding around the least financial support required to roll out in an area. This will ensure the more efficient FTTH providers are the beneficiaries and that the subsidy costs are minimised. This can be complemented by providing base revenue for an infrastructure provider through provisioning to government buildings in the vicinity of the infrastructure area. Collectively these could make investments more viable.
- 743. *Free public Wi-Fi.* There was overwhelming support for a government initiative around free public Wi-Fi, and considerable submissions around data as a basic service right of citizens much like electricity, water and sanitation. As government moves into this digital era, so municipalities should be focused on extending their services to include the basic right to data access. They are best placed to do so through free Wi-Fi initiatives, even if only at the buildings of government and key public spaces (such as commuter points). The Commission

recognises that not many municipalities will have the budget currently, and so the initiative should look to crowd in private provision in order to reduce the cost and extend the reach of the programme. This will require innovation around business models, such as a limited free service in exchange for the ability to offer a premium subscription service or models based on advertising and/or data use.

744. *Spectrum access for community services.*

The Commission identified that spectrum assigned to a national operator may not be utilised in all areas nationally depending on its network rollout, as it may roam in some areas or not use capacity spectrum in more rural areas. As a result, there is an opportunity for community or small-scale commercial operators to use this spectrum to offer data services in a localised area. Furthermore, the lack of requirement for national coverage in respect of data means these operations are commercially viable. Processes can be created whereby the licensed operator can reclaim the spectrum which it was assigned in order to invest in that specific area. The provisions for such access will significantly reduce costs and allow for the economic inclusion of some of the more marginalised citizens of South Africa.

745. The Commission has engaged with ICASA on this finding and is aware that ICASA has already released regulations for the use of television white space as a resource for data or other services. ICASA is also at an early stage of investigating dynamic spectrum access as a concept. However, the Commission also recognises that there are potential complications to such a strategy and the Commission did not investigate this in detail to reach firm conclusions. Therefore the recommendation is that ICASA consider it properly, but ultimately it is ICASA that needs to make a decision.

746. *Single government champion.* The Commission recognises that unless there is a single department or agency tasked with the responsibility of implementation, these initiatives to extend free Wi-Fi and community networks will fall by the wayside.

The Commission leaves open which government department or agency should champion this initiative. The Commission does think that whichever department or agency is given responsibility, that they should work with the private sector and NGOs on various approaches to determine what may work best in different contexts. Observing and learning from the different initiatives of government and communities will be crucial in designing the best models for affordable and free internet access. This is the basis for a recommendation to have an expert advisory panel that might give direction to this initiative and learn over time.

10. APPENDIX A: PRICE DIFFERENTIALS DATA

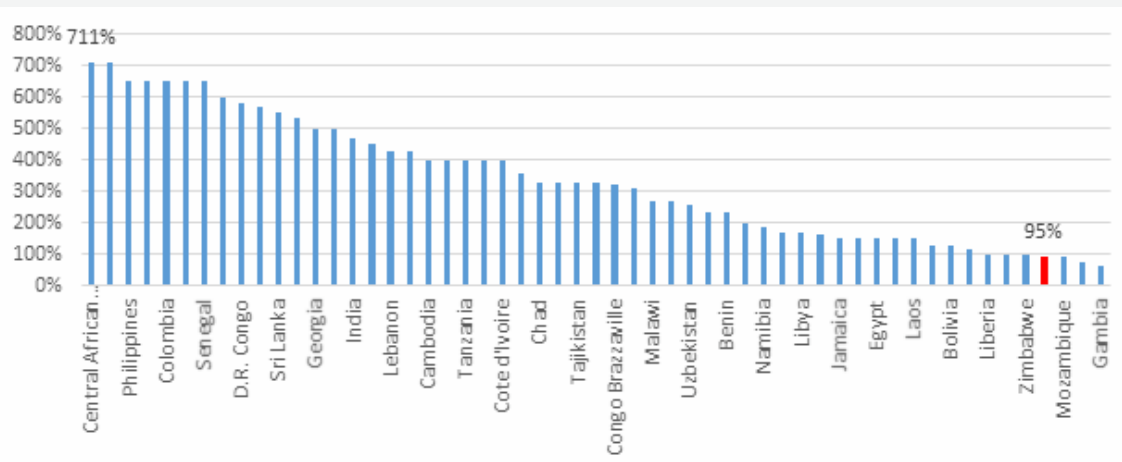
747. In response to the Provisional Report's finding that operators' pricing structures are anti-poor due to large price per MB differentials between small and large data bundles in South Africa, Vodacom presented international benchmarking data from A4AI to show that the pricing differential per MB between 100MB and 1GB bundles in South Africa is smaller than most other countries.⁹¹⁷ Their evidence, as presented in their response to the Provisional Report, is shown in the figure below.⁹¹⁸

748. Based on this analysis, Vodacom argues that the level of price differentiation in South Africa is less than other countries and South

Africa one of the best performers. However, a deeper look at the underlying data and analysis by Vodacom reveals a number of concerns which undermine the value of the analysis:

748.1 While the Commission acknowledges the ITU methodology used by A4AI, and that A4AI state "In some countries, smaller data bundles (e.g., 100MB) are not available and instead we identify the cheapest option to purchase that bundle. This may lead to the same price for several bundles"⁹¹⁹, it is not clear for smaller bundle prices whether the bundle needs to be valid for 30 days or

Figure 91: Comparison of the differential between the per MB price for 100MB prepaid per 1GB prepaid data bundles as per A4AI data (Q4 2018)



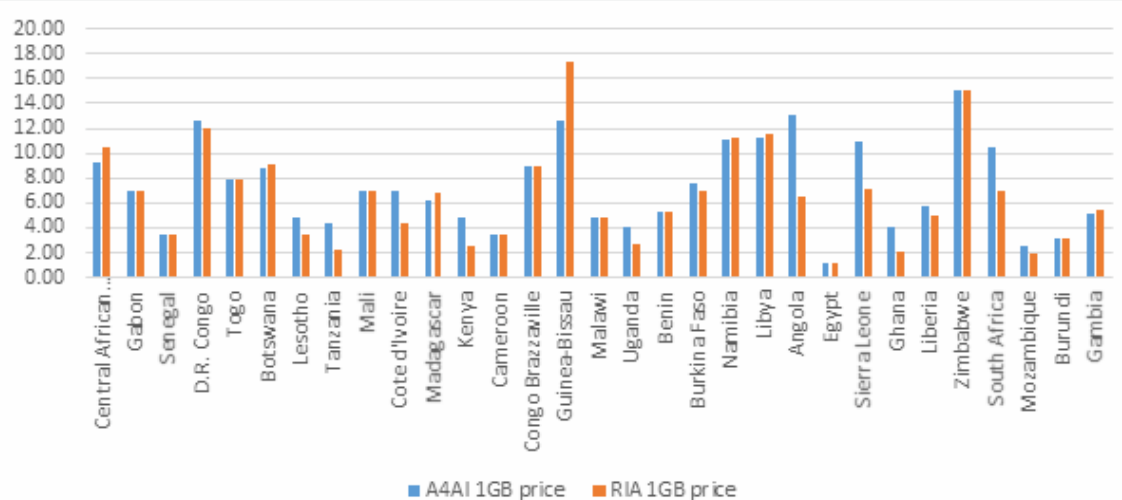
Source: recreated from Vodacom's submission

917 Vodacom has calculated the price differential between countries on a per MB basis by converting both the 100MB bundle price and the 1GB bundle price to megabytes and then calculating the percentage difference between the two bundles.

918 Vodacom submission, 14 June 2019. p15 (shown as Figure 8) (Non-Confidential)

919 Alliance for Affordable Internet. Available at: https://a4ai.org/extra/mobile_broadband_pricing_usd-2018Q4

Figure 92: A4AI vs RIA 1GB price (USD) for African countries (Q4 2018)



Source: A4AI data, RIA RAMP Index and data submissions to the Commission (2019)

whether more than one bundle could be combined to make up 100MB, and if that combination needs to be valid for 30 days in aggregate. When doing sample checks of the 100MB prices available online, we note that it is not always clear how the smaller bundle prices were arrived at.

748.2 As stated above, the A4AI methodology states that where a small bundle is not available, it identifies the cheapest option to purchase that amount of data and thus "(t)his may lead to the same price for several bundles."⁹²⁰ The apparent lack of availability of 100MB data bundles results in 44 countries with a duplication in 100MB and 1GB prices, which Vodacom has currently excluded from its analysis as they present data on 55 countries. However, there are also 16 countries where the 100MB and 500MB prices in the database are the same for a given country (but different to its 1GB prices) which indicates that there is no bundle less than 500MB found by the researchers. Thus, it is apparent that many countries simply do not have

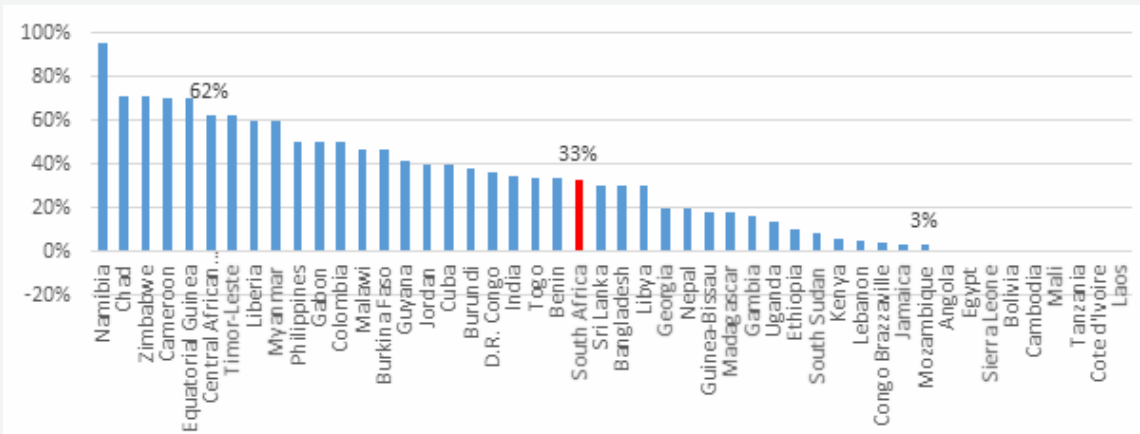
the appropriate smaller bundles to make such a comparison (or that the researchers were unable to identify them).

748.3 Furthermore, when comparing the 1GB prices from the African countries in the A4AI dataset to the prices for 1GB from RIA's RAMP Index for Q4 2018 (as shown in the figure above), there are also data discrepancies.

748.3.1 While slight variances in prices would be expected due to the difference in methodology across the two datasets (as A4AI takes the cheapest 1GB from the largest operator whereas RIA used the cheapest available option from each country), as well as potential exchange rate differences, there are, however, a few instances where the 1GB price across the two datasets differs significantly including, for example, Angola, Tanzania, Cote d'Ivoire and Sierra Leone. Further, considering that RIA chooses the cheapest

920 Alliance for Affordable Internet. Available at: https://a4ai.org/extra/mobile_broadband_pricing_usd-2018Q4

Figure 93: Price differential for 500MB vs 1GB prepaid bundles, A4AI (Q4 2018)




Source: recreated from Vodacom's submission

available 1GB option in an African country and A4AI chooses the largest operator's cheapest 1GB, we would not expect to find 1GB prices from the A4AI dataset that are lower than RIA's 1GB prices, yet this appears to be the case for Central African Republic and Guinea-Bissau.

748.3.2 From looking at the A4AI data and the RIA data, there are also instances where it seems that the 500MB prices have simply been doubled to obtain the 1GB price in the A4AI dataset and are therefore unlikely to reflect the true 1GB prices. Tanzania, for example, has a 1GB price of USD 2.18 in RIA's data, whereas the A4AI dataset shows the 500MB price (and 100MB) as USD 2.18 which appears to be doubled to provide a price of USD 4.37 for a 1GB bundle in the A4AI data. Further examples where this could be the case include Angola, Egypt, Sierra Leone, Bolivia, Cambodia, Mali, Cote d'Ivoire and Laos.

749. In addition to the above concerns, particularly around the 100MB price used in the analysis, when considering the price differential between 500MB and 1GB, this price differential analysis (see figure below) seems to show a potentially more reasonable picture of price differentials and we note that it is much different to the differentials analysed by Vodacom between the 100MB and 1GB prices. For example, the Central African Republic has a price differential of just 62% between its 500MB and 1GB price, from a previous differential of 711% when comparing 100MB prices to 1GB prices. Similar significant changes in results occur for Mozambique with just a 3% price differential between 500MB and 1GB (from 94% previously for 100MB to 1GB), and South Africa with a 33% differential (from 95% previously).

750. Within the same 55 country sample used by Vodacom (in its Figure 8), when looking at the price differential between the 500MB and the 1GB bundle, there are 25 other countries with smaller price differentials than South Africa's (at 33%) versus only 3 countries with smaller differentials than South Africa (at 95%) for the 100 MB and 1GB comparison. This suggests that



the results for the analysis presented by Vodacom may be driven more by a lack of 100MB bundle data than any difference in the level of price differentiation in other countries. Furthermore, with Vodacom's experience in the market and being an operator in various African countries, one would expect Vodacom to suspect that the high 100MB to 1GB price differentials of up to 700%, some of which apply to Vodacom territories, are incorrect or misleading.

751. Given the various concerns outlined above, it would be erroneous to rely on this dataset and, specifically, a comparison of 100MB to 1GB data prices, to conclude that price discrimination in South Africa is less than in other countries.

