

widespread roaming and MVNO service. Smaller operators' ability to reach such agreements with Vodacom and MTN also demonstrates that there is effective competition at the wholesale-level.

2. Other shortcomings with ICASA's approach

In addition to ICASA not conducting a forward-looking assessment of the effectiveness of competition, there are also a number of other shortcomings with ICASA's approach:

- No market failures linked to competition issues have been identified;
- The market analysis should have been restricted to data services; and
- The appropriate boundaries for sub-national markets should have been assessed in more detail.

2.1 No market failures linked to competition issues have been identified

ICASA has to identify market failures to justify imposing remedies (see Section A). However, ICASA has provided only very limited analysis of market failures with adverse consumer outcomes in its Discussion Document. Indeed, the only time that it mentions possible market failure is when it draws a conclusion on its international benchmarking:

*"With regard to the ITU's "Advanced" countries, South Africa performs reasonably well and its performance (in terms of price and quality) is similar to a number of countries that would be considered its peers (Brazil, Peru, Mexico, Thailand, Malaysia). However, this analysis also indicates **some degree of possible market failure** given that some countries, notably China, out-perform South Africa on both price and quality."*[Emphasis added]

Indeed, from ICASA's section on spectrum, it seems more than likely that this "possible market failure" is driven by a failure to assign HDS rather than any competition issues. Indeed, ICASA itself acknowledges that the international benchmarking, where South Africa appears to perform less well than other countries, spectrum is likely to be an important factor: "China's much better performance in terms of speed and price is put in context when seen alongside the fact that it has assigned nearly twice the spectrum that South Africa has."⁶⁴

Without being clear on what market failures ICASA is trying to address, it is not possible for ICASA to impose any remedies and to determine which, if any, remedies are appropriate. Further, when it comes to reviewing any remedies in future market reviews, ICASA will not be able to assess whether any remedies need to be removed or adjusted if it has not clearly established and identified the market failures it was trying to address in the first place.

2.2 The market analysis should have been restricted to data services

Whilst ICASA has defined a broad product market for mobile services, we note that ICASA has stated several times that its review is focused on the data sub-segment:

- In its Discussion Document, ICASA states that "it may be that data services constrain voice and SMS services to some extent since consumers may use, for example, WhatsApp over a data service as a substitute for traditional voice and SMS but given that **the focus of this inquiry is on data services**, this question need not be assessed."*[Emphasis added]*

⁶⁴ Discussion Document, paragraph 64

- In its Questionnaire, ICASA stated that the purpose of the Inquiry is *"to assess the state of competition and determine whether or not there are markets or market segments within the mobile broadband services value chain"*.⁶⁹ In line with this, the focus of ICASA's questionnaire was on data services. If ICASA wanted to also investigate voice and messaging services, then it would need to issue a new questionnaire.

ICASA's focus on data services appears appropriate, particularly from a forward-looking perspective, given:

- Data accounts for the vast majority of mobile network traffic and is therefore the biggest driver of investment/costs and where spectrum most needed;
- Data usage is growing rapidly and can be expected to account for the majority of MNO revenues (and therefore also consumer expenditure) in the near future; and
- Data is capable of supporting both voice and SMS services via OTT – as such data-only services can also serve as a substitute for voice and SMS.

Given that the focus of the review is on data services, ICASA's analysis should focus on data, which it has not consistently done throughout its Discussion Document e.g. it has a section on the role of voice services. More fundamentally, it also means that any remedies should be restricted to data services – this is most relevant when considering any remedies for national roaming (here we stress that Vodacom does not consider that there is a need for any form of national roaming remedies).

2.3 The appropriate boundaries for sub-national markets should have been assessed in more detail

ICASA considers that, due to geographic variations in competitive dynamics, the retail market, the market for sites and the market for national roaming services should each have a sub-national market definition. In each of these three markets, ICASA also considers that that the market should be *"at least as narrow"* as the local and metropolitan municipality levels and bases its dominance assessment primarily on municipality-level market shares.

Whilst ICASA discusses certain characteristics that could justify sub-national market definitions, it has not justified the use of municipalities as the relevant geographic unit. It is important that ICASA considers this further as defining inappropriate geographic market boundaries could have a material impact on the assessment of the effectiveness of competition and SMP analysis:

- The purpose of geographic market definition is to identify the geographic scope of the relevant competitive constraints on a service. As such, if a market is defined too narrowly, there is a risk that relevant constraints would not properly be taken into account in the competitive assessment.
- Market definition should provide the framework for market analysis – ICASA should consider the effectiveness of competition at a level consistent with the geographical markets it has identified.
- Since ICASA relies heavily on market share thresholds for its SMP assessment, the precise definition of market boundaries can have a direct and significant impact on dominance findings (i.e. portion of a country in which a particular player is found to be dominant).

Whilst municipalities may serve as a reasonable starting point for geographic market analysis, ICASA should consider the extent to which competitive conditions differ appreciably between municipalities or whether there may be an argument for grouping certain municipalities with similar characteristics

⁶⁹ Mobile Broadband Inquiry Questionnaire

into larger sub-national markets (or sub-dividing where competitive conditions differ)– indeed, the European Commission's *"Notice on the definition of relevant market for the purposes of Community competition law"* sets out that:

*"The relevant geographic market comprises the area in which... the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because **the conditions of competition are appreciably different in those areas.**"*⁷⁰
[Emphasis added]

BEREC's 2014 position paper on geographical aspects of market analysis, identifies factors that should be taken into account when determining the homogeneity of competitive conditions across different areas. These are:⁷¹

- the coverage of alternative regional/local infrastructures and the competitive constraints posed at the retail level by active operators;
- the different product characteristics in each geographical area, as well as differences in commercial offers and – importantly – whether they are differentiated from offers in neighbouring areas;
- the number of operators offering their retail services in a particular geographical area and the (relative) size of these operators over time; and
- price differences.

In practice, the adopted geographic market definition will be more important for markets where regulation has been proposed – i.e. upstream markets – since it may impact on the nature of the proposed remedies (in particular, their geographic scope).

Although it is important to correctly define the appropriate geographic markets, it is also worth noting that remedies may be geographically differentiated, even where a market has been defined as national. BEREC has suggested that this may be appropriate where competitive conditions are not sufficiently stable to justify the definition of local markets:

*"... where the available evidence suggests that the scope of the relevant market is national (any differences in the conditions of competition between geographical areas are not yet sufficiently stable or sustainable to justify the definition of regional or local markets), market power will have to be assessed within this national market. In case of geographical variations in competitive conditions within this national market, it may be appropriate to vary remedies within that national market, despite the fact that an operator is found to have SMP throughout the entire territory."*⁷²

⁷⁰ EC (1997), Commission Notice on the definition of the relevant market for the purposes of Community competition law, paragraph 8.

⁷¹ BEREC (2014), Common Position on geographical aspects of market analysis (definition and remedies), pages 44 - 50

⁷² BEREC (2014), Common Position on geographical aspects of market analysis (definition and remedies), paragraph 165.

C. Retail market

In this section, we consider ICASA's retail market analysis. In summary:

- Vodacom agrees with ICASA's finding that there is a wide product market for mobile services, encompassing voice and SMS as well as data. Regarding geographic market definition, Vodacom considers that variations in certain market characteristics across South Africa may mean that some form of sub-national market definition is appropriate. However, whilst municipalities may be a reasonable starting point, further work should be done to determine the most appropriate market boundaries by considering the extent to which competitive conditions differ among different regions of the country.
- Whilst ICASA acknowledges the importance of spectrum and its scarcity in South Africa, it understates the effects of this bottleneck when assessing competition/market outcomes and SMP in both retail and wholesale markets.
- ICASA's assessment of the effectiveness of competition appears overly reliant on a 'snap shot' view of market shares. It places too little weight on how competition is likely to evolve going forward.

Figure 7 below highlights key areas where Vodacom considers that ICASA has deviated from its requirements as set out in the ECA and/ or best practice. We expand on these points in the following sub-sections, where we present a detailed assessment of ICASA's analysis and findings.

Figure 7: Areas where ICASA has deviated from the ECA and best practice

Retail market	
Product market definition	<ul style="list-style-type: none"> • Whilst we agree with ICASA's product market definition, we note that it should have considered supply-side substitution • Whilst it does consider demand-side substitution, it only does so to a limited extent
Geographic market definition	<ul style="list-style-type: none"> • Does not consider the extent to which competitive conditions in defined sub-national markets (municipalities) are appreciably different
Assessment of effectiveness of competition and SMP	<ul style="list-style-type: none"> • Assessment is not forward-looking – it does not consider: <ul style="list-style-type: none"> - The impact of the imminent release of HDS and establishment of the WOAN - The rapid growth of Telkom which can be expected to continue - A number of significant wholesale agreements between smaller/ new entrant MNOs and the more established MNOs • Analysis focuses on narrow range of evidence/ factors - in particular, historical national subscriber shares and price benchmarking evidence that does not adjust for differences in cost-drivers • Assessment is primarily at national level and therefore not consistent with geographic market definition • Analysis fails to consider the impact of spectrum constraints on market outcomes and incorrectly attributes effects as "market failure"

Retail market

Remedies

- Whilst Vodacom agrees with principle that any competition issues in the Retail market should be addressed in the most upstream market, it does not consider such remedies to be justified, as detailed in this submission.
-

1. Market definition

In the Discussion Document, ICASA defines an aggregated retail market for mobile services, including voice, SMS and data services. In terms of geographic markets, ICASA finds that there are sub-national markets, at least as narrow as local and metropolitan municipalities. The sub-sections below set out Vodacom's assessment of ICASA's views on the appropriate retail market definition.

