competition commission
south africa

DATA SERVICES MARKET INQUIRY
FINAL REPORT

SUMMARY OF FINDINGS AND RECOMMENDATIONS

NON-CONFIDENTIAL

2 DECEMBER 2019

competition regulation for a growing and inclusive economy

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.

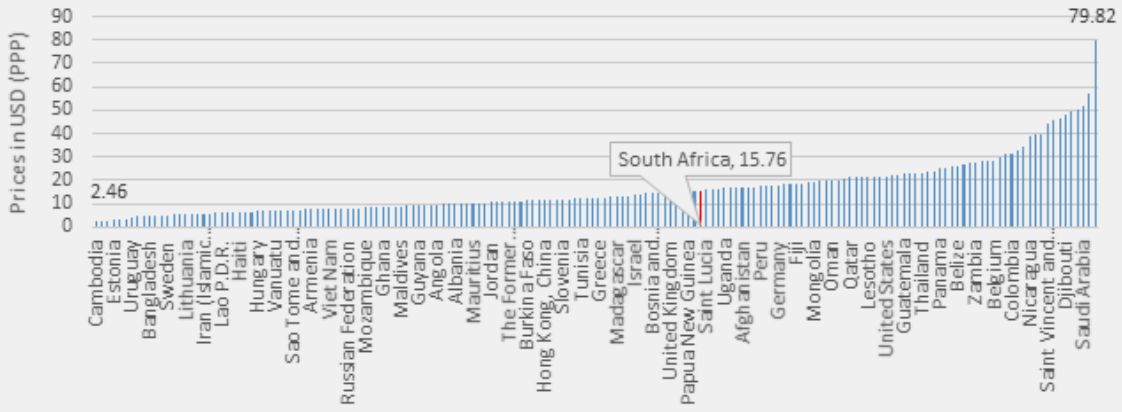
BENCHMARKING AND PROFITABILITY ANALYSIS CONFIRM SOUTH AFRICAN PRICES ARE HIGH

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.

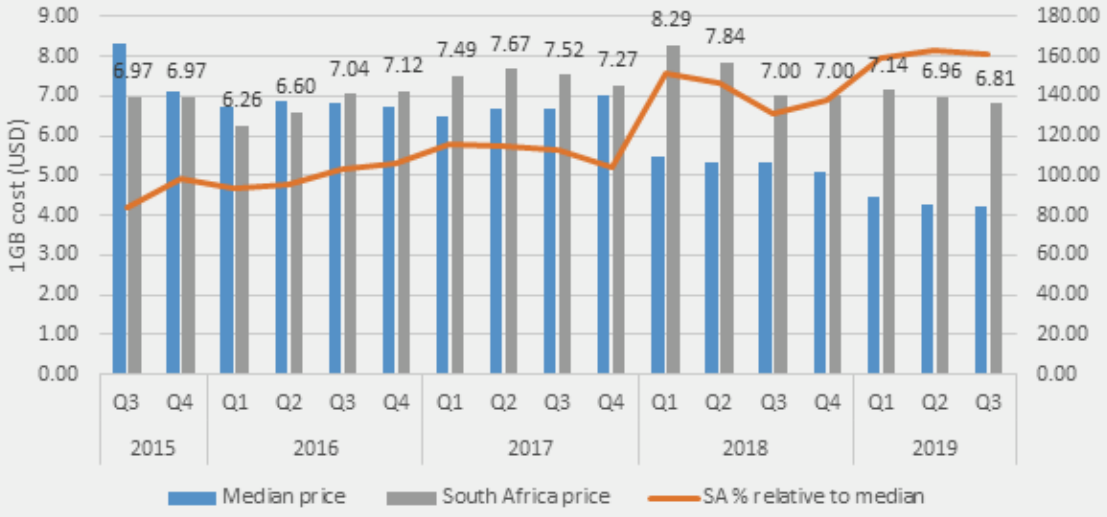
   5.1 The ITU data shows that South Africa ranks poorly when compared across a worldwide selection of countries and is considerably more expensive than the

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)

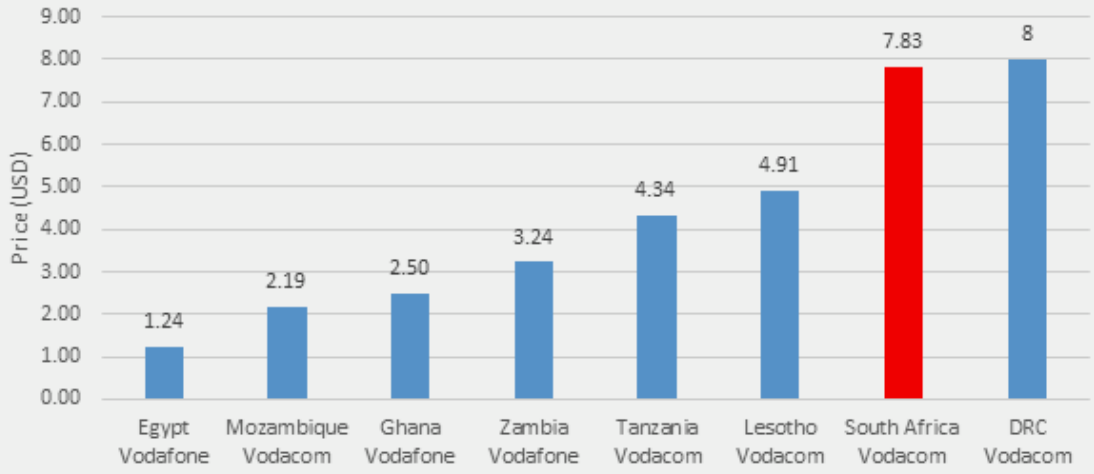


Source: RIA RAMP Index and data submissions to the Commission

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.