11. APPENDIX B: INTERNATIONAL PRICE COMPARISONS

11.1 PRICE CHANGES ACROSS COUNTRIES

Table 47: Assessment of price changes per country in Figure 15 of Provisional Report in local currencies (updated to Q3 2019)

Country	2014Q2 Domestic price	2018Q2 Domestic price	CAGR 2014Q2 to 2018Q2	2019Q3 Domestic price	CAGR 2014Q2 to 2019Q3
Botswana	191,1	127,44	-2%	96,3	-3%
Cameroon	9994,7	2072,25	-9%	2045,9	-7%
Ghana	13,8	12,06	-1%	19,9	2%
Kenya	759,0	251,43	-6%	252,3	-5%
Morocco	100,5	50,24	-4%	50,5	-3%
Mozambique	201,7	90,12	-5%	121,2	-2%
Namibia	228,8	160,53	-2%	160,1	-2%
Nigeria	1809,8	868,45	-4%	866,8	-3%
Rwanda	8105,3	2031,27	-8%	2027,7	-6%
South Africa	148,2	99,46	-2%	100,0	-2%
Tanzania	13113,1	5022,73	-5%	5011,9	-4%
Uganda	14887,1	10071,82	-2%	10069,8	-2%
Ethiopia	411,3	166,63	-5%	101,03	-6%

Source: calculations based on RIA submissions to the Commission (2019) as well as quarterly average exchange rates from Investing.com. and XE.com.

Table 48: Assessment of price changes per country in Figure 17 of Provisional Report in local currencies (updated to Q3 2019)

Country*	2015 Q3 Domestic price	2018 Q2 Domestic price	CAGR 2015 Q3 to 2018Q2	2019 Q3 Domestic price	CAGR 2015 Q3 to 2019Q3
Algeria	1005,50	802,95	-2%	903,07	-1%
Angola	1258,25	4006,87	10%	2006,26	3%
Benin	5038,50	3101,17	-4%	2001,08	-5%
Botswana	191,49	127,44	-3%	96,33	-4%
Burkina Faso	5038,50	4134,89	-2%	2502,83	-4%
Cameroon	8033,41	2072,25	-11%	2018,07	-8%
Cape Verde	505,00	484,66	0%	488,32	0%

Country*	2015 Q3 Domestic price	2018 Q2 Domestic price	CAGR 2015 Q3 to 2018Q2	2019 Q3 Domestic price	CAGR 2015 Q3 to 2019Q3
Cote d'Ivoire	4937,49	2583,27	-5%	2502,83	-4%
D,R Congo	7701,64	6842,50	-1%	4762,40	-3%
Egypt	28,08	20,03	-3%	20,00	-2%
Gabon	4016,70	4145,41	0%	4036,13	0%
Ghana	15,01	12,06	-2%	20,04	2%
Guinea	52552,71	20131,30	-8%	20229,68	-5%
Kenya	762,50	250,98	-9%	252,39	-6%
Lesotho	220,77	64,29	-10%	60,08	-7%
Liberia	1104,00	470,00	-7%	470,00	-5%
Libya	102,56	16,14	-14%	16,20	-10%
Madagascar	22582,94	23528,37	0%	25367,59	1%
Malawi	3961,74	3505,96	-1%	3573,07	-1%
Mali	7551,81	4134,89	-5%	-	-
Mauritius	284,71	185,12	-4%	186,22	-2%
Morocco	100,67	50,23	-6%	50,41	-4%
Mozambique	162,45	90,17	-5%	121,23	-2%
Namibia	82,31	160,53	6%	161,06	4%
Niger	5038,50	2065,06	-7%	2001,08	-5%
Nigeria	1815,72	867,60	-6%	851,85	-4%
Rwanda	3102,42	2034,14	-3%	2011,24	-3%
Sao Tome & Principe	202,88	3352,51	26%	201,84	0%
Senegal	4937,49	3618,11	-3%	2001,08	-5%
Sierra Leone	201285,35	58275,00	-10%	60021,57	-7%
South Africa	90,65	99,41	1%	100,04	1%
Sudan	35,88	32,74	-1%	39,25	1%
Swaziland	456,57	315,55	-3%	314,22	-2%
Tanzania	12768,44	5033,08	-7%	5011,89	-5%
Togo	5038,50	4653,49	-1%	5005,66	0%
Tunisia	10,02	5,04	-6%	5,11	-4%
Uganda	12162,49	10071,82	-2%	10069,88	-1%
Zambia	129,24	35,11	-10%	35,05	-7%
Zimbabwe	10857,00	10857,00	0%	7238,00	-2%
Ethiopia	283,63	166,63	-4%	101,07	-6%
Chad	10041,76	12433,49	2%	7066,21	-2%
Congo Brazzaville	10041,76	5180,62	-5%	4845,74	-4%

Source: calculations based on RIA submissions to the Commission (2019) as well as quarterly average exchange rates from Investing.com. and XE.com. *Note RIA data does not have a 1GB price for Mali for Q3 2019.

11.2 CONSIDERATION OF DIFFERENCES IN RELEVANT FACTORS ACROSS COUNTRIES

752. This sub-section of Appendix B considers whether the factors identified in the operators' submissions as potential explanatory variables of price differences across countries do in fact correlate with price differences consistently or not. The factors identified are as follows:

752.1 What appears to be pointed to as the most important factor contributing to costs of operators in South Africa is spectrum. Vodacom and MTN repeatedly refer to the lack of access to enough spectrum as well as the full range of frequencies, which they say is important for determining the number of RAN sites needed.⁹²¹ The reasoning is that fewer RAN sites mean lower costs and therefore lower prices.

752.2 Network coverage, quality, and speed are factors that consumers value highly.⁹²² To the extent that countries offer different coverage levels, quality, and speed, prices are likely to reflect the different offerings available. Telkom submits for example that 4G deployment and penetration is "very limited" in Mozambique compared to South Africa making the service incomparable.⁹²³ Network coverage, quality, and speed also influence costs.⁹²⁴ It is submitted that higher coverage, quality and speed are more costly to achieve (because of a higher

number of sites) and therefore one would expect higher prices.⁹²⁵

752.3 The total land area and topography of countries are held to affect the number of RAN sites needed to provide widespread network access (i.e. smaller and flatter countries are less costly to cover).⁹²⁶ Essentially, according to the submissions received, where countries are smaller, costs are expected to be lower and therefore prices too. For example, MTN submits that Lesotho, which has a land mass smaller than that of the Western Cape, would be less costly to cover than South Africa.⁹²⁷

752.4 Population density is also held to affect the number of RAN sites needed to provide a good quality network with sufficient population coverage.⁹²⁸ For example, MTN submits that even though the United States and Canada have a similar land area, the majority of Canada is uninhabited and so only small portions of the country requires mobile network coverage. While both countries have 100% population coverage, the largest operator in Canada has a geographic coverage of 28.8% whereas the largest in the US has a population coverage of 70% (the population is relatively dispersed).⁹²⁹ Population density in the sense described by MTN refers to the distribution of the population across the land area of the country rather than just the population size relative to the land area of the country as described in the Telkom and Vodacom submissions.

921 Vodacom's submission, 14 June 2019, p. 77-78, 88-89 (Non-Confidential); MTN's submission, 14 June 2019, p.8 (Non-Confidential), Appendix B, p.3

922 Vodacom's submission, 14 June 2019, p. 80-85 (Non-Confidential); MTN's submission, 14 June 2019, p.9-11(Non-Confidential), Appendix B p.4-6; Telkom's submission, 14 June 2019, p.10-11

923 Telkom's submission, 14 June 2019, p.11

924 Vodacom's submission, 14 June 2019, p. 80-85 (Non-Confidential); MTN's submission, 14 June 2019, p.9-11 (Non-Confidential), Appendix B, p.4-6

925 Vodacom's submission, 14 June 2019, p. 76- 77, 78, 80-81, 84 (Non-Confidential); MTN's submission, 14 June 2019, p.10 (Non-Confidential)

926 Vodacom's submission, 14 June 2019, p.81 (Non-Confidential); MTN's submission, 14 June 2019, p.7 (Non-Confidential), Appendix B p.3; Telkom's submission, 14 June 2019, p.12 (Non-Confidential)

927 MTN's submission, 14 June 2019, Appendix B p.3

928 Vodacom's submission, 14 June 2019, p. 71, 77-79 (Non-Confidential); MTN's submission, 14 June 2019, p.8, Appendix B p.3; Telkom's submission, 14 June 2019, p.12 (Non-Confidential)

929 MTN's submission, 14 June 2019, Appendix B p.3

Population density also drives unit network costs in that the denser the population in a particular area, the more that fixed costs can be spread across them.⁹³⁰

- 752.5 MTN and Telkom have also referred to the importance of considering population size.⁹³¹ MTN has argued that a country's population will affect its demand for data services as well as the amount of spectrum available per person, which in turn will affect the number of RAN sites required.⁹³²
- 752.6 MTN referred to crime levels as also having an effect on the costs that MNOs have to incur to maintain their existing infrastructure.⁹³³ It states that it loses over R100 million per annum from theft and vandalism.⁹³⁴
- 752.7 MTN also referred to the importance of considering the distribution of technologies demanded by subscribers of MNOs, which depends on the distribution of handsets⁹³⁵, although it does not apply this to the South African context.
- 752.8 Another factor mentioned by MTN are regulatory obligations, which also affect the cost of providing data services. An example of this is South Africa's universal service obligations.⁹³⁶ Universal service obligations usually mean that MNOs provide 100% or close to 100% coverage. Therefore, this factor can be measured by coverage levels.
- 752.9 According to MTN, the cost and consistency of electricity supply can also significantly impact on costs.

Load shedding or other electricity interruptions require that RAN sites run on generators, or else result in lost sales revenue.⁹³⁷

- 752.10 MTN also argued that a country's economic development will determine subscribers' willingness to pay for mobile services and therefore data prices. Furthermore, prices will also be affected if subscribers' willingness to pay varies across the population, which suggests that MTN believes that inequality is also a relevant explanatory factor for different data prices across countries.⁹³⁸ MTN did not explain the direction in which inequality affects data prices.
753. Notably, while the relevance of the various factors (as above) has been asserted, no analysis of these non-price factors has been presented to the Commission to show that consideration of these factors in fact closes the apparent gap between South Africa and the best performers based on the price benchmarking studies. Stakeholders have not even presented any existing empirical evidence regarding the statistical significance and magnitudes of the effects of these factors on data prices (to distinguish between factors that are material versus those that are not), nor have they made any suggestions as to how the Commission ought to factor in these characteristics to fairly compare prices across countries. They have at most produced examples of one or two countries that differ on one or more factors to attempt to 'explain' differences in prices between them.
754. In response to the aforementioned criticism in relation to non-price factors, the Commission has sought to assess how

930 Vodacom's submission, 14 June 2019, p.74 (Non-Confidential)

931 MTN's submission, 14 June 2019, p.8 (Non-Confidential), Appendix B p.3; Telkom's submission, 14 June 2019, p.12 (Non-Confidential)

932 MTN's submission, 14 June 2019, (Non-Confidential) Appendix B p.3

933 MTN's submission, 14 June 2019, p. 8(Non-Confidential), Appendix B p.3

934 MTN's submission, 14 June 2019, (Non-Confidential) Appendix B p.4

935 MTN's submission, 14 June 2019, p.8 (Non-Confidential), Appendix B p.4

936 MTN's submission, 14 June 2019, p.8 (Non-Confidential), Appendix B p.4

937 MTN's submission, 14 June 2019, p.9 (Non-Confidential), Appendix B p.4

938 MTN's submission, 14 June 2019, p.8 (Non-Confidential), Appendix B p.3

Table 49: Non-price indicators

	Source	Year
Spectrum Digital Dividend per operator	GSMA MCI	2017
Other Spectrum below 1GHz per operator	GSMA MCI	2017
Spectrum 1-3GHz per operator	GSMA MCI	2017
2G coverage	GSMA MCI	2017
3G coverage	GSMA MCI	2017
4G coverage	GSMA MCI	2017
Mobile download speeds	GSMA MCI	2017
Mobile upload speeds	GSMA MCI	2017
Mobile latencies	GSMA MCI	2017
Total land area	World Bank	2018
Population density	World Bank	2018
Urbanisation	World Bank	2018
Population size	World Bank	2018
GDP per capita	World Bank	2018

Source: calculations based on RIA submissions to the Commission (2019) as well as quarterly average exchange rates from Investing.com. and XE.com.

countries that have performed better than South Africa on prices (based on ITU 500MB mobile prepaid data bundles⁹³⁹) have fared relative to South Africa on each of the factors mentioned above. It also compares countries that have performed worse than South Africa on these factors. Where other relevant evidence is available or has been submitted to the Commission (e.g. Northstream report on Spectrum-deficit costs), we also discuss this.

755. Note that, with respect to ITU data, there are 101 countries (out of 168 other countries) that have lower 500MB prepaid mobile data prices than South Africa among the full international sample and 25 among African countries (out of 44 other African countries). All four other BRICS countries have cheaper 500MB prepaid mobile prices than South Africa. There are 66 countries with higher 500MB prepaid mobile data prices than South Africa, 19 of which are in Africa. The

GSMA's Mobile Connectivity Index (GSMA) does not provide information on all of the countries for which ITU has pricing data. It captures information for 155 countries in total (97 have lower prices for 500MB data bundles⁹⁴⁰ than South Africa and 57 countries with better⁹⁴¹). Of these, 41 countries are in Africa (24 of which have lower 500MB prepaid prices and 16 have higher prices) and 5 are BRICS countries.

756. We have used the Mobile Connectivity Index ("MCI") data from 2017⁹⁴² to assess quality and costs across countries, a dataset heavily relied upon by Frontier Economics for comparing countries on a non-price basis.⁹⁴³ The Commission supplemented MCI data with World Bank data on population size, population density, urbanisation rates, land area, and GDP per capita (to measure economic development). The source of data for each factor assessed is listed in the above table.