1.1 Product market definition

Product market definition is in line with evidence on demand-side and supply-side substitutability

Vodacom agrees with the definition of the product market:

- As the Discussion Document notes, users of mobile data services typically purchase a mixture of data, messaging and/or voice services (from same provider and on the same device). Whilst some customers require data only offers, for which Vodacom developed mobile broadband tariff plans, this need appears to be limited. As such, it is not currently plausible to define separate markets for voice, messaging and data. However, this may change going forward, as the relative importance of data services continues to increase and the need/ demand for dedicated voice/SMS services declines due to the availability of OTT services.
- The fact that the vast majority of the network elements required to offer these services are the same means there is a high degree of supply-side substitutability.
- In terms of the residential and business segments:
 - The vast majority of customers use their mobile services for business and residential purposes, seamlessly; and
 - The fact that mobile network service requirements for business and residential customer groups are similar mean that they can be provided over the same network elements – so supporting a high degree of supply-side substitutability.

We also note that the proposed product market definition is in line with international precedent – for example, in all recent mobile merger decisions, the EC has not split the overall retail mobile market based on the type of service offered i.e. voice calls, SMS, MMS, or mobile Internet data services; and instead defined a single overall retail mobile market.⁷³

Although ICASA defines a broad product market for mobile services, it has made clear that the focus of its inquiry is on data services (see Section B above).

Data services should not be segmented by bundle size

⁷³ EC (2018), CASE M.8792 - T-Mobile NL/Tele2 NL, page 53

The Discussion Document raises the possibility of potentially segmenting the market by bundle size (i.e., the amount of mobile data or other services that a consumer purchases). In this regard, Vodacom notes that ICASA rightly states that there is a *"likely a chain of substitution that joins the various bundle sizes together in one market."*⁷⁴ However, ICASA goes on to say it considers *"bundles of up to 5GB to be linked via a chain of substitution."*⁷⁵ This would seem to imply that bundles larger than 5GB could be considered to fall in a separate market (although it does not state this explicitly and does not seem to consider the potential implications of this anywhere else in its Discussion Document). For the avoidance of doubt, Vodacom does not consider that the market for mobile services should be segmented in this way. The chain of substitution means the prices of bundles above 5GB can be expected to constrain the prices of those bundles below 5GB and ICASA provided no evidence of a break in the chain at 5GB.

Whilst fixed services may not lie in the same market as mobile services they are nonetheless an important competitive constraint that needs to be considered

ICASA states that fixed line networks are *"relatively under-developed in South Africa"* and *"do not provide an alternative for most households in South Africa"*.⁷⁶ It therefore does not consider fixed services further in the inquiry. Whilst Vodacom agrees that fixed services may not currently lie within the same market as mobile services, there is still clearly a degree of substitutability between fixed and mobile services which, as explained in Section C.2.6 below, can be expected to increase over time. As such, even if fixed services are excluded from the product market definition, a forward-looking assessment of the effectiveness of competition should nonetheless fully consider the competitive constraint that fixed services impose on mobile services.

1.2 ICASA's geographic market definition analysis is incomplete

Vodacom notes ICASA's proposed geographic market definition. In this response, Vodacom is unable to comment fully since ICASA declined to provide its underlying analysis and because certain aspects of ICASA's analysis appears incomplete. Given this, Vodacom does not, in this response, take a definitive position on the appropriate boundaries of the geographic market and reserves its rights to comment further. However, we note that:

- Whilst ICASA points towards certain market characteristics that could mean that some form of sub-national market definition is justified, it has not presented any compelling evidence to support the choice of municipalities as the relevant geographic unit. Even ICASA itself appears to be fairly non-committal with regards to the precise definition of market boundaries noting only that it considers that these are *"at least as narrow as the local or municipality level."*⁷⁷
- Whilst municipalities may be a reasonable starting point for a geographic analysis, ICASA should have assessed the extent to which competition differs appreciably across different municipalities before defining market boundaries.
- Having defined sub-national markets based on the above approach, ICASA should consider the effectiveness of competition at a level consistent with the adopted market definition.
- Despite appearing relatively non-committal with respect to its choice of geographic market definition, ICASA relies on municipality-level data when it comes to its dominance assessment. As such, it places an inappropriate level of weight on market boundaries that are not grounded in evidence. This, together with the shortcomings associated with its assessment of the effectiveness

⁷⁴ Discussion Document, paragraph 28

⁷⁵ Ibid

⁷⁶ Discussion Document, paragraph 29

⁷⁷ Discussion Document, paragraph 35

of competition (set out in Section C.2 below) undermines the validity and credibility of ICASA's SMP findings.

Below Vodacom provides further views on the key gaps in ICASA's geographic analysis. It is important that ICASA consider these further when finalising its market definition.

The hypothetical monopolist test should not be applied too strictly

ICASA's finding that *"there is no substitute in general from within a location... means that there are narrow geographic for mobile services."*⁷⁸ appears to be based on a very strict application of the hypothetical monopolist test (HMT). However, international precedent indicates that the hypothetical monopolist test should only be used as a starting point for the analysis, since applying it strictly can lead to a proliferation of narrow markets which makes a proper competition assessment impracticable – in particular, BEREC notes that:

*"According to the SMP Guidelines, the starting point for the definition of the relevant geographical market is the hypothetical monopolist test. This might result in a large number of very narrow markets that are not conclusive for the purpose of market analysis (and imposition of remedies). For example, a price increase of 5-10% for broadband access services very probably will not make a customer move home to a different part of the country or induce an operator to rollout its own infrastructure in a new area."*⁷⁹

This shortcoming can be addressed by aggregating geographic units into broader markets, with each market comprising all areas that have sufficiently homogeneous competition conditions – again, BEREC notes:

*"To come to conclusive results, it might, therefore, be helpful to aggregate geographical areas into several geographical markets, with each market comprising all areas that have sufficiently homogeneous competition conditions, differing from those areas of the neighbouring market(s)."*⁸⁰

ICASA has not demonstrated that a market definition as narrow as the municipality level is justified

ICASA highlights certain market characteristics which could justify some form of sub-national market definition – in particular, variations in coverage across operators and some geographic variations in pricing. Vodacom also notes that its retail strategy has some geographic dimension:



However, whilst adopting some form of sub-national market definition may be justified from an economic perspective, it is not clear from the Discussion Document why ICASA has decided that municipalities would be the most appropriate unit. Vodacom therefore considers that further work is required in this area – in particular, ICASA should consider the extent to which competitive conditions differ appreciably across municipalities.

The 2014 BEREC position paper referred to in Section B.2 above provides a useful reference for the types of factors that should be considered when assessing geographic variations in competition.

⁷⁸ Discussion Document, paragraph 31

⁷⁹ BEREC (2014), Common Position on geographical aspects of market analysis (definition and remedies), paragraph 15

⁸⁰ Ibid, paragraph 16

2. Effectiveness of competition and identification of operators with SMP

ICASA's assessment of the effectiveness of competition in the South African mobile market focuses on three areas – barriers to entry, market shares and international comparisons of prices and non-price factors. It also briefly considers the role that voice services may play with respect to the competitive dynamics in South Africa's mobile market. Overall, ICASA ostensibly finds:

- There are *"very high barriers"*⁸¹ to entry in the South African mobile market
- High relative market shares of individual licensees in many municipalities in South Africa *"suggests that there are a number of geographic areas characterised by ineffective competition."*⁸²
- Benchmarking evidence indicates that South Africa's prices are *"neither extremely high nor very low"*⁸³ in relation to other countries.
- Comparisons of non-price factors indicate that customers in South Africa are *"benefiting from a much higher quality of access than those in other African countries."*⁸⁴
- There is evidence that lower levels of spectrum assignment are associated with higher prices. Recognising this, ICASA notes that *"[i]t is therefore imperative that spectrum be assigned to operators as soon as possible."*⁸⁵

In line with its sub-national market definition for retail services, ICASA's SMP assessment for the retail market is based primarily on an analysis of municipality-level market shares. Based on a simple application of the 45% market share threshold for deemed dominance within each municipality, together with high level observations on the link between upstream and downstream market shares, ICASA finds that a number of licensees have SMP.

In the sub-sections below, Vodacom explains why ICASA's analysis of the retail market does not demonstrate that competition is ineffective. In particular:

- ICASA's analysis appears overly reliant on a static view of national subscriber market shares and does not properly consider market dynamics – in particular, the disruptive impact of Telkom which can be expected to continue.
- ICASA's analysis also fails to take into account key developments that will significantly impact on market outcomes going forward. As set out in Section B, ICASA itself is planning to assign a significant amount of much-needed additional HDS to MNOs in the near future and also to the WOAN, which will have a fundamental impact on the market. As such, if ICASA is determined to conclude the market review before these important changes have been implemented (which Vodacom argues against), then it should have considered how these will affect outcomes in the retail market. Indeed, as explained further in Section B, failing to take into account its own proposed changes that, if implemented as intended, will radically alter market dynamics, and is not only contrary to the ECA requirement to assess competition on a forward-looking perspective and impose proportionate remedies, but is also unreasonable.
- ICASA overstates the extent of barriers to entry and ignores the impact of spectrum constraints on operators' ability to offer wholesale capacity to other operators e.g. MVNOs; and ICASA cites access to spectrum as a high barrier to entry without acknowledging that this is exacerbated by limited

⁸¹ Discussion Document, paragraph 37

⁸² Discussion Document, paragraph 45

⁸³ Discussion Document, paragraph 67

⁸⁴ Discussion Document, paragraph 67

⁸⁵ Discussion Document, paragraph 68

spectrum availability in South Africa. ICASA also does not acknowledge the extensive commercially negotiated site sharing agreements that already exist in South Africa and recent network sharing deals which are facilitating the expansion of smaller players.