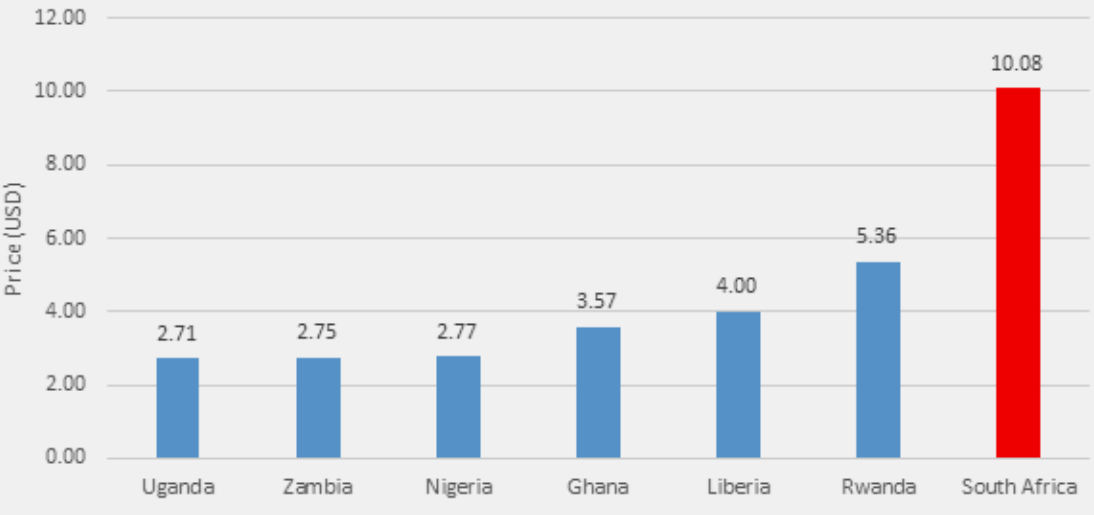
5.2 The more recent Tarifica Global Benchmark Report for Q1 2019 confirms that not much has changed over time. Tarifica looks at usage profiles and examines the cheapest data bundles available for that usage group. For mobile prepaid data-only plans, Tarifica ranks South Africa 22nd out of 25 countries 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

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

annual 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.

7. 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

8. 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.

9. 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

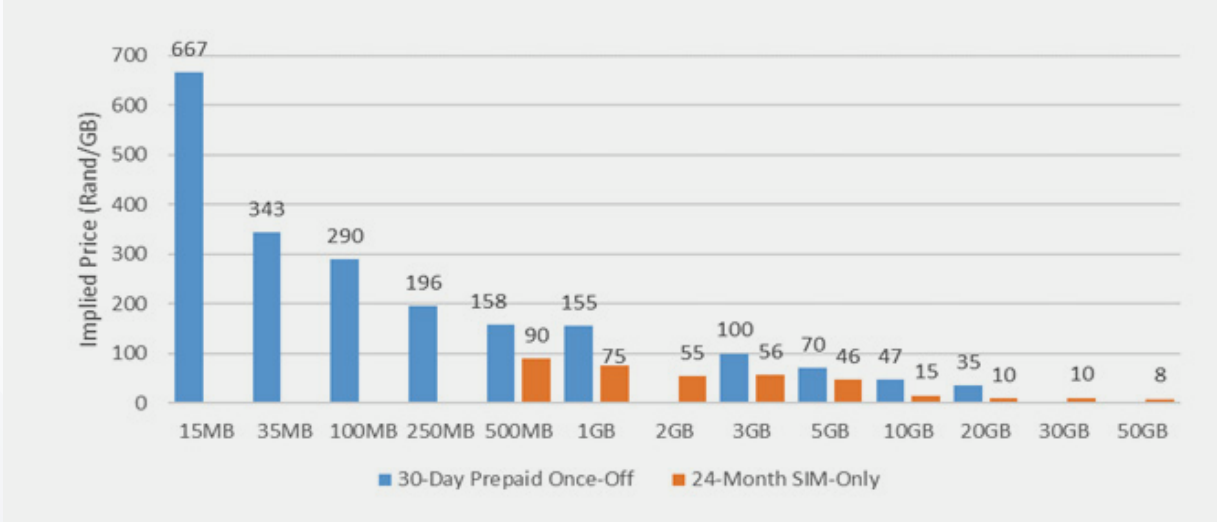
well as the weighting used. It also used a period where MTN promoted its service by offering 1GB free data with each SIM, strongly impacting on the results. Using reasonable assumptions that also preserve more of the sample, and simple averages which more accurately reflect the mean, results in the completely 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 Openserve in areas where infrastructure already existed, or future Telkom Openserve 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 Openserve 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 Openserve. 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 Openserve, 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 underserviced 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 underserviced 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 DTPS, 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 DTPS 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.

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