939 This dataset has been used by Vodacom's economic advisor Frontier Economics for comparing countries' prices in previous submissions. Source: Frontier's report in Vodacom's submission, 2017, p. 64-65

940 There is no GSMA MCI information on 4 countries, namely: Macao, Palestine, Sao Tome and Principe, and The Maldives.

941 There is no GSMA MCI information on 9 countries, namely: Antigua and Barbuda, St. Kitts and Nevis, Seychelles, Dominica, South Sudan, Grenada, St. Vincent and the Gredadines, Suriname, and Djibouti/

942 Although the GSMA has reported on data for 2018, ITU prices are only available for 2017 as of 23 August 2019.

943 Frontier's report in Vodacom's submission, 2017, p. 50-51

757. The dominant operators have placed significant emphasis on the impact of the lack of spectrum on their costs of doing business in the country. In particular, they have decried government's failure to allocate spectrum in the sub-1GHz frequency band.⁹⁴⁴ In fact, Vodacom referred to the lack of spectrum as one of two of the most important factors that are likely to raise costs.⁹⁴⁵
758. The GSMA MCI contains three measures of spectrum, namely spectrum per operator for digital dividend spectrum (in the 600 MHz, 700 MHz and 800MHz bands), other sub-1GB spectrum (the 900MHz bands), and spectrum in the 1 to 3 GHz bands. Together these indicators account for both the amount of assignments per operator and the type of spectrum allocated. When compiling the digital dividend data, GSMA excluded operators with very small spectrum allocations and market shares (e.g. those in specific regions or in niche markets) that would affect the "per operator" basis on which it did the calculations. The indicators were not designed to offer any information about the degree to which allocations are symmetric. For each of the three measures of spectrum assignment, the GSMA "normalised" the data using a min-max method. This means that the largest assignment in any category was adjusted to '100', the smallest to '0', and the remaining countries are adjusted proportionally.⁹⁴⁶ Thus, for each of the three measures, countries have a score lying within a range between 0 and 100.
759. Below, the Commission discusses measures of spectrum separately and together. Both the countries with better prices than South Africa and those with worse prices than South Africa are discussed.
760. *Digital dividend spectrum.* Of the 97 countries performing better on the prices of 500MB mobile prepaid bundles in 2017 for which there is GSMA MCI data, 41 countries (42.3%) had not allocated digital dividend spectrum to mobile operators either, bringing into question the argument that mobile operators in South Africa are severely constrained in their abilities to reduce prices as a result of government failing to allocate digital dividend spectrum. Of the 41 countries that had not allocated digital dividend spectrum in 2017, 13 are in Africa and 2 are BRICS countries (India and China).
761. A similar percentage of the 57 countries (43.9%) with higher mobile prepaid 500MB data prices than South Africa for which there is GSMA MCI data had not allocated spectrum either in 2017. Of these countries, 12 are in Africa.
762. *Other Sub-1 GHz spectrum.* There are 56 countries (57.7%) of 97 countries with better 500MB mobile prepaid prices than South Africa that scored worse on non-digital sub-1 GHz spectrum in 2017 and a further 2 with scores that are within 5% of South Africa. Altogether, these countries include 21 African countries and 2 BRICS countries (Russia and India).
763. A lower but still sizable percentage (47.4%) of the 57 countries with higher mobile prepaid 500MB data prices than South Africa had allocated less other sub 1-GHz spectrum per operator in 2017 (a further 1 has scores within 5% of that of South Africa). Of these 28 countries, 11 countries are in Africa.
764. *1-3 GHz spectrum.* There are 66 countries (68.0%) of 97 with better 500MB mobile prepaid prices that had worse 1-3GHz spectrum compared to South Africa in 2017 and a further one had scores that are within 5% of South Africa. Of these 67 countries, 23 are in Africa and 2 are BRICS countries (Brazil and India).

944 Vodacom's submission, 14 June 2019, p.76-79; MTN's submission, 14 June 2019, p.11 (Non-Confidential), Appendix B p.5, p.3

945 Vodacom's submission, 14 June 2019, p.77 (Non-Confidential)

946 Mobile Connectivity Index: Methodology report, July 2018, p.15-16

765. Interestingly, a similar percentage of the 57 countries (68.4%) with higher 500MB mobile prepaid data prices than South Africa had allocated less 1-3GHz spectrum than it in 2017 (and a further 3 has a score within 5% of South Africa). Of these countries, 15 are in Africa.
766. *Spectrum overall.* It is useful to consider all three measures of spectrum together for three reasons. Firstly, among those countries that had no assigned digital dividend spectrum in 2017, others may have better assignments of other spectrum than South Africa, which may explain their relative prices (to the extent that spectrum does explain pricing outcomes). Secondly, even though South Africa has not assigned digital dividend spectrum, those countries which had such spectrum assigned in 2017 may have had less other sub-1GHz spectrum assigned, which would have meant South African operators were in a better position relative to those countries' operators compared to what one may have expected. Thirdly, the various types of spectrum frequencies are substitutable to some extent and thus the total frequency available (the total bandwidth) is relevant.⁹⁴⁷
767. Ideally, the Commission would be able to combine the three spectrum indices in the GSMA's MCI dataset in order to understand the total assignments of spectrum in each country. Unfortunately, as discussed above, the information underlying the three indices in the GSMA dataset is unavailable due to the use of normalised scores from 0 to 100. Without the underlying information, it is difficult to fully understand the overall spectrum positions of each country and therefore identify all the countries that have superior or inferior spectrum assignment scenarios compared to South Africa, at least in total.
768. At a minimum, 19 (19.6%) of the 97 countries with lower 500MB mobile prepaid data prices than South Africa have better spectrum than South Africa overall. These include both countries that have not assigned digital dividend spectrum and those that have.
- 768.1 There are 2 countries⁹⁴⁸ with no digital dividend spectrum (therefore the same as South Africa) that scored better on both the sub-1GHz spectrum and 1 to 3 GHz measures in 2017.
- 768.2 There are 17 countries with digital dividend spectrum (therefore better than South Africa) that also scored better on both the other sub-1GHz spectrum and the 1 to 3 GHz spectrum measures in 2017.
769. At a minimum, 12 (21.1%) of the 57 countries with higher 500MB mobile prepaid data prices than South Africa have better spectrum than South Africa overall. These include both countries that have not assigned digital dividend spectrum and those that have.
- 769.1 There are 2 countries⁹⁴⁹ with no digital dividend spectrum (therefore the same as South Africa) that scored better on both the sub-1GHz spectrum and 1 to 3 GHz measures in 2017.
- 769.2 There are 10 countries with digital dividend spectrum (therefore better than South Africa) that also scored better on both the other sub-1GHz spectrum and the 1 to 3 GHz spectrum measures in 2017.
770. There are 28 countries (28.9%) of the 97 countries with lower 500MB mobile prepaid data prices than South Africa that have clearly worse spectrum assignments than South Africa overall.

947 MNOs will use higher frequency spectrum if they have exhausted lower frequency spectrum or need more capacity (Source: Commerce Commission of New Zealand, 19 May 2019, "Mobile Market study - Preliminary Findings", p.24). Vodacom's submission points to the relatively large assignments of spectrum to Telkom as an advantage while still playing down Telkom's lack of lower-frequency spectrum.

948 China and Malaysia

949 Thailand and the Republic of Korea

- 770.1 Of the 41 countries that have not assigned digital dividend spectrum (same as South Africa) and with lower 500MB prepaid data prices, 28 also have worse spectrum assignments per operator for both the other sub-1GHz spectrum and the 1 to 3 GHz spectrum measures and so clearly are in a worse position than South Africa overall in terms of the GSMA spectrum measures.
771. There are 12 countries (21.1%) of the 57 countries with higher 500MB mobile prepaid data prices than South Africa that have clearly worse spectrum assignments than South Africa overall.
- 771.1 Of the 25 countries that have not assigned digital dividend spectrum (same as South Africa) and with lower 500MB prepaid data prices, 12 also have worse spectrum assignments per operator for both the other sub-1GHz spectrum and the 1 to 3 GHz spectrum measures and so clearly are in a worse position than South Africa overall in terms of the GSMA spectrum measures.
772. Therefore, the percentage of countries with clearly better spectrum assignments is similar among countries with lower 500MB data prices compared with those among countries with higher prices. A slightly higher percentage of countries with lower data prices than South Africa have clearly worse spectrum allocations compared with the percentage of countries with worse spectrum allocations among countries with better prices. This suggests that spectrum assignments are not a clear indication of pricing outcomes.
773. With respect to African countries with lower prices for 500MB mobile prepaid data than South Africa (24 countries), 1 had a better overall spectrum positions than South Africa in 2017, while 54.2% of them had inferior overall spectrum positions.
- 773.1 Better: 1 African country scored better than South Africa.
- 773.2 Worse: There were 13 African countries with no digital dividend spectrum that also had smaller assignments of both the other sub-1GHz spectrum and the 1 to 3 GHz spectrum per operator. Thus these African countries were in worse overall spectrum positions than South Africa but still outperformed South Africa on price.
774. With respect to African countries with higher prices for 500MB mobile prepaid data than South Africa (16 countries), none had a better overall spectrum position than South Africa in 2017 and 50% of them had inferior overall spectrum positions.
- 774.1 Better: 1 African country scored better than South Africa.
- 774.2 Worse: There were 8 African countries with no digital dividend spectrum that also had smaller assignments of both the other sub-1GHz spectrum and the 1 to 3 GHz spectrum per operator. Thus, these African countries were in worse overall spectrum positions than South Africa.
775. Therefore, a similar percentage of the countries in Africa with better prices than in South Africa have got better spectrum as among African countries with worse prices. In addition, a similar percentage have worse spectrum among African countries with better prices compared with those with worse prices.
776. The GSMA MCI data on spectrum assignments show that China and India had not allocated digital dividend spectrum in 2017 when their prices for a 500MB mobile prepaid bundle were lower than in South Africa. India also allocated less 1-3GHz spectrum as well as other sub-1GHz spectrum (and so had worse spectrum overall) yet both managed to offer lower 500MB mobile prepaid data prices than in South Africa. Although China had not allocated digital dividend spectrum either in 2017, it had better allocations of both other sub-1GHz and 1-3GHz spectrum and so scored better on spectrum overall. With respect to Brazil, although it had allocated digital dividend spectrum, it had a better

Table 50: CAPEX and OPEX savings relative to total CAPEX and OPEX had spectrum been assigned, 2012-2018

	Source		Year
Savings - Northstream estimates	[REDACTED]	[REDACTED]	[REDACTED]
RAIN-related savings - Vodacom estimates		[REDACTED]	[REDACTED]
Vodacom's total expenditure	[REDACTED]	[REDACTED]	[REDACTED]
% savings of total expenditure	[REDACTED]	[REDACTED]	[REDACTED]

Sources: Vodacom's submission, 14 June 2019, p.90-91, Annexure D Northstream Report (13 June 2019) (Confidential); Vodacom year ended 31 March 2019 results booklet; Vodacom year ended 31 March 2018 annual report; Vodacom year ended 31 March 2015 annual report

Notes: Total operating expenses for each financial year was worked out by subtracting EBITDA from total revenue; it was assumed that 2018 refers to the 2019 financial year as this was not stipulated in the Northstream report

score for the other sub-1GHz spectrum and a worse score for 1 to 3 GHz spectrum categories and so it was unclear whether overall operators there fared better or worse than South Africa in 2017. Similarly, for Russia, it has allocated digital dividend spectrum, fared worse on other sub-1GHz spectrum, and performed better on 1 to 3 GHz spectrum. Therefore, the evidence from BRICS countries therefore suggest that spectrum assignments do not determine, or have a strong influence on, pricing outcomes.

777. In addition to this analysis, evidence presented by Vodacom also suggests that the true impact of spectrum may be far more limited than what it and MTN have suggested. A report by Northstream which was submitted as Annexure D in Vodacom's submission was used to show how much capital expenditure ("CAPEX") and operating expenditure ("OPEX") Vodacom would have saved had spectrum been allocated.⁹⁵⁰ These calculations were done [REDACTED].

778. Furthermore, Vodacom argued that it also [REDACTED].⁹⁵¹ On this basis, Vodacom concluded that it [REDACTED].

779. Even if the Commission accepts the [REDACTED].

780. What this evidence suggests, again, is that the fact the spectrum remains unassigned in South Africa cannot be blamed for the fact that data prices are higher than they ought to be and higher than other countries. The impact on cost of the alleged spectrum constraint is, on the numbers presented by Vodacom, rather insignificant. Given the focus placed on spectrum by both Vodacom and MTN in their submissions on the conclusions drawn from the international price comparison exercise, the significance of other factors pointed to by the operators should also be brought into question.

Network coverage

781. Network coverage relates to both cost and quality. The higher the network coverage of operators, the higher are their underlying costs and the better is the experience of users who can use mobile data across the country. The GSMA MCI measures the network coverage of 2G, 3G, and 4G technologies. The Commission has considered all three coverage levels for each country across the three technologies, with a particular emphasis on 4G only since it offers the fastest speeds and is therefore indicative of better quality in terms of speeds.

950 Vodacom's submission, 14 June 2019, Annexure D Northstream Report (13 June 2019) (Confidential)

951 [REDACTED]. (Confidential)

782. Of the 97 countries with lower prices for 500MB mobile prepaid bundles for which there is MCI data available:

782.1 34 countries (35.1%) had higher 2G and/or 3G coverage level scores than South Africa and 44 (45.4%) had a score not less than 5% that of South Africa's score in 2017 for either measure.

782.2 Just over a half (53 or 54.6%) of the 97 countries with lower 500MB mobile prepaid data prices had better 4G coverage than South Africa, and a further 2 had 4G coverage within 5% of South Africa. These countries include 4 African countries (Rwanda, Mauritius, Morocco and Tunisia) and all four other BRICS countries.

782.3 Of the countries with similar or better 4G coverage (55 countries in total), all but four countries (92.7%) had 2G and/or 3G coverage scores that are greater or not more than 5% below that of South Africa.⁹⁵² These countries include the 4 African countries referred to above as well as the 4 BRICS countries.

783. Of the 57 countries with higher prices for 500MB mobile prepaid bundles for which there is MCI data available:

783.1 17 countries (29.8%) had either higher 2G and/or 3G coverage level scores than South Africa and 25 (43.9%) had a score not less than 5% that of South Africa's score in 2017.

783.2 Again, just under a half (25 or 43.9%) of the 57 countries with higher 500MB mobile prepaid data prices had better 4G coverage than South Africa. None of the these countries are in Africa.

783.3 Of the 25 countries with better 4G coverage and higher 500MB prices, all had 2G and/or 3G coverage scores

that are better than or not more than 5% below that of South Africa.

784. What this analysis shows is there did not appear to be a strong relationship between coverage levels in a country and that country's pricing performance for a 500MB mobile prepaid bundle in 2017. Coverage and the technology employed in covering a country does not appear to be a good indicator of pricing outcomes.