- Appears oblivious to the undeniable conclusion to be drawn even from its own analysis, which is that international benchmarking evidence does not indicate that mobile data prices in South Africa are excessive, particularly when spectrum and other important non-prices factors are taken into account. This is despite the fact that ICASA has not taken into account the effects of spectrum constraints when performing some of its benchmark analysis. In particular the analysis compares price and non-price outcomes in South Africa directly with outcomes in other countries that do not face similar constraints, despite later acknowledging that availability of spectrum is a key driver of price and non-price outcomes.
- Finally, ICASA appears to presume that vertical integration is harmful to competition without setting out why, in its view, this may be the case.

Most fundamentally and when combining the above points, it is clear that ICASA has not identified any market failures linked to competition problems.

2.1 The assessment is overly reliant on a static view of national subscriber shares

The analysis should have considered data market shares

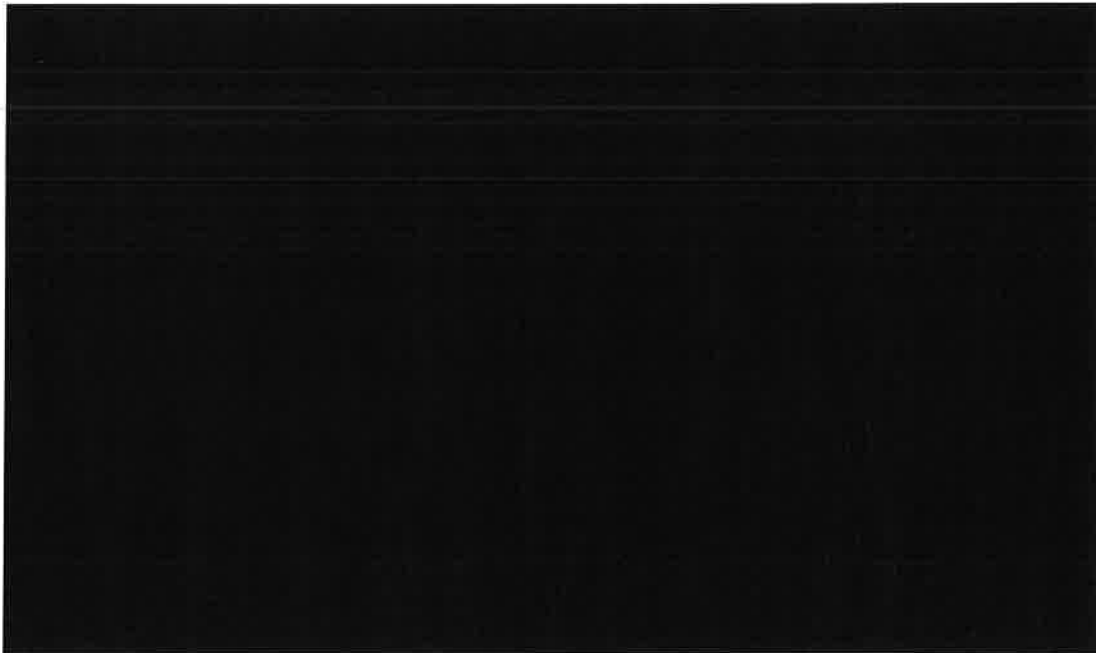
ICASA's analysis of market structure focusses exclusively on total subscriber shares (including all voice, SMS and data customers, on a three-month active basis). However, active data subscriber shares are arguably a more relevant measure of market structure, given ICASA's stated focus on data services (see Section B above) together with the rapid growth in the importance of data services, which are likely to account for the majority of MNOs' revenues in the near future.



This reflects the smaller operators' comparative strength in data services, with active data customers accounting for a higher share of their customer base than for the larger operators. This is also seen in data traffic market shares: in its report on its BU-LRIC model, ICASA found that, in 2017, the smaller operator (a proxy for Cell C and Telkom Mobile) carried double the amount of data traffic per subscriber when compared with the larger operator (a proxy for Vodacom and MTN). ICASA projected that this factor would increase to two and a half times by 2020.

Vodacom does not have the necessary data to estimate municipality-level market shares for data services. However, given the material difference in shares at the national level (and the fact that Vodacom's national share is comfortably below the 45% threshold for deemed dominance), it is reasonable to expect that using data subscriber shares would result in Vodacom and/or MTN being deemed to be dominant in far fewer areas.

Figure 8: Data customer market shares



The analysis should have considered market share dynamics within the narrow sub-national markets it has defined

ICASA's finding that *"any market power is unlikely to decline significantly over the medium term"*⁸⁶ appears to be based entirely on a highly aggregated analysis of subscriber market shares. This ignores variations in market dynamics across different municipalities - despite finding narrow sub-national markets. ICASA appears to have only considered changes in market structure over time at a national level. Vodacom would therefore encourage ICASA to consider the extent to which its analysis of the effectiveness of competition at a national-level is still applicable when considering different types of sub-national markets.

Vodacom continues to face strong competition from MTN

Vodacom also continues to face strong competition from MTN, particularly in relation to network quality and coverage:

- MTN has been investing heavily in its 4G network - in the past four years, it has spent around R40 billion to improve its network coverage and quality and its 4G network now covers around 95% of the population⁸⁷;
- MTN has also started investing in 5G and launched a 5G trial with Huawei in November 2019⁸⁸; and
- MTN is likely to be less capacity constrained than Vodacom, as it has fewer subscribers, but a similar amount of spectrum.

⁸⁶ Discussion Document, paragraph 41

⁸⁷ <https://internationalfinance.com/mtn-reaches-95-4g-coverage-across-south-africa/>

⁸⁸ <https://www.itnewsafrika.com/2019/11/mtn-south-africa-launches-5g-trial-with-huawei/>

The analysis has not considered how MNOs' offers have evolved over time in response to competitive pressure

Another important aspect of market dynamics that ICASA has not considered is how operators' retail offers have evolved in response to competitive pressure. Looking at the evolution of Vodacom's product portfolio over time reveals a significant degree of dynamism, amongst others:

- In 2013, Vodacom launched its Smart and Red products, which provide integrated voice/data/messaging packages at fixed price points.
- In 2014, Vodacom introduced hourly and daily bundles to address affordability constraints. These were priced on a "replicating portfolio basis" such that the effective rate for multiple, smaller bundlers of shorter validity was equivalent to the rate of larger, longer validity bundles. This helped to bring the benefit of larger monthly bundle pricing to marginal and poor customers who otherwise would not have been able to afford the outlay of a monthly bundle.
- In 2017, Vodacom introduced weekly bundles, again in response to the launch of similar offers by rivals. These were priced at an effective rate considerably below the effective rates of equivalent monthly bundles, in order to match the aggressive offers of rivals.
- Also, in 2017, Vodacom responded to competition from rivals on contract offers by significantly increasing data allowances (208% on average).
- In 2018, Vodacom further transformed its pricing by introducing URL bundles (see above) for popular services such as WhatsApp and Facebook. This has led to substantial reductions in the effective rates for these bundles, e.g. a 1GB WhatsApp bundle can be purchased for R29 at an effective rate of 3 cents per MB.
- More recently, in March 2019, Vodacom halved the price of out of bundle data and started implementing price reductions on 30-day data bundles.

The analysis is not forward-looking

ICASA has not taken into account how important recent and future developments will impact on market dynamics going forward (see Section B for a more detailed discussion):

- **The release of HDS and establishment of the WOAN.** The awarding of additional HDS should significantly alleviate capacity constraints faced by existing operators and will also reduce the cost of accommodating more data traffic on their networks. This will in turn increase the scope for price reductions at the retail (and wholesale) level, improved quality, coverage and service innovation. Having more spectrum will also mean that MNOs are better able to accommodate on their network MVNOs or other MNOs seeking to expand their coverage, thereby reducing the extent of any associated barriers to expansion or entry into the retail market. In addition, the WOAN is being created with the express purpose of enhancing competition at the retail level.
- **Telkom's strong growth.** Telkom has grown rapidly in recent years and has been investing heavily in its network. Further, Telkom benefits from a number of advantages – in particular, in relation to spectrum and access to backhaul – which mean it should be well positioned to continue to grow its market share.
- **Wholesale agreements:** a number of significant infrastructure agreements have been struck in recent years – in particular, agreements which are facilitating the rollout of new entrant MNOs' networks (see below); an expanded network sharing arrangement between Cell C and MTN and Vodacom's DPS agreement with Telkom.

The analysis fails to take into account the role of new entrant MNOs

Two new entrant MNOs, RAIN and Liquid, recently began to roll out their own networks, using their own spectrum, through network sharing agreements with Vodacom and MTN respectively:

- **RAIN:** RAIN's DPS and network sharing agreements with Vodacom have allowed it to rollout a 4G [REDACTED] retail as well as wholesale level. In addition, RAIN is rolling out "5G-like" fixed wireless services using 3.6 GHz spectrum, independently of its DPS agreement with Vodacom.
- **Liquid:** Similar to RAIN, Liquid has deployed its own 4G network based on a network arrangement with MTN, over which it is offering wholesale roaming services. In addition, Liquid has 3.5 GHz spectrum which, as explained below, means that it is well positioned to launch 5G services. Liquid has also recently concluded a network sharing agreement with Vodacom.