Speed and latency

785. Besides network coverage, the quality of mobile data services in a country is also determined by mobile speed, which the GSMA measures with download speeds, upload speeds, and mobile latencies. Mobile network latencies reflect how long it takes for a packet of data to get from one point to another or response times, which affects how fast pages load.⁹⁵³

786. Of the 97 countries with lower 500MB prices than South Africa:

786.1 23 (23.7%) have better mobile download speed scores than it (and 3 others score within 5% of it);

786.2 45 (46.4%) have better upload speed scores (and 6 others score within 5%);

786.3 39 (40.2%) have better mobile latencies (and 19 others score within 5%);

787. No African countries with lower 500MB mobile data prices score better or within 5% of South Africa in terms of download speeds although 3 (12.5%) do in terms of upload speeds (Angola, Morocco, and Madagascar). There are 2 African countries (8.3%) with better mobile latency scores and 3 (12.3%) within 5% of South Africa's score.⁹⁵⁴

952 These countries are Vietnam, Bolivia, Indonesia, and Tajikistan

953 Taylor, J, 27 July 2019, "5G in Australia: Getting up to speed with the future of mobile" in *The Guardian*, available at: https://www.theguardian.com/technology/2019/jul/28/5g-in-australia-getting-up-to-speed-with-the-future-of-mobile?utm_term=RWRpdG9yaWFsX0d1YXJkaWVVG9kYXIVS19XZWWrZGF5cy0xOTA3MzA%3D&utm_source=esp&utm_medium=Email&utm_campaign=GuardianTodayUK&CMP=GTUK_email [Accessed 31 July 2019]

954 These countries include Egypt, Rwanda, Cabo Verde, Morocco, and Tunisia

788. Among the BRICS countries, China has better 500MB mobile prepaid bundle prices than in South Africa, yet manages to also have better download speeds, upload speeds, and mobile latencies. Brazil, also with better 500MB mobile prepaid data prices, has better upload speeds and Russia has an upload speed score that is within 5% of South Africa's score. Only India performs worse than South Africa on all of these three quality metrics.

789. Of the 57 countries with higher 500MB prices than South Africa:

789.1 14 (24.6%) have better mobile download speeds than it (and 2 others have a score within 5%);

789.2 28 (49.1%) have faster upload speeds; and

789.3 21 (36.8%) have better mobile latencies (and 4 others score within 5%).

790. No African countries with higher 500MB mobile data prices score better in terms of download speeds and one (6.3%) - Namibia - performs better in terms of upload speeds.⁹⁵⁵ Two (12.5%) African countries perform better in terms of mobile latencies (Lesotho and Namibia).

791. This analysis suggests that there is no strong relationship between mobile speed and latencies relative to South Africa and pricing relative to South Africa. Countries that are priced lower than South Africa are no more likely to have worse speed and latency scores than South Africa relative to countries that are priced higher than South Africa.

Land area, population size, population density, and urbanisation rates

792. The Commission has also considered demographic and geographic features of countries, as per submissions to us. These are land area, population size, the population density (i.e. the size of the population divided by the land area of the country) and urbanisation rates (the percentage of the population that lives in urban areas).⁹⁵⁶

793. **Land area.** South Africa has a relatively large land area of over 1.2 million km². Of the 101 countries with lower prices for 500MB mobile prepaid data bundles, 10 (9.9%) have larger land areas than South Africa and a further 5 have large land areas of over 0.88 million km².⁹⁵⁷ Together these countries comprise 4 BRICS countries (China, Russia, India, and Brazil), 6 African countries (Egypt, Tanzania, Nigeria, Niger, Angola, and Ethiopia), and 5 other developing countries (Iran, Indonesia, Bolivia, Kazakhstan, and Mexico).⁹⁵⁸

794. Of the 66 countries with higher prices for 500MB mobile prepaid data bundles, 10 (15.2%) have larger land areas than South Africa and a further 2 have large land areas of over 880 000 km².⁹⁵⁹ Together these countries comprise 5 African countries (Chad, Mali, Algeria, the DRC, and Mauritania), 4 other developing countries (Peru, Mongolia, Colombia, and Saudi Arabia), and 3 developed countries (Canada, Australia, and the United States).⁹⁶⁰

795. This analysis suggests there is a slightly lower percentage of countries with a land area of over 0.88 million km² that have lower prices for 500MB mobile prepaid bundles

955 Although Namibia does score better on upload speeds only.

956 The urban population refers to people living in urban areas as defined by national statistical offices. This was collected and smoothed by the United National Population Division.

957 These are Egypt, Tanzania, Nigeria, Ethiopia, and Bolivia.

958 Of the 15 countries with a similar or larger land area to South Africa, 3 have better 2G and/or 3G coverage scores and 3 have scores within 5% of South Africa's score. These countries are Egypt, China, The Russian Federation, Angola, Brazil, and Mexico.

959 Mauritania and Columbia.

960 Of the 12 countries with a similar or larger land area to South Africa, 6 have better 2G and/or 3G coverage scores and 2 have scores within 5% of South Africa's score. These countries are Canada, Australia, Mongolia, Mali, The United States, Colombia, and Saudi Arabia.

compared with those with higher prices. This is confirmed by the fact that the median land area of the countries with lower prices for 500MB mobile prepaid data bundles is 128 900 km² and the median land area of countries with higher 500MB prices is 111 890 km². Given the small difference, land area is not a strong indicator of pricing outcomes.

796. **Population size.** South Africa has a population of approximately 58 million people. There are 16 countries of 101 (15.8%) with lower 500MB mobile prepaid data prices that have a larger population than South Africa and the magnitudes of a further 3 countries have populations of over 50 million people as well.⁹⁶¹ They comprise 5 African countries (Egypt, Tanzania, Nigeria, Ethiopia, and Kenya), 4 BRICS countries (China, Russia, India, and Brazil), and 9 other developing countries (Myanmar, Bangladesh, Pakistan, Iran, Vietnam, Turkey, Indonesia, Mexico, and The Philippines) and 1 developed country (The United Kingdom).
797. There are 7 countries of 66 (10.6%) with higher 500MB mobile prepaid data prices with a larger population than South Africa and the magnitudes of a further 1 has a population of over 50 million people as well⁹⁶². They comprise 1 African country (The DRC), 1 developing country (Thailand) and 6 developed countries (Germany, Italy, United States, France, South Korea, and Japan).
798. This analysis suggests there is a slightly greater percentage of countries with population sizes of over 50 million people that have lower prices for 500MB mobile prepaid bundles compared with those with higher prices. The median population size of the countries with lower prices for 500MB

mobile prepaid data bundles is 10 million people and the median population size of countries with higher 500MB prices is 6.9 million people. More broadly, it is clear that population size is not a strong indicator of pricing outcomes.

799. **Population densities.** There are 25 countries of 101 (24.8%) with better 500MB mobile prepaid data prices as well as lower population densities than South Africa. They comprise 5 African countries (Mozambique, Niger, Angola, Gabon, and Madagascar), 2 BRICS countries (Russia and Brazil), and 18 other countries.⁹⁶³
800. There are 25 countries of 66 (37.9%) with worse 500MB mobile prepaid data prices as well as lower population densities than South Africa (and 1 other with a population density of within 5% of that of South Africa's⁹⁶⁴) as measured by dividing the population size by the land area. They comprise 10 African countries (Chad, Mali, Namibia, Zambia, Algeria, Zimbabwe, Djibouti, The DRC, Botswana, and Mauritania) and 16 other countries.⁹⁶⁵
801. This analysis suggests there is a lower percentage of countries with population densities greater than South Africa that have lower prices for 500MB mobile prepaid bundles compared with those with higher prices. However, this is not confirmed by median population densities; the median population density of countries with lower 500MB mobile prepaid data prices is 93.5 and the median population density of countries with higher 500MB prices is 69.4. Therefore, population density does provide any clear indication for pricing outcomes.
802. **Urbanisation.** Urbanisation is measured as the percentage of the total population

961 These are Myanmar, Iran, and Kenya.

962 This is South Korea.

963 These countries are Estonia, Kyrgyzstan, Uruguay, Bhutan, Sweden, Lithuania, Lao, Belarus, Vanuatu, Latvia, Guyana, Iceland, The Bahamas, New Zealand, Bolivia, Kazakhstan, Papua New Guinea, and Chile.

964 This is Fiji.

965 These countries are Canada, Peru, Finland, Fiji, Australia, Paraguay, Mongolia, Oman, The United States, Norway, Belize, Solomon Islands, Colombia, Montenegro, Suriname, and Saudi Arabia.

that lives in rural areas.⁹⁶⁶ Based on World Bank data, 66.36% of the South African population live in urban areas. There are 62 countries of 101 (61.4%) with better 500MB mobile prepaid data prices as well as lower urbanisation levels than South Africa (and a further 6 have urbanisation measures within 5% of that of South Africa's⁹⁶⁷). They comprise 23 African countries (only Gabon has a materially higher urbanisation level than South Africa), 2 BRICS countries (China and India), and 43 other countries.

803. There are 34 countries of 66 (51.5%) with worse 500MB mobile prepaid data prices as well as lower urbanisation levels than South Africa (and 5 others with urbanisation level of within 5% of that of South Africa's⁹⁶⁸). They comprise 17 African countries (only Algeria and Djibouti are materially more urbanised than South Africa) and 22 other countries.
804. This analysis shows there is a slightly higher percentage of countries with higher levels of urbanisation than South Africa that have lower prices for 500MB mobile prepaid bundles compared with those with higher prices. However, this is not confirmed by the median urbanisation rates; the median urbanisation level is 58.0% among countries with lower 500MB prices and 64.9% among countries with higher prices. Ultimately, urbanisation measures do not appear to be a strong indicator of pricing outcomes.

GDP per capita

805. The final non-price factor upon which the Commission has assessed countries with lower or similarly priced 500 MB data bundles is GDP per capita, which it has used

as a proxy for economic development (in USD PPP).

806. The link between GDP per capita and data prices was discussed in the Provisional Report⁹⁶⁹, in relation to Frontier Economics' analysis in Vodacom's first submission to the Commission linking data prices to GDP per capita.⁹⁷⁰ The Commission showed that the relationship between GDP per capita and ITU 500MB mobile prepaid data prices using the same method that Frontier had used (using a simple regression analysis between these two variables) was small and not statistically significant at even the 10% level.⁹⁷¹
807. Nonetheless, the Commission has assessed GDP per capita in the same way as it has for the other variables discussed above.
- 807.1 Altogether, 49 countries (48.5%) among the 101 countries that have lower 500MB mobile data prices than South Africa have higher per capita GDP levels than it (a further 3 have GDP levels that are within 5% of that of South Africa⁹⁷²). Of these countries, 2 are in Africa (Mauritius and Gabon), 3 are BRICS countries (China, Russia, and Brazil), and 47 are in other countries. Using the reasoning of Vodacom's economists and MTN, 52 countries offer lower 500MB mobile prepaid data prices than South Africa despite their populations having a higher or similar ability to pay compared to South Africa.⁹⁷³
- 807.2 Altogether, 36 countries (54.5%) among the 66 countries that have higher 500MB mobile data prices than South

966 Based on submissions, considering urbanisation rates may be helpful as it can determine whether most of the population is concentrated in certain areas of the country with very little dispersion (which would lower network coverage costs). Note that the degree of urbanisation ignores the spread of the rural population (the rural population in some countries may be more concentrated in some areas of the country whereas in others they may be relatively spread out across the entire country).

967 These are Tunisia, Bolivia, Ukraine, Latvia, Lithuania, and Estonia.

968 These are Botswana, Montenegro, Cyprus, Panama, and Mongolia.

969 DMI Provisional Findings and Recommendations (non-confidential version), 24 April 2019, para. 997-1016

970 Frontier Economics report in Vodacom's submission (non-confidential version) dated 30 November 2017,

971 DMI Provisional Findings and Recommendations (non-confidential version), 24 April 2019, para. Pp/395-396

972 These are Indonesia, Sri Lanka, and Albania.

973 MTN's Submission, 14 June 2019, p. 8 (Non-Confidential). Appendix B p.3-4; Frontier Economics report in Vodacom's submission (non-confidential version) dated 30 November 2017



Africa have higher per capita GDP levels than it (a further 2 have GDP levels that are within 5% of that of South Africa⁹⁷⁴). Of these countries, 3 are in Africa (Seychelles, Algeria, and Botswana) and 35 are elsewhere.

808. This analysis suggests there is a slightly lower percentage of countries with higher GDP per capita levels than South Africa that have lower prices for 500MB mobile prepaid bundles compared with those with higher prices. This is confirmed by the fact that the median GDP level of the countries with lower prices for 500MB mobile prepaid data bundles is 13 189 USD PPP and the median GDP per capita of countries with higher 500MB prices is 15 249. Nonetheless, given the small differences, it does not appear that GDP per capita is a strong indicator of pricing outcomes.
809. In summary, Vodacom, MTN, and Telkom all criticised the Commission's benchmarking analysis for not taking into account specific non-price factors such as cost- and quality-related factors, which they argue could explain the higher prices for data in South Africa. However, the operators themselves have failed to show any evidence for how these non-price factors would actually affect prices or the significance of these factors more broadly. Thus even though the Commission has used the benchmarking evidence merely to show that further analysis is justified, it is not clear that accounting for these factors could change the poor performance of South Africa in any event. This is particularly true for spectrum where MTN and Vodacom have focused much of their submissions.

974 These are Paraguay and Lebanon.

12. APPENDIX C: REGULATORY INTERVENTION ON MVNO ACCESS

810. In recognition of the inclination of MNOs to refuse access to MVNOs, many regulators across the world have intervened to promote MVNO access to MNO networks. Interventions have broadly been: (a) imposing conditions in mergers between MNOs; (b) imposing conditions for spectrum licensing; (c) directly regulating MVNO access; and (d) releasing guidelines for MVNO access. Examples of these interventions are described briefly below.

811. *Conditions of mergers between MNOs.*

- 811.1 The EC ruled that a 4-to-3 merger in Austria in December 2012 was conditional on the merged entity providing wholesale access to MVNOs at retail prices less 25%.⁹⁷⁵
- 811.2 In the merger between 02 and Three in Ireland in 2014, the EC made the transaction conditions on selling up to 30% of the merged company's network capacity to two MVNOs.⁹⁷⁶
- 811.3 The EC granted the merger between E-Plus and Telefonica in Germany in 2014 on the condition that the merged entity offer at least 20% of its network capacity to an MVNO, and this MVNO would have the option of

acquiring an additional 10% by 2020. The deal required MVNOs be given access to existing and future network technology.⁹⁷⁷

- 811.4 As a condition for a merger between CSL and New World Mobility and HKT in Hong Kong in 2014, the merged entity was required to continue to provide wholesale access to MVNOs "based on existing agreements for three years".⁹⁷⁸

812. *Conditions of spectrum licensing.*

- 812.1 During the auction of 3G spectrum in Ireland in December 2001, spectrum was awarded to MNOs on the basis that they allow MVNOs access to their networks.⁹⁷⁹ Three Ireland which was granted a 2.1GHz spectrum licence in 2017 was required to grant MVNOs access to its network and to do so at a wholesale price of retail minus 35%.⁹⁸⁰
- 812.2 In Hong Kong (2001), 3G licence awards required that MNOs open up 30% of their network capacity to MVNOs.⁹⁸¹
- 812.3 In 2012, Romania's national regulatory authority obliged three of four of MNOs that had just bid for 4G spectrum to host MVNOs.⁹⁸²

975 European Commission, Case No. M.6497, Hutchison 3G Austria/Orange Austria, 12 December 2012, p.165

976 Analyses Mason, 25 October 2018, "MVNO aspects of the Commission's mobile market review", p.31, 37

977 Analyses Mason, 25 October 2018, "MVNO aspects of the Commission's mobile market review", p.6, 40

978 Telegeography, 6 May 2014, "PCCW's acquisition of CSL approved by regulator, with conditions", available at: <https://www.telegeography.com/products/commsupdate/articles/2014/05/06/pccws-acquisition-of-csl-approved-by-regulator-with-conditions/> [Accessed 16 August 2019]

979 OECD, "Wireless Market Structures and Network Sharing", in *Digital Economy Papers* No. 243, p.73,88

980 Analyses Mason, 25 October 2018, "MVNO aspects of the Commission's mobile market review", p.31, 37

981 Analyses Mason, 25 October 2018, "MVNO aspects of the Commission's mobile market review", p.39; Yan, X. 2003, "3G Licensing in Hong Kong: A Unique Approach", in *Proceedings of the International Symposium on Advanced Radio Technologies, NTIA Special Publication*

982 Red Dawn Consulting. MVNO landscape: Global perspectives and New Zealand Applications: Non-confidential Report, 14 May 2019, p.34

- 812.4 In Portugal, the MNOs who participated in a spectrum auction were obliged to allow network access to MVNOs in a non-discriminatory way in the 800 MHz and in the 900 MHz spectrum bands.⁹⁸³
- 812.5 For the 2011 4G auctions in France, MNOs were more likely to win a license if they were willing to host MVNOs - especially full MVNOs - on their networks. In the end, all three winners of 4G licenses were willing to host full MVNOs on their networks.⁹⁸⁴
813. *Direct Regulation.*
- 813.1 The European Commission issued three different directives in 2002. The Access Directive obliged network operators to give access to their networks at fair prices. The Framework Directive noted that network operators with significant market power must provide fair access to their networks and are obliged to provide financial information to the regulator so that the fairness of network tariffs can be determined. Finally, the Universal Service Directive, meant that all subscribers who request it can retain their numbers regardless of the service they use.⁹⁸⁵ This reduces the barriers to entry for MVNOs (in addition to newer MNOs). Following this, in 2003, the European Commission issued a recommendation to national telecommunications regulators to assess the competitiveness of the market for wholesale access (and call origination).
- 813.2 Following the European Union (EU) Directive in this respect, the telecommunications regulator in Finland (2003) started requiring that incumbent network operators with significant market power “lease out network capacity at fair prices”.⁹⁸⁶ These operators are also required to communicate the terms and prices of interconnection to the regulator.⁹⁸⁷
- 813.3 In 2000, Danish MNOs with significant market power were required to open up their networks to MVNOs.⁹⁸⁸
- 813.4 Since 2016, the regulator in Norway has obliged Telenor to “meet all reasonable requests for access” and to offer terms that allow MVNOs to be profitable. In particular, it is prohibited from margin squeeze.⁹⁸⁹
- 813.5 In France, the regulator ARCEP requires that Orange, SFR and Bouygues comply with all “reasonable requests” by MVNOs requesting access to their networks.⁹⁹⁰
- 813.6 MNOs in Spain were obliged to offer wholesale access to MVNOs in 2005 after having been reluctant to do so. This occurred as the result of the Spanish regulator successfully demonstrating to the European Commission that the market was uncompetitive and that

983 OECD, “Wireless Market Structures and Network Sharing”, in *Digital Economy Papers No. 243*, p.73

984 OECD, “Wireless Market Structures and Network Sharing”, in *Digital Economy Papers No. 243*, p.73; MVNO Europe, 8 November 2017, “Response to BoR (17) 176 Draft BEREK Work Programme” 2018, p.8

985 Hashim, 2005, “Mobile Virtual Network Operators: Special reference to regulatory environments”, Academic Thesis at the University of Manchester, p.22-26

986 Kiiski, A. “Mobile Virtual Network Operators: Case Finland”. In *Semantics Scholar*, p. 3. Available at: <https://pdfs.semanticscholar.org/1a80/74977ade4da0c902693a32eed8617acb1559.pdf> U [Accessed 16 August 2019]

987 Kiiski, A. “Mobile Virtual Network Operators: Case Finland”. In *Semantics Scholar*, p. 3. Available at: <https://pdfs.semanticscholar.org/1a80/74977ade4da0c902693a32eed8617acb1559.pdf> U [Accessed 16 August 2019]

988 Analyses Mason, 25 October 2018, “MVNO aspects of the Commission’s mobile market review”, p.38; Lee, S., Chan-Olmsted, S.M., and Ho, H. 2008. In *The International Journal on Media Management*. Vol. 10; p.15

989 Analyses Mason, 25 October 2018, “MVNO aspects of the Commission’s mobile market review”, p.38

990 Analyses Mason, 25 October 2018, “MVNO aspects of the Commission’s mobile market review”, p.40; Mullenex, Richard, and Lallemand, Communications: regulation and outsourcing in France: overview, in *Thompson Reuters Practical Law*, available at: [https://uk.practicallaw.thomsonreuters.com/3-619-2685?transitionType=Default&contextD ata=\(sc.Default\)&firstPage=true&bhcp=1](https://uk.practicallaw.thomsonreuters.com/3-619-2685?transitionType=Default&contextD ata=(sc.Default)&firstPage=true&bhcp=1) [Accessed 8 November 2019]

- MNOs in Spain had significant market power.⁹⁹¹
- 813.7 Malaysia started regulating MVNO access in 2015. MNOs are required to publish the terms and conditions that they offer MVNOs and these conditions are to be reasonable, equitable, and non-discriminatory. MVNOs can either accept the offer from MNOs or negotiate further but for a specified duration (4 months if there is no prior arrangement and 3 months with one). Dispute resolution by the Malaysian Communications and Multimedia Commission (“MCMC”) can be invoked if necessary.⁹⁹²
- 813.8 Regulations regarding MVNO access has been regulated in stages in Japan. In 2007, the Ministry of Internal Affairs and Communication (“MIC”) clarified the rights and obligations between MVNOs and MNOs and set up a formal dispute settlement procedure. Seven years later in 2014, mobile line wholesale pricing calculations were changed such that they led to a reduction in wholesale prices, thereby benefitting MVNOs. In 2017, the MIC started requiring that MNOs provide MVNOs with access to their networks.⁹⁹³
- 813.9 In Chile, the regulator implemented regulation in 2017 that sets out the rights and obligations of both parties in wholesale agreements between MVNOs and MNOs. It also sets out a conflict resolution process.⁹⁹⁴
814. *Guidelines.*
- 814.1 In May 2012, the National Authority for Management and Regulation in Communications (“ANCOM”) in Romania approved regulatory guidelines for MVNOs, which are not mandatory. Negotiations between MNOs and MVNOs ought not to exceed 6 months for new agreements and 3 months for follow-up agreements. The Guidelines also recommend that access agreements are non-discriminatory in terms of service quality relative to the MNO’s own retail services.⁹⁹⁵ In addition, the terms of agreements ought not to restrict the commercial independence of MVNOs, their ability to change host operators, nor their ability to have agreements with multiple operators at a time.⁹⁹⁶
- 814.2 In 2016, the regulator in Singapore, IMDA, published guidelines setting out when negotiations are considered to be in “*in good faith*”.⁹⁹⁷

991 Analyses Mason, 25 October 2018, “MVNO aspects of the Commission’s mobile market review”, p.40; European Commission, 31 January 2016, “Competition: Commission endorses, with comments, Spanish regulator’s measure to make mobile market more competitive”, available at: https://europa.eu/rapid/press-release_IP-06-97_en.htm [8 November 2019]

992 Karen Woo (Director of MCMC), 27 August 2018, “Regulatory framework for MVNO”, in *ITU-T: Regional Standardisation Forum for Asia*

993 Kobayashi, H., and Lai, D. January 2019. “The Technology, Media and Telecommunications Review - Edition 9: Japan”. Available at: <https://thelawreviews.co.uk/edition/the-technology-media-and-telecommunications-review-edition-9/1178013/japan> [16 August 2019]

994 Analyses Mason, 25 October 2018, “MVNO aspects of the Commission’s mobile market review”, p.40

995 Claudia Jelea and Anna Morogai, 6 June 2012, “Regulatory guidelines for MVNO approved in Romania”, available at: <https://www.lexology.com/library/detail.aspx?g=d921a5d8-316b-4729-8234-285700722c72> [Accessed 16 August 2019]

996 Telegeography report, 8 May 2012 “ANCOM approves MVNO regulatory guidelines”, available at: <https://www.telegeography.com/products/commsupdate/articles/2012/05/08/ancom-approves-mvno-regulatory-guidelines/> [Accessed 16 August 2019]

997 Analyses Mason, 25 October 2018, “MVNO aspects of the Commission’s mobile market review”, p.39

13. APPENDIX D: ALTERNATIVE FIXED LINE ACCESS

13.1 THE EXTENT OF INFRASTRUCTURE ROLL-OUT TO UNDERSERVED AREAS

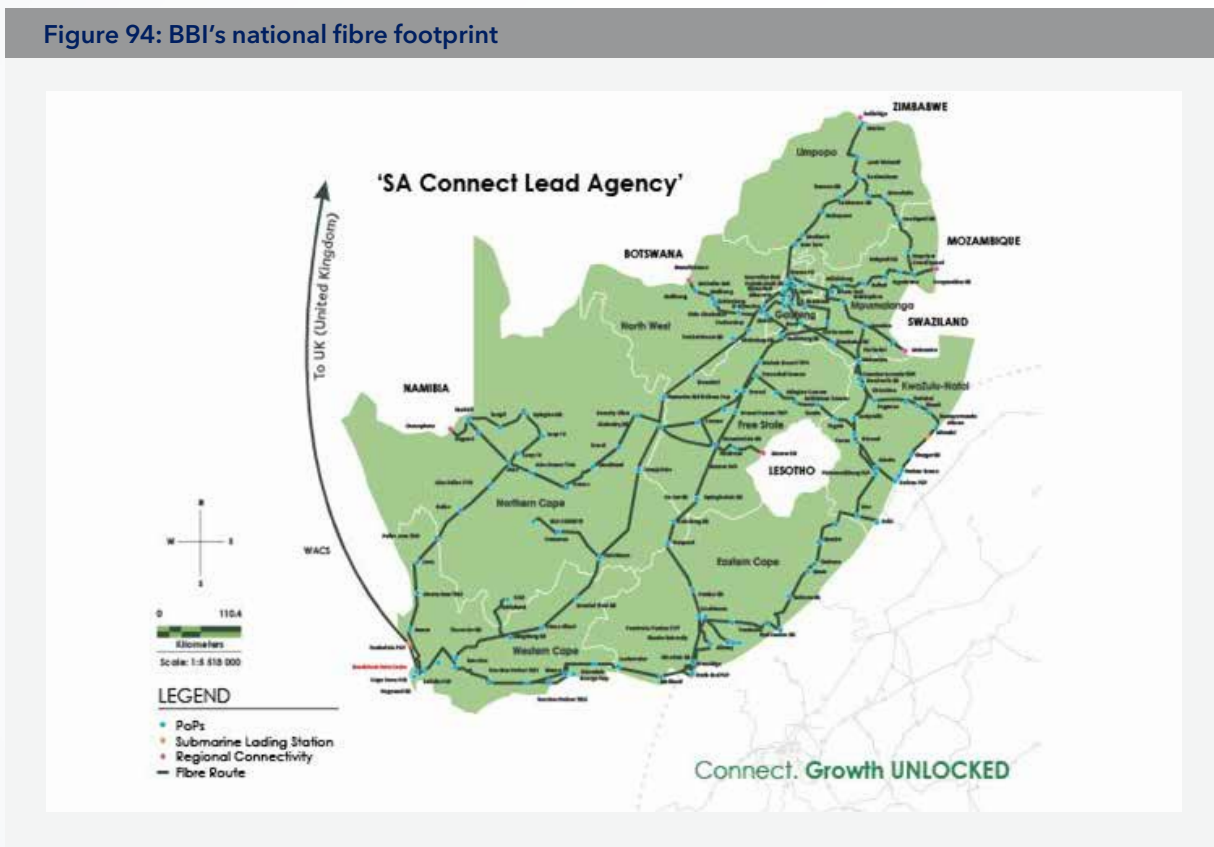
815. In analysing the extent of core metro infrastructure roll out, we analyse the backhaul footprints of metro fibre suppliers such as Dark Fibre Africa (“DFA”), Broadband Infraco (“BBI”), Liquid Telecom, Fibreco and Telkom. These are major metro fibre

suppliers and their fibre footprints provide an indication of the spread of core metro infrastructure in South Africa.⁹⁹⁸