The recent developments related to these two network providers will have a disruptive impact on the market, both directly and indirectly, which is not captured by ICASA's static and backward-looking analysis of market shares:

- As noted above, RAIN has already started offering retail services to customers and has already positioned itself as a disruptive player, offering a 1GB pre-paid bundle at the very aggressive price of R50.⁸⁹
- Whilst Liquid is currently a mobile wholesale-only operator, it should also be well positioned to offer mobile retail services.
- Both Liquid and RAIN are offering roaming services at the wholesale-level, which will facilitate competition at the retail level.

ICASA itself acknowledges that RAIN's infrastructure sharing arrangement with Vodacom has "*facilitated the expansion of Rain as a wholesale and retail competitor in mobile broadband, which is deemed to be pro-competitive.*"⁹⁰ [emphasis added]

2.2 The assessment overstates any barriers to entry

Barriers associated with spectrum can be addressed by ensuring that spectrum is released in a fair and timely fashion

Vodacom agrees that access to spectrum is a crucial input to infrastructure-based competition, and that limited availability of spectrum in South Africa has inhibited efficient network rollout by both new and existing operators. However, this potential barrier can be alleviated/ addressed by ensuring that spectrum is made available to operators in a fair and timely manner. Further, the licensing of new spectrum bands which can be used to deploy new technologies – in particular, 5G – should help to stimulate competition in the market.

Indeed, we note that RAIN, which has access to 3.6 GHz spectrum, appears to be the first operator to have started rolling out a 5G network in South Africa. We also note Telkom and Liquid both have 5G spectrum, which means that they should be well positioned to launch 5G services in the near future. In addition, as explained below, ICASA is currently consulting on the release of further 4G and 5G spectrum, which should give smaller players and the WOAN the opportunity to deploy/ expand their own networks.

⁸⁹ <https://www.iol.co.za/business-report/economy/you-can-pay-as-little-as-r50-for-1-gig-of-data-with-rain-15436045>

⁹⁰ Discussion Document, paragraph 93

Finally, ICASA's analysis of the market for spectrum (discussed in Section D) found that no operator is deemed to enjoy SMP. This would imply that the larger operators do not currently have any advantage in this regard. In fact, the smaller operators, particularly Telkom, actually have an advantage in this respect as they have much more spectrum per subscriber.

The assessment failed to consider the interaction between limited access to spectrum and other perceived barriers to entry

ICASA has also not considered the knock-on implications that spectrum constraints will have for other perceived barriers. In particular:

- The less spectrum that is available, the more sites will be required to compete with rivals which are less spectrum constrained, and hence the greater the level of investment (of which some would be inefficient) that will be required to expand capacity and coverage.
- With more limited access to spectrum (particularly low frequency spectrum), smaller operators are also likely to be reliant on wholesale access to cover rural and remote areas. At the same time, as discussed in more detail in Section F below, spectrum constraints limit the extent to which MNOs are able to accommodate additional traffic, especially in urban areas, from access seekers' (in particular MVNOs) on their networks.

As explained in Section B, whilst ICASA recognises the strong link between spectrum availability, prices and quality, it should also have considered how the above issues will be alleviated by the upcoming spectrum award – in particular, having more spectrum will:

- Reduce the requirement/demand for suitable site locations and thereby make it easier/ less expensive for operators to roll out, reducing the perceived barriers associated with sites; and
- Reduce the incremental cost to MNOs of providing wholesale capacity to new entrants, allowing them to compete more aggressively for wholesale customers. This would in turn facilitate the growth/ expansion of new entrants, e.g. MVNOs and should translate to lower prices at the retail level.

The assessment does not recognise the role of commercially negotiated access arrangements in facilitating competitive network offers and roll out

ICASA's assessment fails to recognise the important role that commercially-negotiated wholesale access arrangements have played in addressing any barriers associated with obtaining access to network services and network rollout in South Africa, thereby facilitating competition at the retail level:

- As explained in more detail in Section E there is already a dynamic site sharing market in South Africa, underpinned by existing facilities leasing provisions under Chapter 8 of the ECA. This has enabled new entrants and smaller operators to roll out their own networks using larger MNOs' passive infrastructure.
- As set out in Section F, there are several examples of smaller operators benefitting from national roaming and network sharing agreements which have allowed them to expand network coverage whilst minimising up-front capital costs. ICASA appears to dismiss the role of national roaming in facilitating entry/ expansion on the basis that it considers costs to be high. However, this overlooks the fact that, as discussed in more detail in Section F, roaming prices have reduced significantly over the last 15 years. Further, ICASA's own assessment of roaming pricing found that it is *"difficult to accurately assess roaming charges due to the structure of the contracts"*⁹¹ but that *"[i]t is clear*

⁹¹ Discussion Document, paragraph 167

*that year-on-year roaming prices have declined over the last three years.*⁹² ICASA also notes that *"[w]ith new agreements signed recently, prices are likely to fall even further."*⁹³

In addition, ICASA has not recognised the fact that entrants rolling out their own networks have a range of alternative options available to them, aside from conventional site access governed by Facility Leasing Regulations – in particular, as noted in Section E operators have the option of deploying radio equipment, at a lower cost, on lampposts, billboards and rooftops and in shopping malls.

ICASA also suggests that *"some licensees that use roaming services may experience problems with handovers."*⁹⁴ Whilst this may have been an issue in the past, current technology allows for seamless handover between the access seeker's own network and the host network. As such, handover should not impact on an access seeker's ability to compete.

There is no evidence of high barriers to switching

ICASA states that *"[a]dditional barriers to entry include significant customer switching costs, which are exacerbated if number portability doesn't work well..."*⁹⁵ However, it does not present any evidence indicating that switching costs are acting as barriers to entry in the South Africa mobile market. In reality, barriers to customer switching in South Africa are low. In particular, as Vodacom set out in its response to ICASA's Mobile Broadband Inquiry questionnaire in March 2019:

- An important feature of South African mobile markets is that the majority of customers are pre-paid customers. This means that barriers to switching are low because it is easy for customers to switch to another operator, as they are not tied into contracts.
- Except for issues with unauthorised switching, Mobile Number Portability in South Africa is working well. Indeed, in its findings from the market inquiry on mobile number portability, ICASA concluded:

*"The South African market has changed in many respects since the launch of portability, and portability faces new challenges that need to be addressed. However, those challenges need not to fundamentally change the process that has a broad support in the industry, is functioning well overall and require a closer monitoring."*⁹⁶

Other barriers to entry are likely to be low

ICASA notes that *"[s]ubstantial investments are also required in marketing and distribution networks, which are additional barriers to entry and expansion by rival networks."*⁹⁷ However, in contrast to network investments, retail-level investments such as these are unlikely to represent a significant barrier to entry – this is indicated by the fact that mobile markets in many countries have seen entry by several operators at the retail level.

ICASA also argues that there are *"legal barriers to entry in that an I-ECNS licence is required in order to enter markets."*⁹⁸ However, there is no evidence that this represents a material barrier to entry – indeed, we note that there are currently over 400⁹⁹ operators holding I-ECNS licenses in South Africa. In any

⁹² Ibid

⁹³ Discussion Document, paragraph 168

⁹⁴ Discussion Document, paragraph 32

⁹⁵ Discussion Document, paragraph 38

⁹⁶ ICASA (2017), Number Portability Public Inquiry Findings Report, page 5

⁹⁷ Ibid

⁹⁸ Discussion Document, paragraph 39

⁹⁹ <https://www.ellipsis.co.za/wp-content/uploads/2019/07/Policy-Direction-on-High-Demand-Spectrum-and-Policy-Direction-on-the-Licensing-of-the-WOAN-26-July-2019.pdf>

case, to the extent that legal barriers exist, these should be addressed directly – e.g. through improvements to the licencing process – rather than through regulation of mobile operators, which would have a distortive impact on the market.

2.3 International benchmarking does not indicate that competition is ineffective

Price benchmarking

As set out below, we consider that ICASA's benchmarking analysis suffers from a number of shortcomings, most notably around not recognising the important impact that the spectrum constraint facing operators in South Africa has. However, even with this shortcoming, it is also clear that ICASA's analysis does not indicate that mobile data prices in South Africa are excessive. As such, this analysis fails to provide any platform for ICASA's subsequent proposals to intervene upstream.

It is vital to consider differences in non-price price factors when interpreting price benchmarking evidence

There are a number of important differences between SA and other countries that affect the quality, availability and costs, and therefore prices. Ignoring these differences makes benchmarks misleading. As such, it is vital to take into account a range of cost drivers, in order to reconcile differences between price levels, **before** attempting to draw any conclusions from the price benchmarks presented by ICASA.