Broadband Infraco national long-distance network

816. Broadband Infraco is a licensed state-owned company in the telecommunications sector and it provides long distance national and international connectivity to licensed private sector partners, license-exempt projects

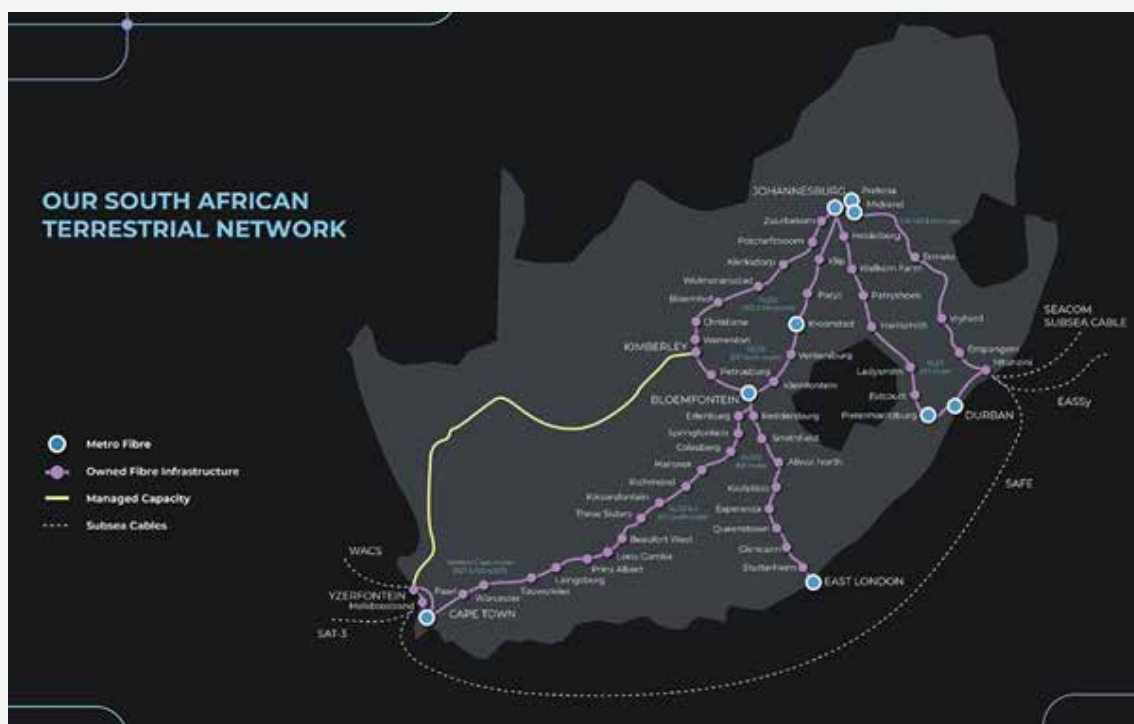
Figure 94: BBI’s national fibre footprint



Source: BBI Website⁹⁹⁸

998 BBI Network Overview [Online]. Available at <https://ww2.infraco.co.za/network-overview/>. Accessed 10 October 2019]

Figure 95: Seacom network route map



Source: Seacom Website⁹⁹⁹

of national importance and to previously underserved areas.¹⁰⁰⁰

817. As illustrated in Figure 94, BBI’s national long distance network covers all nine provinces, mostly in major cities and towns. Its fibre optic network currently comprises about 15 000 km of fibre and has 156 Points of Presence (PoPs) countrywide.¹⁰⁰¹

Seacom’s network

818. Seacom, a mainly submarine cable provider acquired FibreCo Telecommunications in 2018. FibreCo owns and operates a national open access dark fibre network, providing infrastructure, connectivity, and services across South Africa.¹⁰⁰² Seacom acquired

FibreCo in order to expand their national network in South Africa beyond just been an international connection provider. As illustrated above, Seacom has extensive fibre infrastructure and has metro fibre points in major towns and cities such as Bloemfontein, Cape Town, Durban and East London.¹⁰⁰³

Liquid Telecom backhaul footprint

819. Although mainly a cross border network covering 70,000 km, Liquid Telecom has a fibre network that connects Cape Town to Cairo passing through (as illustrated below) some major cities in South Africa.¹⁰⁰⁴

999 Seacom Network [Online]. Available at <https://seacom.co.za/network> [Accessed 08 October 2019]

1000 BBI Network Overview [Online]. Available at <https://ww2.infraco.co.za/network-overview/>. Accessed 10 October 2019]

1001 BBI Network Overview [Online]. Available at <https://ww2.infraco.co.za/network-overview/>. Accessed 10 October 2019]

1002 Seacom buys FibreCo [Online]. Available at <https://mybroadband.co.za/news/business-telecoms/284826-seacom-south-africa-buys-fibreco.html> [Accessed 28 October 2019]

1003 Seacom Network [Online]. Available at <https://seacom.co.za/network> [Accessed 08 October 2019]

1004 Liquid Telecom Network [Online]. Available at <https://www.liquidtelecom.com/about-us/network-map.html> [Accessed 08 October 2019]

Figure 96: An extract of Liquid Telecom network



Source: Liquid Telecom Website¹⁰⁰⁵

DFA backhaul footprint

820. As illustrated in Figure 97, Figure 98 and Figure 99, DFA's network covers large metros and towns such as Johannesburg, Tembisa, Durban, Cape Town, Shoshanguve, Hammanskraal, and many others. DFA also has presence in 25 secondary cities (including Mthatha, Polokwane,

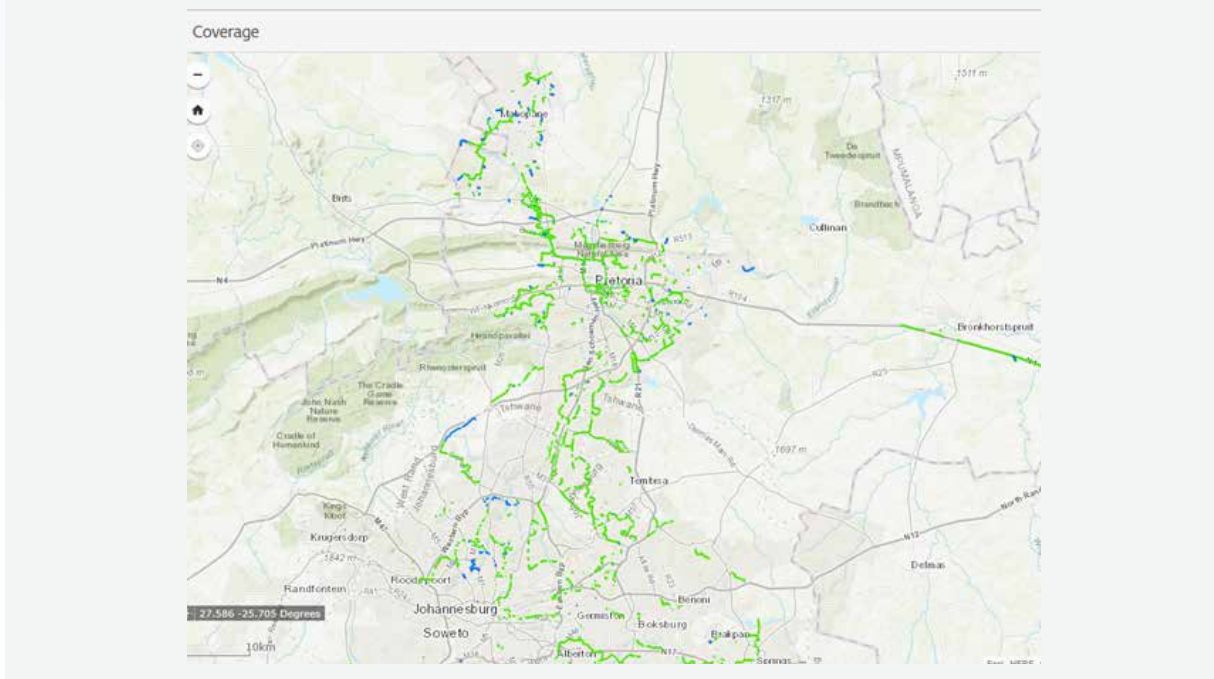
Potchefstroom) that make up a big portion of the market.¹⁰⁰⁶ DFA currently operates on an open access basis and it submits that this model is cost effective because DFA builds the network and is available to anyone who wants to have access to it.¹⁰⁰⁷

1005 Liquid Telecom Network [Online]. Available at <https://www.liquidtelecom.com/about-us/network-map.html> [Accessed 08 October 2019]

1006 Meeting with DFA held on 09 May 2019

1007 Meeting with DFA held on 09 May 2019

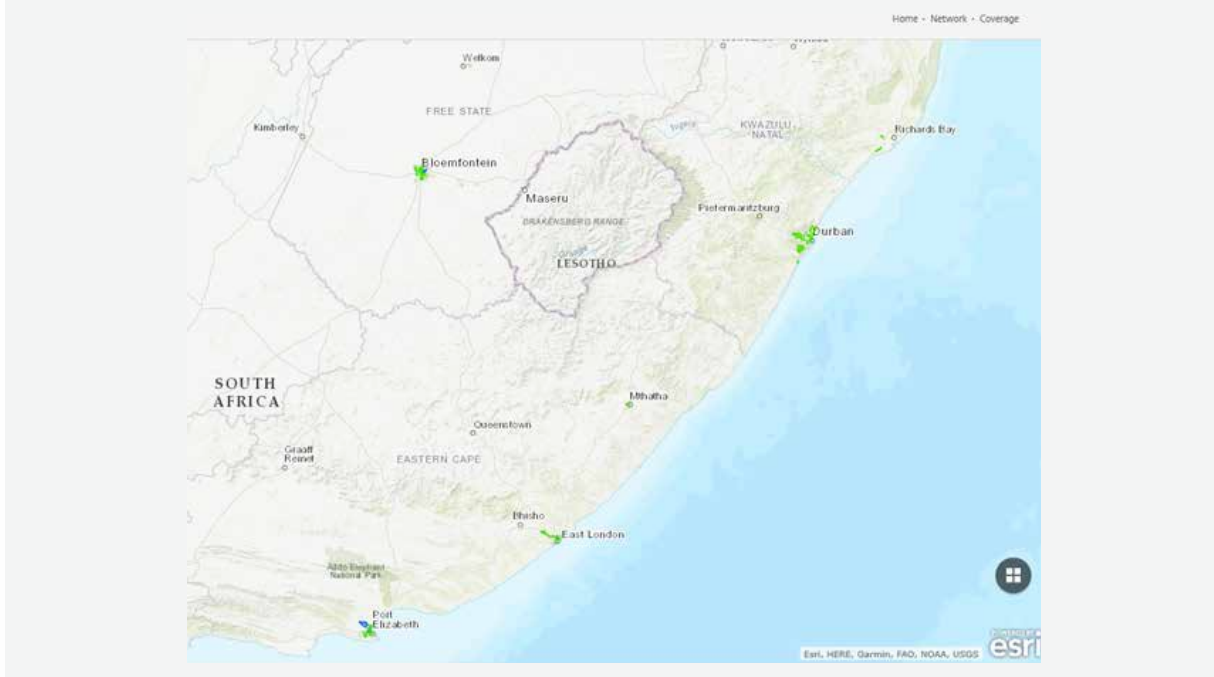
Figure 97: DFA Gauteng Coverage Map



Source: DFA Website ¹⁰⁰⁸

Note: The above figure is an extract of DFA coverage map showing the extend of DFA's network in Gauteng.

Figure 98: Bloemfontein, Durban and Eastern Cape Coverage Map



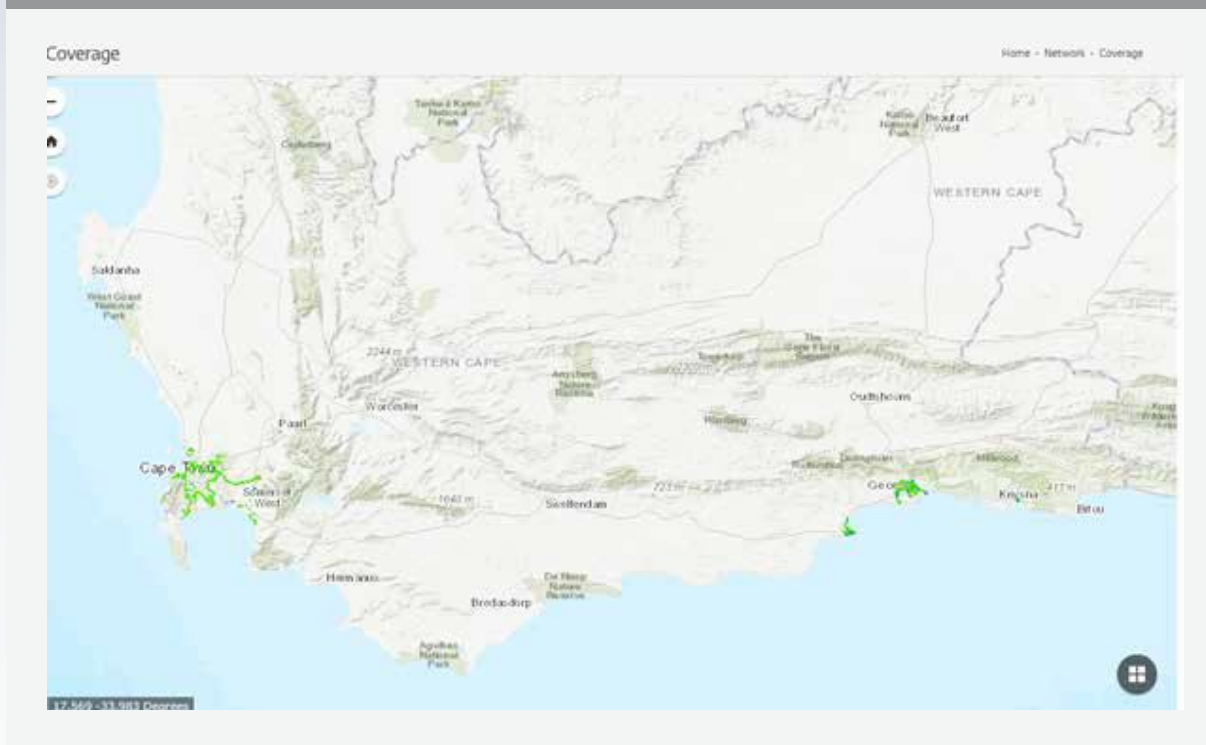
Source: DFA Website ¹⁰⁰⁹

Note: The above figure is an extract of DFA coverage map showing the extend of DFA's network in Bloemfontein, Durban, Port Elizabeth, Durban and Mthatha.

1008 DFA Coverage [Online]. Available at <http://www.dfafrica.co.za/network/coverage/>. [Accessed 08 October 2019]

1009 DFA Coverage [Online]. Available at <http://www.dfafrica.co.za/network/coverage/>. [Accessed 08 October 2019]

Figure 99: DFA Western Cape Coverage Map



Source: DFA Website ¹⁰¹⁰

Note: The above figure is an extract of DFA coverage map showing the extend of DFA's network in George and Cape Town.

Telkom's network coverage

821. Telkom has by far the largest fibre footprint in the country with a total fibre network crossing 163 800 km across the country.¹⁰¹¹

The span of Telkom's network is illustrated in Figure 100.

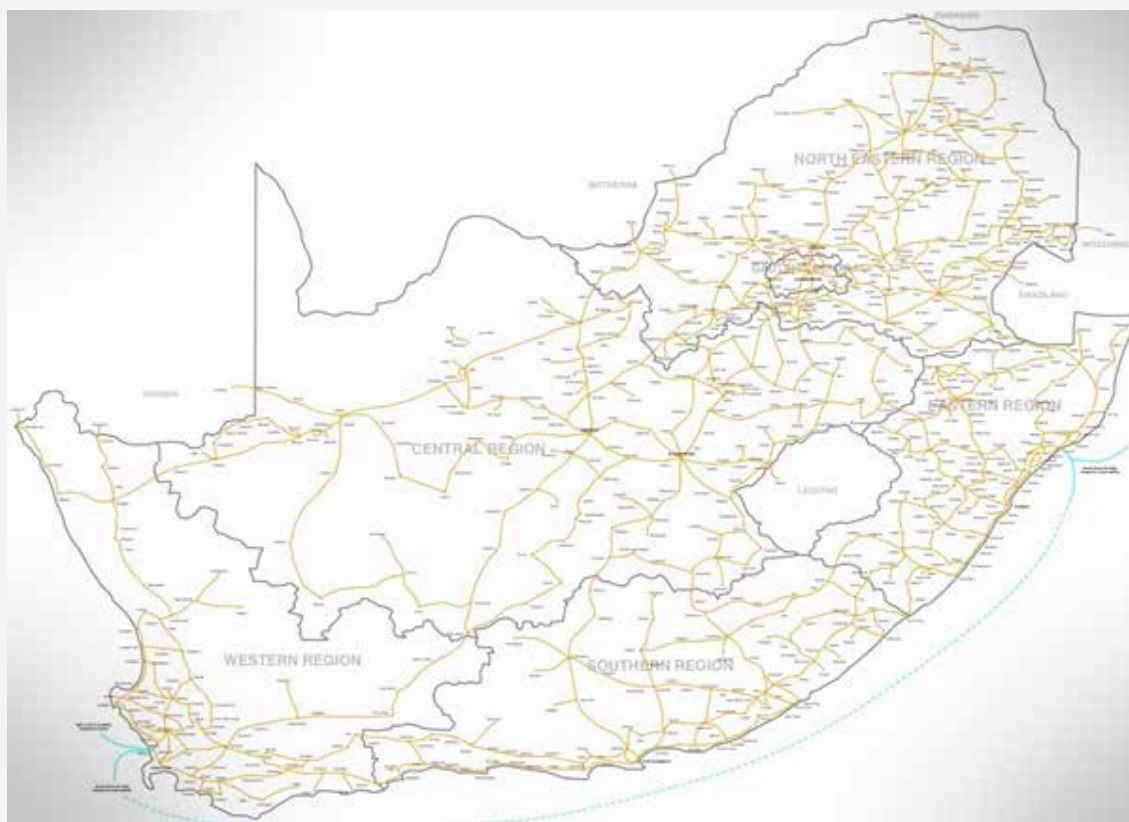
822. Therefore, there is widespread core infrastructure coverage even covering certain townships such as Alexandra, Tembisa and Soshanguve. While townships may not be covered by metro infrastructure, townships in urban areas especially are likely to be adjacent to richer areas, and therefore connecting townships to core network infrastructure should not be a significant challenge.

823. In addition, some of the backhaul suppliers such as DFA also connect MNOs' mobile sites while MNOs also self-provide backhaul to their towers. It is common cause that mobile broadband services cover 99% of the South African population, which means that technically, 99% of the population is close to fibre networks, although not necessarily in sufficient proximity that last-mile FTTH infrastructure is a real or imminent possibility. However, the prevalence of metro-level infrastructure and the density of mobile sites in more urban areas suggests that there does not appear to be an insurmountable barrier in rolling out FTTH or last mile infrastructure in more urban low-income areas. More so, as discussed below, wireless solutions are more commonly used in rural areas in instances where there is no network infrastructure deployment nearby, as is commonly the case.

1010 DFA Coverage [Online]. Available at <http://www.dfafrica.co.za/network/coverage/>. [Accessed 08 October 2019]

1011 Telkom Group Provisional Annual results for the year ended 31 March 2019 [Online]. Available at http://www.telkom.co.za/ir/apps_static/ir/pdf/financial/pdf/Telkom_Annual_Results_Booklet_2019.pdf. [Accessed 25 June 2019]

Figure 100: Telkom's national fibre network



Source: mybroadband¹⁰¹²

824. Our understanding therefore is that urban low-income areas and many other low-income areas adjacent to higher income areas in less urban areas, are served by core infrastructure networks, with the primary challenge being the last-mile roll-out of FTTH infrastructure the barrier to fixed access, and the route to closing the supply gap.

1012 Mybroadband *Telkom's massive fibre network versus the rest* 22 August 2018 [Online]. Available at <https://mybroadband.co.za/news/fibre/272491-telkoms-massive-fibre-network-versus-the-rest.html> .[Accessed 25 June 2019]

14. APPENDIX E:

SUBMISSION TO ICASA ON THE ASSIGNMENT OF SPECTRUM IN LIGHT OF THE POLICY DIRECTIVE ISSUED ON 26 JULY 2019

14.1 DETAILED SUBMISSIONS ON THE ASSIGNMENT OF SPECTRUM TO THE WOAN

825. Paragraphs 3.2 to 3.6 of the Policy Directive set out the factors that ICASA must consider in the licensing of a WOAN but is not prescriptive as to what ICASA may conclude in respect of these factors. This section sets out the views of the Competition Commission as provided to ICASA in respect of these factors, organised around themes.
826. *The business and consortium requirements for a WOAN.* As outlined in the high-level comments, it is absolutely essential that a successful WOAN applicant is not only capable of offering a service but doing so competitively. If it is incapable of doing so then the policy will not achieve the objective of enhancing service level competition as retail customers will not be competitive themselves. As also outlined above, it is likely to be better to not award the WOAN spectrum rather than award it to a consortium that is incapable of delivering on this objective. This suggests a few important considerations in undertaking the licensing of the WOAN.
- 826.1 The form of assessment and award needs to reflect this need. ICASA should consider certain pre-qualification criteria and then a form of beauty contest. Assessing the financial, business and technical capabilities is unlikely to lend itself to some form of simplistic bidding process. In addition, there is in effect no single dimension on which to bid. This does not mean that such a process is purely discretionary. It should rather be one where clear and transparent assessment criteria are set out by ICASA to ensure no single consortium is favoured. Also, the criteria should set out the minimum thresholds which must be met on each criteria in order even award the license. Such assessment should then also be done by independent experts with a clear assessment methodology that is able to effectively distinguish the true capabilities of the consortium. It may also be followed by negotiations with the preferred candidate with a second candidate kept in the wings should negotiations fail.
- 826.2 Some of the factors that should be considered in that assessment criteria are those highlighted in the Policy Directive. In doing so, some aspects for ICASA to consider would include:
- 826.2.1 Consortium structure requirements should be qualification criteria and not a competitive factor in selection. These should be set in a manner that does not hinder strong consortia leads with operational control as such control is often necessary in order to risk financial capital.
- 826.2.2 The speed and ability to get the network up and functioning and doing so at a competitive price is critical to business success. This may well favour existing licensees and such preferences may be suitable.

826.2.3 The financial resources already available but also committed for future working capital whilst the network is built remain critical. It is self-evident that new networks will invariably make losses for many years before it can turn profitable operationally. Even then, the profits need to repay loans and support further capital investment. These all need to be stringently tested.

826.2.4 Along with the financial resources is the business plan which forecasts the flow of demand and turnover as against the cost of rollout. These need to be sense-checked against the likely evolution of the business given its pricing levels and customer base. Very often applicants will be optimistic in their turnover forecasts.

827. *Spectrum fee, capacity purchase and wholesale access benefits.* The WOAN already faces a disadvantage as a late entrant, and therefore any advantage it can gain to offset these disadvantages are necessary in order for it to be a competitive success.

827.1 The holiday on spectrum application and ongoing fees should be provided as the rewards to the WOAN are in the enhancement of competition. Given the financial challenges of entry, it makes little sense to add to that burden which can only slow network rollout and the move to profitability.

827.2 Similarly, the requirement around 30% capacity purchase is an essential element to the likely success of the WOAN. This is because it not only provides a base demand load to support the cash flow and lower unit costs of the WOAN, but also it provides the WOAN with some leverage in the wholesale market to negotiate favourable wholesale agreements. Unfavourable ones are likely to result in higher costs to those required to purchase that capacity. How

this should be allocated to licensees is discussed in the next section.

827.3 Wholesale facilities access and leasing, as well as roaming initially, at competitive rates is also essential to the success of the WOAN. The scope to regulate this access should be built into the license conditions imposed on the successful applicants for the remaining high demand spectrum. However, the bargaining power may be sufficient along with the threat of regulation to ensure an equitable outcome. If this does not materialise, the scope to regulate will prove essential.

828. *Functional separation, non-discrimination and other regulatory interventions.*

828.1 The requirement for functional separation is an important principle that should be put in place as a license condition, even if the initial consortium does not include firms active in downstream services. This is because it needs to account for potential changes in the consortium and a lack of functional separation compromises the role of the WOAN as an open access provider.

828.1.1 Regulation beyond simple functional separation is only required to the extent that the firm engaged in downstream services holds a controlling stake in the WOAN. This is because if there is no control, then it is unlikely to persuade other consortium members to favour it over rival customers.

829. Functional separation is likely to make the non-discrimination provision redundant for most customers as there is little incentive to discriminate. In this context, it is important to note that non-discrimination does not imply uniform pricing, as different volumes and conditions of access may justify different prices. What it does require is that any price difference has an objective justification and that the difference is reasonably related to that justification. However, non-

Table 51: Current spectrum allocation and CSIR recommended minimum for WOAN

Band (Mhz)	Vodacom	MTN	Cell C	Telkom	Liquid Telecom	Rain	WOAN minimum (CSIR)	Remaining non-WOAN
700	-	-	-	-	-	-	-	2 x 30 Mhz
800	-	-	-	-	2x4.92 MHz	-	2x25 Mhz	-
900	2x11 MHz	2x11 MHz	2x11 MHz	-	-	-	-	-
1800	2x12 MHz	2x12 MHz	2x12 MHz	2x12 MHz	2x12 MHz	2x12 MHz 1x10 MHz	-	-
2100	2x15 MHz 1x5 MHz	2x15 MHz 1x10 MHz	2x15 MHz	2x15 MHz 1x20 MHz	-	-	-	-
2300	-	-	-	1x60 MHz	-	-	-	-
2600	-	-	-	-	-	-	2x20 Mhz 1x25 Mhz	2 x 50 Mhz
3500	-	-	-	2x14 MHz	2x28 MHz	-	-	-
Total	81 MHz	86 MHz	76 MHz	162 MHz	89.94 MHz	34 MHz	115 Mhz	160 Mhz

Source: Provisional Report based on submissions, and Policy Directive. Spectrum other than the WOAN spectrum is based on ICASA ITA of 2016 (Government Gazette, No. 40145).

discrimination should be stipulated for a few reasons.

829.1 The one aspect where discrimination could emerge is in respect of those licensees required to purchase capacity from the WOAN. This requirement provides the WOAN with some pricing power absent regulation over these customers. Non-discrimination may be a less intrusive form of ensuring that pricing power is not abused, as the price levels set would have to be at a level that also enables the WOAN to attract other customers.

829.2 Second, it provides a basis for enforcing non-discrimination through a licensing violation which is a less burdensome and rapid enforcement mechanism relative to competition law. It will also provide confidence to customers as to their fair treatment, including the other spectrum licensees.

830. Consider the amount of spectrum to be reserved for the WOAN. The amount of

spectrum allocated to the WOAN will depend in part on whether the applicant is an existing MNO or not. The CSIR study is for a *minimum* amount of spectrum¹⁰¹³ for a *de novo* entrant. To the extent that an existing MNO is awarded the WOAN, less spectrum may be required but enough should be provided such that there is a strong incentive to compete for the WOAN licence. It may also provide a potentially important and necessary advantage on the WOAN. It is not clear to what extent the process can account for this, but if consortia with existing operators are ultimately given preference, then ICASA needs to assess if the joint pool of spectrum (existing spectrum plus WOAN spectrum) would be sufficient.

831. *Universal service and access obligations should be appropriate.* The objective of the WOAN is to provide a competitive platform for retail service providers, in particular to those without access. For this reason it is a likely imperative that it is subject to some conditions in respect of coverage requirements, and should be encouraged

1013 Government Gazette Notice No. 41935, 27 September 2018

to extend that coverage in rural areas. However, the sequencing and overall coverage requirements should also account for the business imperatives of a successful launch and development of the WOAN. This may mean that initially the business focuses on areas where it can generate turnover quickly, such as urban areas, and reduce the burden of extending coverage into the least densely populated areas. These may come with high incremental costs relative to incremental revenue, and competition from other areas should result in these gains being extended to these areas.