For instance, there are many reasons why costs are likely to be higher in South Africa relative to many other countries, and hence which could affect the ability of mobile operators in South Africa to further reduce prices. Important factors that are likely to increase costs are¹⁰⁰:

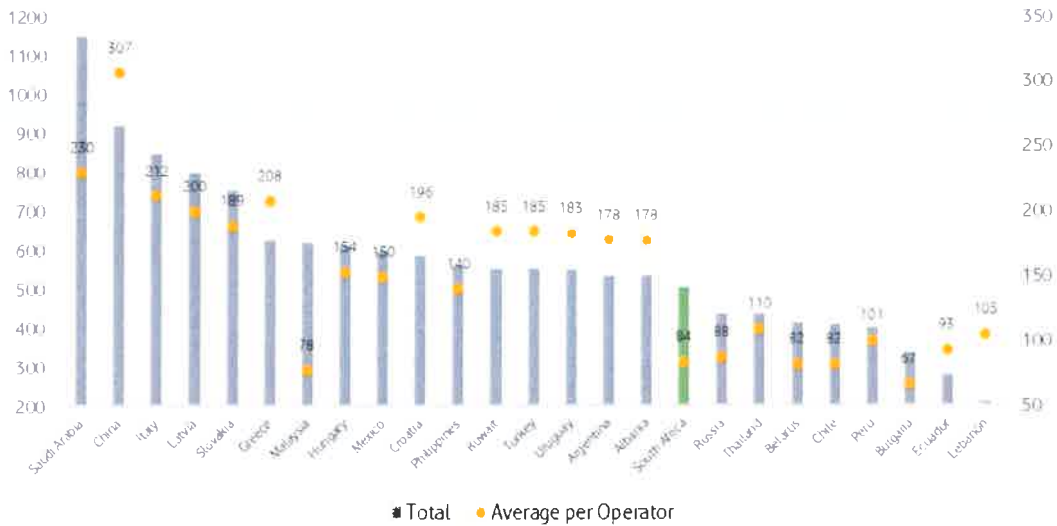
- The severe lack of spectrum combined with the low population density in South Africa; and
- South Africa's strong performance on non-price outcomes.

The severe lack of spectrum combined with the low population density in South Africa drives up network costs

It is widely recognised that South Africa has a severe lack of spectrum. Figure 10 below shows that, compared to other BRICS and 'Advanced' countries (as identified by ITU), South Africa clearly ranks towards the bottom both in terms of the total spectrum assigned and spectrum assigned per operator.

¹⁰⁰ In addition, Vodacom has been forced to incur extensive additional expense in respect of site batteries, due to a combination of extended load shedding dramatically reducing the useful life of the batteries, as well as rampant theft of batteries. In the last financial year, Vodacom spent in excess of R200 Million on battery replacements and is likely to far exceed this cost in the current financial year.

Figure 10: Assignment of mobile spectrum in BRICS and ITU "Advanced" countries



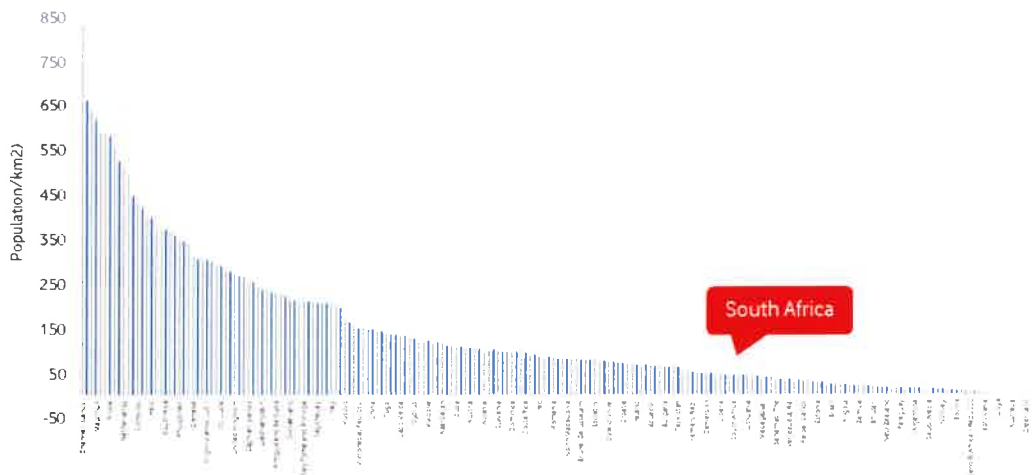
Source: Spectrum Monitoring

Further, the limited spectrum that is available has been disproportionately assigned to the smaller operators (i.e. Telkom has a high share of spectrum). This likely means that the spectrum that is available is not being used as efficiently as possible, which will exacerbate the overall shortage of spectrum.

Section D below further details why spectrum is so important for prices. In summary, the total amount of spectrum available as well as the type of spectrum in use plays a pivotal role in determining the cost and quality of mobile data services that MNOs are able to offer within their Radio Access Network (RAN). As such, inadequate access to spectrum will, all else being equal, raise the costs of providing mobile data services. This is supported by ICASA's own regression analysis (considered in more detail below) which identifies spectrum as a key driver of prices.

The adverse impact of the lack of spectrum in South Africa is exacerbated by its low population density, as shown by the Figure 11 below.

Figure 11: Population density



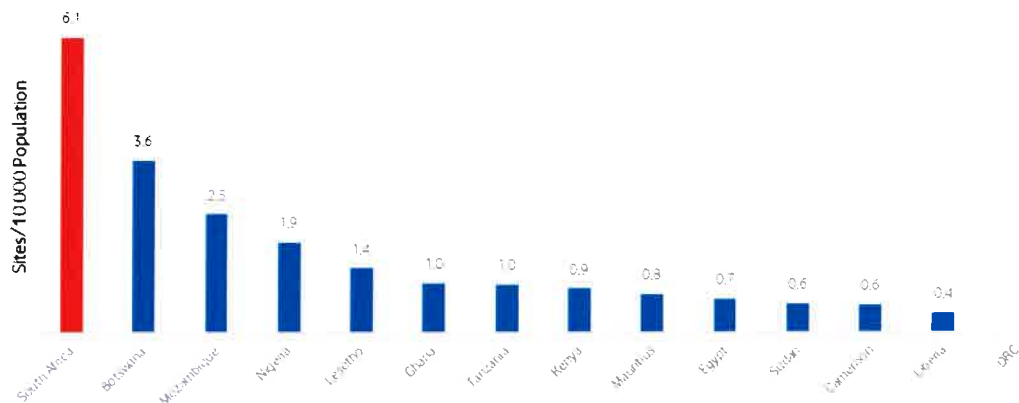
Source: World Bank

Note: Countries with a very high population density (above 1000/km²) have been excluded to avoid distorting the scale.

This is important because population density is an important driver of unit network costs – the denser the population in a particular area, the greater the number of people that the fixed costs associated with providing network coverage can be spread across and hence the lower the unit costs of data services. Further, in countries where the population is primarily concentrated within smaller areas, one would expect the number of sites (and hence network investment costs) required to deliver coverage to that population to be smaller.

As a result of the lack of spectrum and the low population density, Vodacom has had to deploy significantly more sites in South Africa than it otherwise would have (this has less of an impact on Cell C and Telkom as they utilise national roaming as an effective alternative) to deliver high coverage and download/upload speeds. This is consistent with Figure 12 below which shows that in South Africa there are more sites per 10,000 people than in many of the African countries that often perform better than South Africa in the international price benchmarking studies. All else being equal, this means that operators in South Africa will have higher costs (for both passive and active equipment costs) to recover per user.

Figure 12: Sites/10,000 population for different countries¹⁰¹



Note: Covers African countries that often perform better than South Africa in international benchmarks.

ICASA's own regression analysis indicates a clear link between access to spectrum and pricing

ICASA's regression analysis indicates that there are factors other than market structure and competition that are more important drivers of variations in pricing outcomes across countries. In particular, it finds:

- There is a significant negative relationship between spectrum assignments and pricing;
- Higher levels of fixed line penetration are significantly correlated with lower mobile data prices; and
- There is no statistically significant relationship between market concentration (as measured by HHI) and prices.

Further, where South Africa appears to perform less well than other countries in terms of pricing, ICASA acknowledges that the lack of spectrum assigned to mobile operators is likely to be a key driver. In particular, it notes that MTN, Vodacom and Cell C have much lower assignments than mobile operators in most developed countries and also than those in countries classified as "Leading" or "Advanced" by the ITU.

¹⁰¹ The number of sites in the DRC is 0.085 per 10,000 people, which is why it is not visible on the figure

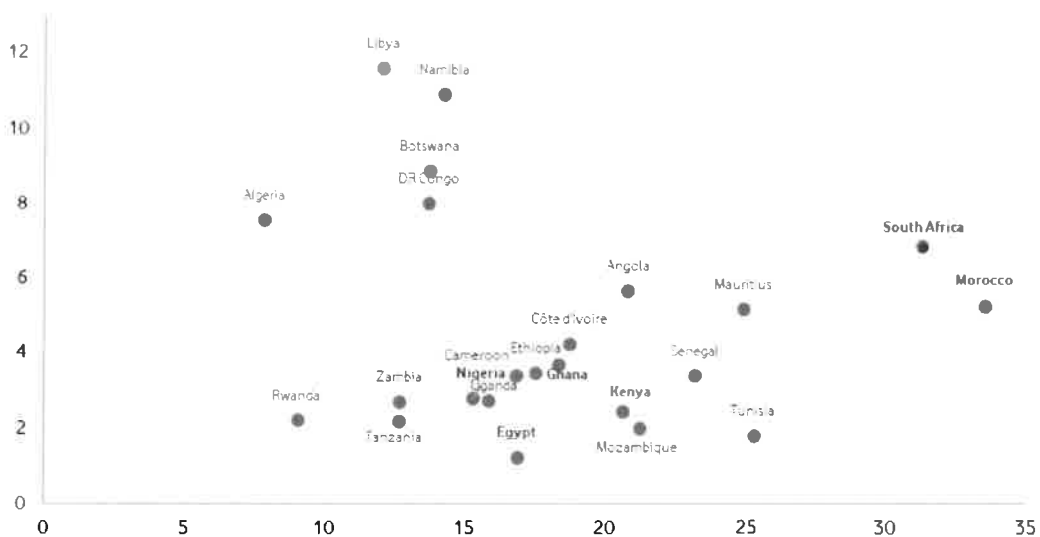
It is not possible to draw any firm conclusions from the comparison of price trends across six African countries without considering non-price factors and cost drivers

ICASA compares price trends in six of Africa's biggest economies - Egypt, Ghana, Kenya, Morocco, Nigeria and South Africa. From this, it notes that South Africa's mobile data prices have plateaued and even started to rise slightly on a PPP\$ basis, whereas prices in other countries have been declining.

However, given that prices are influenced by a range of non-price factors, which will vary significantly across the countries considered, it is not possible to draw any firm conclusions from this analysis. For example, whilst ICASA has chosen six of the biggest economies in Africa, we note that GDP per capita (which ICASA found to be a driver of pricing outcomes) in South Africa is almost three times higher than it is in Ghana.¹⁰² Further, as Figure 13 below shows, South Africa has far higher coverage than all countries considered aside from Morocco. This reflects the significantly higher site to population ratio seen in South Africa, as shown in Figure 12.

Furthermore, in the case of Morocco, market outcomes will have benefitted significantly from the release in 2016 of 800 MHz and 2600 MHz 4G spectrum, which is not currently available in South Africa.

Figure 13: Comparison of price (US\$ per 1GB) 2019 vs LTE coverage (%) 2018¹⁰³



Source: Ookla (2019) & Research ICT Africa (2019)

South Africa's post-paid prices compare well with other countries

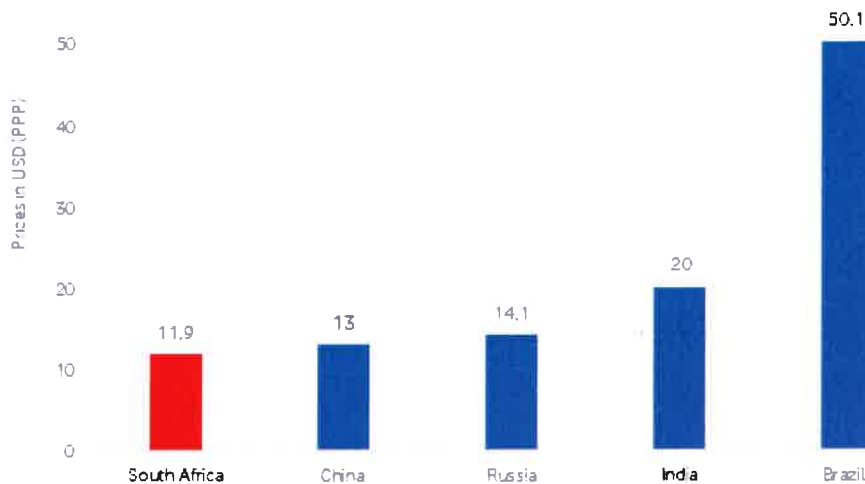
Evidence from post-paid benchmarking, which is not considered by ICASA (despite post-paid and prepaid bundles falling within the same market), indicates that prices in South Africa compare favourably with those in other countries:

¹⁰² World Bank data, 2018, at PPP

¹⁰³ The number of sites in the DRC is 0.085 per 10,000 people, which is why it is not visible on the figure

- **ITU:** The ITU collects prices for post-paid computer-based mobile broadband plans with a data allowance of 1GB per month across 186 countries. The 2018 ITU price report found that:
 - South Africa's cheapest 1GB contract was 37th cheapest out of 168 in PPP terms.¹⁰⁴
 - Prices in South Africa ranked the 12th cheapest out of the 44 African countries covered (in PPP terms),
 - Figure 14 below shows, out of the five BRICS countries South Africa had the cheapest price in 2017 for 1GB post-paid data

Figure 14: Mobile post-paid data prices for BRICS in USD (PPP), 1GB 2017



Source: ITU 2018

- **Tarifica:** Tarifica releases a quarterly Global Benchmark Report illustrating the relative pricing of both mobile post-paid and mobile pre-paid data services around the world, for 'light', 'moderate' and 'heavy' users. Evidence from the Q1 2019 study indicated that South Africa ranked (out of the 25 countries considered) **2nd best for post-paid light data users** and **6th best for moderate data users**, though its ranking for heavy data users was lower – 19th out of 25.

The benchmarking evidence understates the impact of RAIN

RAIN recently launched an aggressively priced R50/GB package, which has been excluded from benchmarking results on the basis that *"it is a data-only offering focused only on the main metro areas."*¹⁰⁵ However, the growing relevance of data (becoming the primary means to convey voice calls and messaging via OTT services) means that data-only providers are likely to play an increasingly important competitive role in the future. Given RAIN's new network sharing agreement with Vodacom, RAIN's position in the retail market is likely to become stronger in future.

Taking into account RAIN's data-only offering dramatically improves South Africa's relative ranking – as Figure 19 in the Discussion Document shows, when RAIN is included in RIA's 2019 benchmarking for 1GB pre-paid bundles, South Africa's ranking improves from 33rd to 15th cheapest.

¹⁰⁴ PPP prices are only available for a sub-set of the 186 countries covered

¹⁰⁵ Discussion Document, paragraph 50

Non-price benchmarking

The Discussion Document shows that South Africa is performing well in relation to non-price outcomes, particularly relative to other African countries. Indeed, ICASA notes in its conclusion that *"it is clear that customers in South Africa are benefiting from a much higher quality of access than those in other African countries."*¹⁰⁶ Further, the benchmarking analysis presented indicates that:

- In terms of 3G coverage, South Africa is one of the top performers amongst BRICS and "advanced" ITU countries
- A scatterplot of prices and LTE coverage as a percentage of the population for African countries indicates that *"while South Africa's prices are not the lowest, the proportion of the population with access to LTE (approaching 80%) is much higher than most other countries."*¹⁰⁷ We also note that LTE coverage in South Africa is now well in excess of this – MTN recently achieved 95% population coverage across its 4G network.

This reflects the fact that operators in South Africa compete strongly on non-price factors:

- Vodacom has invested more than R27bn over the past three years to improve its network and services. As noted above, Telkom and MTN have also been investing heavily in their networks;
- Vodacom initially led the race to roll-out 4G - though it has recently been over-taken by MTN; and
- Consumers in South Africa benefit from near-universal 2G and 3G coverage from all four operators (with Telkom and Cell C utilising national roaming from Vodacom and MTN).

The fact that South Africa performs strongly on non-price factors, despite its limited spectrum assignments is likely to have at least partly come as a result of the high number of sites in South Africa. As Figure 12 above shows, in South Africa there are more sites per 10,000 people than in many of the African countries that often perform better than South Africa in the international price benchmarking studies.

However, whilst ICASA acknowledges South Africa's strong performance on non-price factors and also recognises that this could be improved further by assigning more spectrum, it appears effectively to ignore this in its overall assessment of the effectiveness of competition. Vodacom considers this to be a significant omission by ICASA.

Overall, the benchmarking evidence is not suggestive of market failure

The price benchmarking evidence presented by ICASA does not indicate that competition is ineffective:

- It is not possible to draw meaningful conclusions from direct comparisons of prices between different countries, without considering differences in underlying cost drivers. Although ICASA later acknowledges that limited availability of spectrum is likely putting upward pressure on prices in South Africa, the price benchmarking evidence presented in the report compares pricing in South Africa directly with countries that do not face similar constraints.
- Even setting aside differences in non-price factors, by their own lights the price comparisons presented by ICASA do not indicate that pricing in South Africa is (consistently) high relative to other countries – there is a considerable degree of variation in rankings across different studies/

¹⁰⁶ Discussion Document, paragraph 67

¹⁰⁷ Discussion Document, paragraph 60

products and South Africa ranks amongst the cheapest on certain benchmarks (in particular, post-paid data users).

- Evidence on non-price factors indicates that South Africa generally performs well relative to other countries when non-price outcomes are taken into account:

Given the above, it is misleading to conclude that the benchmarking analysis "*indicates some degree of possible market failure given that some countries, notably China, out-perform South Africa on both price and quality*". The use of the term "*market failure*" implies that the mere fact that certain specific countries (or one in particular) appears to perform better than South Africa on both price and quality can (on its own), be taken as evidence that competition in South Africa may be ineffective. This statement is, on the contrary, a telling indication of the extent to which the comparison exercise in fact does not present any evidence that can be invoked to suggest market failures or ineffective competition based on comparative price levels. Drawing the conclusion that an industry in which effective prices are higher than in China must be suspected of "market failure" would leave very few markets in the world in a state other than failure.

However, as explained above it is not possible to draw any meaningful conclusions from direct comparisons of market outcomes in different countries, without considering the full range of factors that might be driving any observed differences.

Indeed, as Figure 10 shows, the average spectrum assigned per operator (arguably a more important measure of spectrum availability) in China is almost four times higher than in South Africa.