14.2 ASSIGNMENT OF SPECTRUM NOT RESERVED FOR THE WOAN

832. Paragraph 2.1.4 sets out the policy objectives that an assignment of spectrum must achieve, albeit that how they must be achieved is not prescribed. Two of these objectives are relatively straightforward to implement, namely compliance with empowerment provisions and ensuring that no single entity may control the spectrum assigned in this process. This submission therefore focuses on the first three, namely the leasing of facilities and provision of wholesale capacity to other licensees upon request, including to the WOAN, procurement of capacity from the WOAN and the universal service and access obligations. This section sets out some initial views of the Competition Commission as submitted to ICASA in respect of these policy objectives, starting with the general approach to licensing and allocating the remaining spectrum.

833. *An innovative approach will be required for licencing the remaining spectrum.* As outlined in the high-level summary, using the spectrum assignment process to promote competition and affordability is a key recommendation of the DSMT Provisional Report and the Policy Directive. ICASA has room and justification to use the spectrum process for this objective, without the same constraints and hurdles faced

in market inquiries. However, the current industry context suggests that a typical lots system, with open bidding on a few lots, may not achieve the desired outcome. Therefore, ICASA should consider more innovative means of licensing the remaining spectrum, including set-asides, multiple lot systems and reserve prices. In particular:

833.1 Using an auction or reserve price for all lots such that an operator under significant financial pressure (i.e. Cell C) does not apply will limit the firm's ability to compete and result in negative consequences for competition. Competition for spectrum is also likely to be muted. Telkom Mobile's current lack of sub 1GHz spectrum in contrast to its rivals, and that band's importance to a competitive offering, creates a risk that competition may be weakened if it is unable to effectively compete for that band due to the positions of MTN and Vodacom.

833.2 This is amplified by the fact that Vodacom and MTN have substantial incumbency bidding advantages over all remaining potential rivals given their financial positions and their installed base capacity enabling them to monetise the spectrum quickly and therefore bid more aggressively. The Provisional Report's finding that Vodacom and MTN have market power and continue to enjoy first-mover advantages (or at least the fruits of those advantages) would suggest that awarding more spectrum to Vodacom and/or MTN compared to other operators (Cell C / Telkom) would reinforce their market positions and thus the objective of enhancing competition in the sector would be harmed. Even awarding the same amount of spectrum to MTN and Vodacom relative to the smaller operators may result in negative competition affects, or at least a continuation of the status quo, which the Provisional Report finds is harmed by a lack of sufficient competition. Thus, a typical lots system with similar lots

may hurt competition (or at least miss an opportunity to enhance competition).

833.3 The DSMI Provisional Report suggests that asymmetric assignments whereby smaller players get more spectrum may be appropriate. Indeed, Vodacom's submissions allege that Telkom has become a strong competitor due to additional spectrum holdings relative to itself. In addition, smaller data-only players like Rain have the potential to play an important role. While Rain does not appear to exert any significant constraints on the incumbents thus far, partly as it only serves LTE-enabled devices, it does represent an innovative player. Its combination of infrastructure and spectrum provided a strong negotiating position reaching its roaming and site access agreement with Vodacom. Given the growing relevance of data over voice services, such firms may have an increasingly important competitive role to play in future. As such ICASA should consider spectrum assignments specifically set aside for smaller or non-national firms, data-focused firms, and even regional spectrum licences that further competition and innovation in the market.

833.4 In summary, bold approaches such as specific set-asides for current players to address competition (smaller and data-only players) and/or correct imbalances in previous assignments (e.g. no low frequency spectrum for Telkom) should be considered alongside auction approaches as well as commitments for pass through in certain lots.

834. *Requirements for facilities leasing and provision of wholesale capacity.* As already outlined above, cost-based access to facilities and competitive roaming rates are essential elements to ensuring a competitive WOAN that is more likely to achieve the policy objectives set for it. The DSMI Provisional Report also considers these wholesale markets as essential to the competitiveness of other challenger

networks, as does the policy direction evident in the proposed amendments to the ECA. The spectrum assignment process is an opportunity to implement these through conditions rather than lengthy regulatory processes. Proposals as to how to approach these include:

834.1 Implementation of a proper cost-based facilities access and leasing regime on all existing licensees assigned spectrum in this process. Such a regulatory approach is both proportionate and is consistent with the policy objective of promotion of infrastructure sharing to reduce overall costs in the system. Cost-based pricing ensures a fair return on investment and therefore is unlikely to undermine incentives to invest. It also ensures that competition is based on innovation and service rather than first-mover location advantages. This should be extended to all licensees and not just the WOAN, and cover all appropriate facilities, including the ducts and poles required for fibre backhaul.

834.2 Roaming is more complex to regulate given that the appropriate cost-standard may differ depending on the objectives that is sought to be achieved and the scope of roaming. If infrastructure competition is to be developed, then pure cost-based roaming may disincentivise such rollout unless there are strict time limits to such support. However, roaming charges should still have some maximum levels in order to avoid exploitation of inequitable bargaining relationships and to ensure competitive national rates are provided to those service providers using the WOAN. This is especially as national coverage may incentivise greater use of the WOAN by wholesale customers. This may be a non-discrimination or price-matching clause where existing licensees or the WOAN have leverage to extract better terms, or alternatively may be a stipulated discount on the effective retail or wholesale levels that an MNO provides to the market. This

is necessary if the WOAN and other challenger networks are to profitably compete with the larger networks for retail and wholesale customers.

- 834.3 Wholesale pricing to service providers (as opposed to other network providers) needs to be approached with more caution as wholesale supply is the entire basis for the WOAN's business model. As such, strict price controls on such wholesale pricing to larger and more efficient networks may divert customers away from the WOAN and undermine its viability. Competition at this level is therefore best served by promoting the WOAN with wholesale regulation to support a competitive market offer.
835. *Capacity offtake requirements for firms assigned spectrum should be based on traffic volumes not spectrum assigned.* Paragraphs 2.1.4(c) require an approach that ensures the policy objective of a 30% off-take of the WOAN's capacity is procured by those MNOs assigned spectrum. Furthermore, in terms of paragraph 3.5(b) (iv), the assignment process must consider a) the period for off-take based on a minimum of 5 years, and b) the allocation of off-take, including whether that allocation is proportionate to the amount of high demand spectrum assigned each licensee. The off-take requirement is essential in supporting the sustainability and competitiveness of the WOAN, and also provides leverage in wholesale arrangements as discussed above. However, the period and allocation require careful consideration and the following is proposed.
- 835.1 On the time period, the starting point is from when the WOAN is operational. However, networks take considerable time to roll out especially if the WOAN is to invest in infrastructure. In that context a five-year period is likely to be insufficient, especially as the capacity procured may be minimal in the first number of years if based on own capacity rather than roaming capacity. This then also provides limited security for once the full capacity is in place.

There is also the risk of a dramatic drop in capacity utilisation if networks stop the purchase of capacity immediately upon cessation. It is therefore recommended that a five-year period is set from when a specific network rollout milestone is reached, and then after that period the off-take can only be phased out over a further five-year period if the operator wishes to phase it out.

- 835.2 The suggested proportionate requirement for offtake in the Policy Directive seems to relate to the proportions of the additional spectrum awarded in this process and not overall spectrum holdings. Either way, such an approach effectively imposes a much greater requirement on smaller networks relative to larger networks when viewed as a proportion of their total data and voice traffic. If the WOAN is initially less cost competitive whilst they are building scale, then such an approach is likely to disadvantage the challenger networks relative to the larger networks. A preferred approach would be to allocate the capacity off-take in relation to actual network traffic of the licensees assigned spectrum in this round. This is more equitable given that licensees will have an equal burden in respect of their total costs of service provision. In order to avoid unnecessary complexities, that assignment should be based on 2019 traffic volumes, inclusive of data and voice.
836. *Universal access and service obligations must be promoted but also account for challenger networks and affordability first.* The Commission's view in the Provisional Report was that coverage is near universal and speeds are not as much of a concern as affordability and thus affordability and competition should be prioritised over coverage and speed. What may be key to note is that while coverage is near universal, true access is partially determined by price. There is also concern that excessive requirements on universal access and speeds will increase costs

across the networks. The requirements for roaming networks would also need to be considered carefully as if there are onerous requirements that also apply to the roaming party (rather than the host network) this may add to the bargaining power of the host networks, a key concern as pointed out in the Provisional Report. Our key observations on this policy objective are as follows:

836.1 This policy objective may work against other policy objectives and thus a balance should be struck. The Policy Directive affirms broader objectives such as the objective to “*promote the interests of consumers with regard to the price, quality, and the variety of electronic communications services*”¹⁰¹⁴. Although expressed in the context of spectrum scarcity, the Policy Directive also recognises that higher costs to communicate are undesirable. Requirements for true universal coverage (100%) and universal availability of certain speeds or technologies can add significantly to cost. It may also hinder challenger networks and other potential bidders for the spectrum. Thus, the cost implications of achieving this objective must be considered, as well as the competition implications if it means that only the largest players are able to apply for the spectrum.

836.2 It is not clear that ICASA needs to address the policy objective entirely through the spectrum assignment process. But potentially it can merely use this process to ensure further progress, with reasonable consideration of the possible negative effects. If speed or coverage targets are set, this should be reasonable. In any event, we understand from submissions that 3G coverage was close to 100% in 2018, which would allow for significant speeds in rural or underserved areas where the density of demand may also be less.

836.3 It is not clear that the *specific* spectrum awarded must be used in rural areas before other areas. The wording in paragraph 2.1.4(c) would suggest that the policy objective is that service “*obligations ... in rural and under-served areas*” must be complied with before the spectrum may be used. But, although a reference is made to the suitability of certain spectrum in rural areas, this does not appear to mean that the specific spectrum awarded must be used in the rural areas. Such an interpretation would unnecessarily limit the operators’ choices over which spectrum to use alongside which technologies in order to meet the regulatory requirements and run their own operations in the lowest cost manner possible. Perhaps the requirements here should only cover those firms already with universal coverage requirements as per their licenses. For instance, if a new entrant were only to be assigned spectrum in the 2,600 MHz range, the requirement to provide access in rural areas may be unreasonable.

836.4 Finally, this policy objective can be interpreted to focus on affordability. As mentioned above true access to mobile data services is also dependent on price. And thus, the policy objective itself may potentially be used to justify an approach of using the spectrum assignment process to garner reductions in prices.

837. *Conditions in respect of price reductions and changes to price structures should be imposed.* Following the point above, conditions requiring the reduction in prices to reflect the cost savings from the assignment of spectrum are critical if data is to become affordable and true access provided. On the basis of the DSMI, we make three suggestions in this regard.

837.1 *First, application should be given to asymmetric application based on either*

1014 Government Gazette Notice No. 42597, 26 July 2019, para. 1.6(i)

spectrum assigned or market share. It is not clear that pricing conditions are appropriate or required for smaller networks rather than larger networks. The smaller networks already price lower than the larger networks and at a less profitable level. Smaller networks will also be subject to the market pressure from larger networks reducing prices, and therefore do not need specific regulatory oversight to reduce prices. Indeed, it may be important to support their bids to secure spectrum, enabling a reduction in costs to respond to competitive pressure. It is therefore appropriate and proportionate to waive any such condition for firms that fall below a certain market share threshold or alternatively that do not secure certain high capacity spectrum bands.

- 837.2 *Second, pricing conditions should be imposed on headline prices.* Mobile operators have introduced several promotional pricing tariffs which have reduced effective prices but remain temporary and can be withdrawn at any time. However, the filed tariffs for packages that are offered on a permanent basis has remained largely unchanged for many years. Applying tariff reductions to the filed tariffs is therefore likely to be meaningless as this may only reduce tariffs to levels closer to current effective prices and not represent a real decline in pricing levels. The suggestion is that ICASA apply a price decrease to current effective rates which include the promotional tariffs and impose such reductions on headline tariffs of permanent filed tariff plans.
- 837.3 *Third, pricing conditions may represent qualification requirements or the subject of competitive bidding.* A question for the assignment process is how to establish what the appropriate price reduction levels should be. One means is to undertake an independent technical assessment, potentially using the existing interconnection pricing

models developed for ICASA, but also considering the potential demand effect of lower prices on total costs too. Another potential method is to make this the subject of competitive bidding for the spectrum, with minimum reserve prices to participate and bidding related to the level of average data prices. This would be preferable to bidding on a percentage decrease as that would penalise those with lower prices already.

- 837.4 *Fourth, consider specific conditions on pricing to low volume consumers.* The DSMI Provisional Report made recommendations around limiting the extent of differentiation in pricing of data products between small and larger bundles. This recommendation was on the basis that the price differential is seen as anti-poor. Whilst the extent of differentials based on effective rates may diverge from the differentials on headline tariffs, it is evident that greater competition for large data users is driving down headline prices for these customers relative to lower income small bundles. Further engagement needs to occur on this issue, but what is apparent is that some conditions should be placed on ensuring that any gains from price reductions are evenly distributed to include poorer consumers and do not only benefit the wealthy.
838. *Consideration should be given to facilitating sub-national operators particularly through dynamic spectrum sharing.* The localised provision of data services is more feasible than voice services given that only an ISP link is required, rather than a complex set of interconnection and roaming services. This opens the space for commercially viable sub-national and local community operators to offer competitive services.
- 838.1 The Commission has received submissions around the potential to facilitate these operators through dynamic spectrum sharing, especially in rural areas where spectrum is underutilised due to roaming arrangements and coverage

requirements only. Dynamic spectrum sharing by community networks and other small players may be achieved in a similar manner to the television white space regulations.

- 838.2 Such arrangements represent opportunities for more efficient use of spectrum to the benefit of people in rural areas as well as opportunities for small businesses and new entrants. The Commission suggests considering placing conditions on the spectrum licences and processes that will allow for dynamic spectrum sharing for unused spectrum as well as any spectrum that is not ultimately assigned. A specific opportunity may be where a firm that is roaming and is therefore not using its spectrum, and a community network may make use of this currently unused spectrum until the network owning the spectrum builds its own infrastructure in the same area.





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