2.4 The levels of concentration observed in South Africa are comparable with competitive markets in other countries

ICASA states:

*"Markets for mobile services in South Africa are highly concentrated. In 2018, for example, concentration measured by the Herfindahl Hirschman Index ("HHI") was approximately 3,173 and two firms accounted for almost 75% of subscribers... The US Department of Justice refers to markets with an HHI less than 1500 as unconcentrated and the UK's Competition and Markets Authority refers to markets that have an HHI of between 1000 and 2000 as concentrated and above 2000 as highly concentrated."*¹⁰⁸

Notwithstanding Vodacom's earlier comment that ICASA should have considered concentration over time at a sub-national level, this ignores the fact that levels of concentration vary significantly across different types of market, with industries that exhibit large economies of scale, such as telecommunications, typically having higher levels of concentration. As such, it is important to consider any measures of concentration within the context of the relevant sector before drawing conclusions with regards to the state of competition.

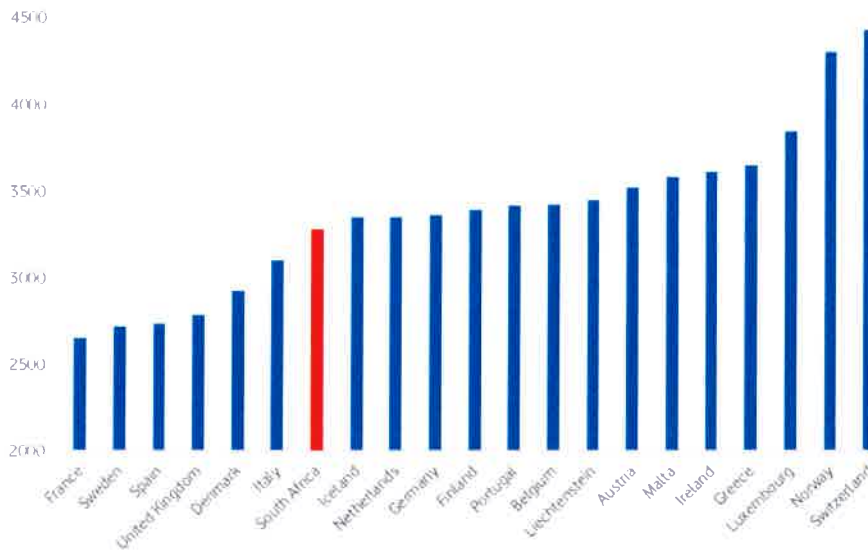
Figure 15 below compares South Africa's network-level¹⁰⁹ HHI with the HHI's of western European countries. As the chart shows, the HHI of South Africa's mobile market is comparable with that of competitive markets in Western Europe and, if anything, appears to be towards the lower end of the range. Furthermore, in all countries shown, except Norway and Switzerland – which exhibits an HHI significantly above that of South Africa – mobile markets have been found by national regulators not

¹⁰⁸ Discussion Document, paragraph 37

¹⁰⁹ HHIs are calculated using network-level market share estimates – i.e. subscribers of third-party operators that rent access to an MNO's network (i.e. MVNOs) will be treated as a customer of that MNO. In practice, MVNOs typically represent a small portion of the total market (<10%) and as such, including them would not be expected to have a significant impact on the relativities between countries.

to be susceptible to ex ante regulation with the exception of mobile termination rates (which are already regulated in South Africa in any case).

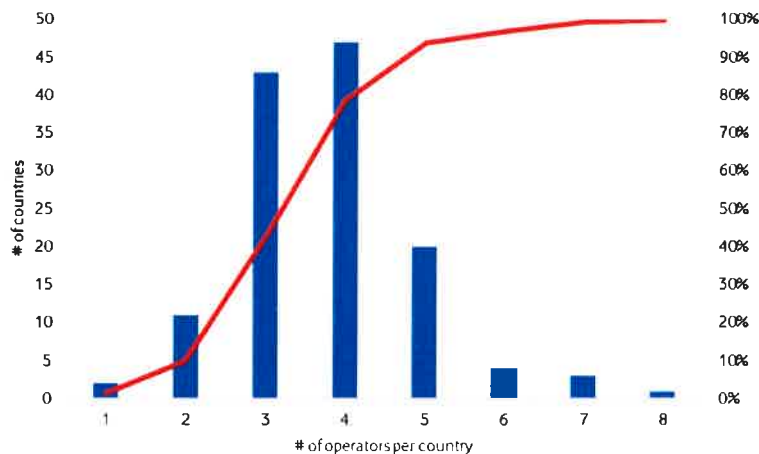
Figure 15: Comparison of network-level HHI: South Africa vs Western European countries



Source: Vodacom analysis of Telegeography data

Further, as Figure 16 below shows, analysis of 131 countries across Africa, Europe, Americas and APAC indicates that around 79% have four or fewer players (which would equate to an HHI of at least 2500)¹¹⁰ with three-player markets (i.e. with an HHI of at least 3333) being the most common, accounting for around a third of the total¹¹¹. This would in turn imply that more than two thirds of these markets are 'highly concentrated' based on the above thresholds cited by ICASA.

Figure 16: Distribution of number of operators present in 131 countries across Africa, Europe, Americas and APAC



Source: www.spectrummonitoring.com/frequencies

¹¹⁰ HHI is minimised when market shares are evenly spread between players – i.e. for a four-player market the minimum HHI is $4 \times (25\%)^2 = 2500$, for a three-player market it is $3 \times (33.33\%)^2 = 3333$

¹¹¹ The bars show the number of countries with the corresponding number of players whilst the curve shows the proportion of countries with the corresponding number of players or fewer – i.e. 79% have four or fewer, 100% have 8 or fewer.

It is also important to emphasise that whilst market shares/concentration provide a helpful initial insight into whether a market could be susceptible to competition issues, a high level of concentration/ market share does not, on its own, imply competition is ineffective or that any parties have market power. Rather, market structure should be considered alongside a range of other factors affecting the effectiveness of competition. Indeed, the European Commission's SMP Guidelines set out that:

*"Market shares can provide a useful first indication for the NRAs of the market structure and of relative importance of the various operators active on the market. However, the Commission will interpret market shares in the light of the relevant market conditions, and in particular of the dynamics of the market ..."*¹¹²

2.5 The assessment appears to presume that vertical integration is harmful to competition

ICASA notes that Vodacom and MTN are *"both vertically integrated since they operate downstream in offering retail services as well as upstream..."*¹¹³ It argues that *"this degree of vertical integration is likely harmful to competition and gives rise to both operators having significant market power at the wholesale and retail levels."*¹¹⁴

ICASA does not present any evidence to support the claim that vertical integration is likely harmful to competition (or any evidence of an associated abuse of market power e.g. foreclosure) - rather, it appears simply to **presume** that this is the case. This is despite the fact that a similar degree of vertical integration is observed in well-functioning competitive markets across the world. Further, ICASA has not considered the fact that both MTN and Vodacom have entered into national roaming and a range of infrastructure sharing agreements with retail market rivals – in particular, Cell C, Telkom and RAIN. These agreements have facilitated the rollout of mobile services by smaller players and demonstrate the willingness of MNOs to engage in mutually beneficial wholesale agreements with rivals. This undermines ICASA's assertion that vertical integration is most likely harmful to competition.

In order to support its claim that *"the extent of vertical integration between wholesale and retail therefore confers market power on MTN and Vodacom"*¹¹⁵, ICASA presents analysis of i) the correlation between the concentration of ownership of mobile sites and retail customers in municipalities in South Africa and ii) the correlation of site market shares and customer market shares. Whilst ICASA finds a degree of correlation between retail and wholesale concentration (as shown in Figures 21 and 22 of the Discussion Document), there appears to be a high degree of variability around the observed trends and several significant outliers which will have had distortive impact on the results.

Furthermore, some degree of correlation between concentration at the wholesale and retail level is to be expected given that operators are likely to build out sites to areas where they experience higher demand. In other words, high demand has driven high site ownership. As such, the results of the analysis will reflect a degree of reverse causality and it cannot be concluded that high site ownership shares have resulted in high market shares, rather than vice versa.

Finally, Vodacom notes that, whilst existing operators are vertically-integrated and MVNOs are currently not a big part of the South African mobile market, one of the key objectives of the WOAN is to enhance service-based competition by providing wholesale access to MVNOs – if the WOAN were to achieve this objective, this would likely mitigate any potential concerns related to vertical integration.

2.6 The assessment should also have considered the role of fixed-mobile substitutability

¹¹² EC, Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services, paragraph 54

¹¹³ Discussion Document, paragraph 72

¹¹⁴ Ibid

¹¹⁵ Discussion Document, paragraph 75

ICASA should also have considered the potential effect that the expansion of fixed broadband services may have on mobile broadband prices. In particular, there is a degree of substitutability between fixed and mobile services which can be expected to grow over time: customers may offload data usage to fixed services, relieving capacity constraints currently faced by Vodacom and other operators, and forcing them to compete with fixed broadband services that offer high or unlimited usage caps. Both factors may result in lower prices for mobile broadband services.

As such, whilst fixed services may not provide a sufficient competitive constraint on mobile services to be included within the same market, it is nonetheless important to consider the competitive constraints they may impose on MNOs. Indeed, as the EC notes in its SMP guidelines:

"NRAs should also consider whether the market power of an incumbent operator can be (price) constrained by products or services from outside the relevant market and underlying retail market(s)"¹¹⁶

Overall, we consider fixed services to represent an important and growing competitive constraint on mobile services:

- Fixed penetration can be expected to grow over time – for example, Analysys Mason forecasts that household penetration will grow from around 13% in 2019 to around 19% by 2024. The proportion of fixed connections that use next generation access technology (in particular, FTTX) is also expected to grow significantly, from around 47% in 2019 to 76% 2024.¹¹⁷
- With wider availability of higher quality fixed services, customers are likely to off-load an increasing amount of their mobile data traffic to Wi-Fi, both at their home and in public places.
- The wider adoption of fixed broadband services may also enhance the use of devices that are reliant on fixed broadband services over mobile devices (for example, customers may start using video streaming services on a computer instead of a smartphone). In this context, we note that Vodacom South Africa's network busy hour for mobile data is 9 pm, i.e. a time at which people are normally at home and could use Wi-Fi.
- The results from ICASA's own regression analysis of the drivers behind mobile prices, discussed in Section 3.2.2 above, suggest that higher levels of fixed line penetration are significantly correlated with lower mobile data prices. This is consistent with there being a material degree of substitutability between fixed and mobile services – indeed, ICASA notes that "This may be due to consumers having alternatives available."

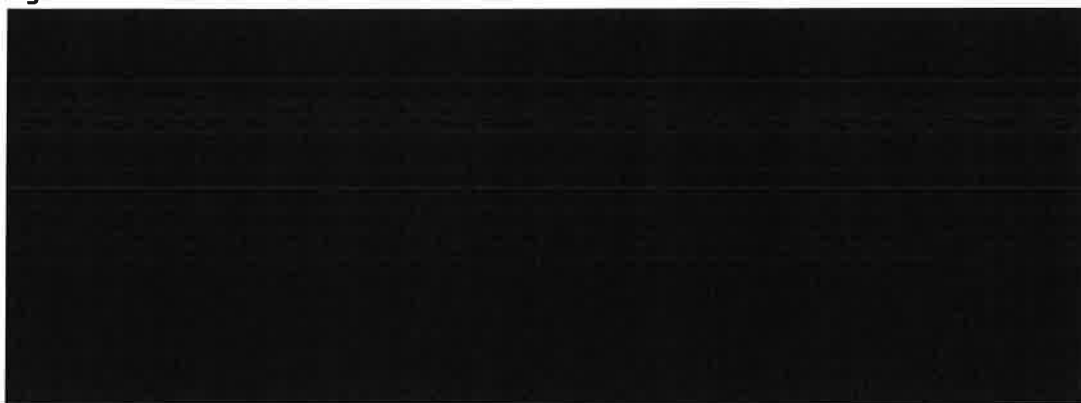
To examine this trend, Vodacom monitored the Average Revenue Per Account (ARPA) of its mobile customers that also acquired fixed broadband services with Vodacom in the first quarter of 2018. The analysis shows that the adoption of fixed broadband services was accompanied by a reduction of

[REDACTED]

¹¹⁶ EC, Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services, paragraph 64

¹¹⁷ Analysys Mason Datahub, February 2020

Figure 17: Mobile ARPA



3. Proposed remedies

ICASA sets out that:

"There is an important link between retail competition and competition upstream where mobile telecommunications services are concerned, since greater retail competition is possible once any market failures upstream have been addressed. This means that any market power identified in retail markets is best addressed in upstream markets."¹¹⁸

As such, ICASA is not proposing to impose retail remedies.

For the avoidance of doubt, Vodacom considers that no remedies are required, either upstream or downstream. This is because, as explained above, ICASA:

- Has understated the extent of competition in the retail market for mobile services (and also in upstream markets, as explained below)
- Has mischaracterised the effects of spectrum constraints on market outcomes and perceived barriers to entry and expansion. The planned assignment of spectrum should address the negative effects associated with these constraints.
- Is already consulting on proposals to assign spectrum to the WOAN - a major market intervention designed to enhance competition.

However, notwithstanding this, we agree with ICASA's preference for regulating upstream markets to address any concerns of ineffective competition in the retail market. This is consistent with international best practice.

¹¹⁸ Discussion Document, paragraph 78

D. UPSTREAM MARKET 1: SPECTRUM

For ICASA's discussion of the upstream spectrum market, Vodacom considers:

- That the distribution of spectrum in South Africa is unusual in that some smaller operators have a similar or greater share of spectrum than the larger operators, which exacerbates the overall shortage of spectrum;
- Telkom's share of spectrum is even higher when looking at the technologies that are typically used to deliver data services (i.e. 3G and 4G and in future 5G);
- That ICASA's conclusion that there is a need urgently to assign HDS in South Africa is correct; and
- The main mechanism through which additional spectrum could reduce mobile data prices is enabling operators to efficiently increase their capacity, thereby offering them the opportunity to decrease their prices even further.

As discussed in Section B, ICASA has not considered the implications on its conclusions of the lack of spectrum in South Africa in the other markets that it has defined in its Discussion Document, which compromises its analysis in all these markets.

1. Market definition

Vodacom notes that it is unusual to define a separate market for spectrum. However, if ICASA does decide to retain a separate market for spectrum, then Vodacom agrees with ICASA's decision not to define separate markets for different spectrum bands. Defining separate markets for different bands would be very difficult in practice as the degree of substitutability is influenced by the state of technology. For example, a few years ago one could argue that 700MHz and 800MHz spectrum were in separate markets, but not anymore. It is also not clear whether 1.8GHz and 3.5GHz are in the same market, etc. Given that South Africa has a technology-neutral licensing framework, this would also make it difficult to have a clear view on the future application of the respective spectrum bands.

Given that spectrum licences are issued on a national basis in South Africa, Vodacom agrees with ICASA's decision to define the market nationally.

2. Effectiveness of competition and identification of operators with SMP

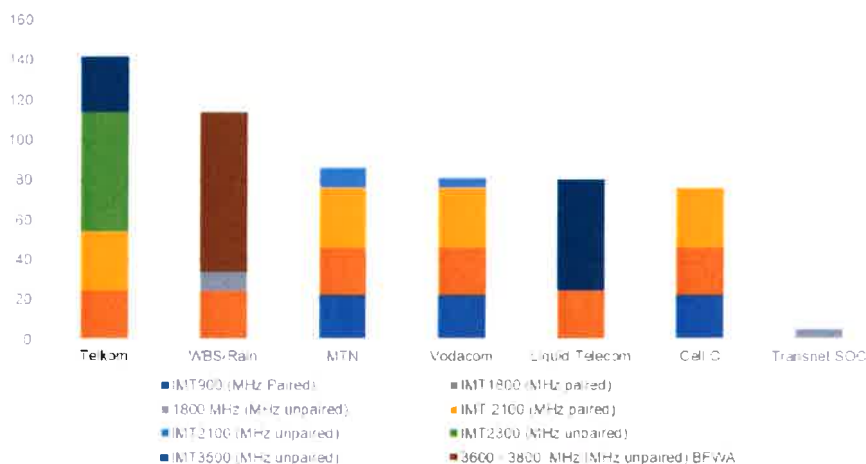
Vodacom agrees with ICASA's decision not to define any operator as having SMP for spectrum. Consistent with ICASA's analysis, Vodacom would emphasise that:

- South Africa has an unusual distribution of spectrum between different operators;
- Telkom has a particularly strong advantage when it comes to the technologies typically used for data services;
- There is a lack of spectrum currently assigned to mobile operators in South Africa; and
- Assignment of HDS could have a significant impact on price and non-price outcomes in South Africa.

2.1 ICASA's own analysis shows that South Africa has an unusual distribution of spectrum among different operators

Vodacom would highlight that the distribution of spectrum is unusual in South Africa. This is because, in South Africa, some of the smaller operators have similar or greater spectrum holdings than the larger operators. This is shown by ICASA's own figure (replicated below) and is not common in other jurisdictions.

Figure 18: The current distribution of spectrum holdings in South Africa¹¹⁹



Source: ICASA Discussion Document on Mobile Broadband services

In the UK, the largest operator (EE) has a considerably higher share of spectrum than the other operators in the market. As a result, as part of a recent auction, Ofcom conducted some analysis to assess the maximum share of spectrum that a single operator should be allowed to hold. ICASA itself refers to Ofcom's conclusion that an appropriate cap should be 37% of all spectrum:

"In a market with four operators, Ofcom considers an appropriate spectrum cap to be 37% of all spectrum and that an operator may be too small to be credible if it holds less than 10% to 15% of available spectrum"

The above quote from Ofcom implies that, within reason, it is acceptable for the largest operator to have a higher spectrum share than other operators in the market. ICASA states that Vodacom has a 14% share of the total spectrum in South Africa, which means that it is a very long way below the cap set by Ofcom. In fact, Vodacom is around the lower bound of the spectrum share that Ofcom considers is required for an operator to be credible (albeit in a four-player market). Ofcom has specifically stated that giving a higher share of spectrum to an operator with a 10% to 15% share of spectrum could increase competition:

"We consider that competition might be stronger if a credible operator with a share of spectrum in the 10 to 15% range gained a greater share."¹²⁰

¹¹⁹ Noting that there are some minor errors with this graph as explained in the sub-section below

¹²⁰ Ofcom (2018). Award of the 700MHz and 3.6 to 3.8GHz spectrum bands

There were errors in ICASA's spectrum table

Whilst reviewing ICASA's Table 3, Vodacom found a number of errors¹²¹, which it has corrected in Figure 19 below.

Figure 19: Correction of "Table 3" in Discussion Document

Licensee	IMT										Total	Market Share	
	850	900	1800	1900	2100	2100 TDD	2300	2600	3500	3600-3800		All bands	Sub 1 GHz
Telkom			24	20	30		60			28	162	26%	
MTN		22	24		30	10					86	14%	29%
Vodacom		22	24		30	5					81	13%	29%
Cell C		22	24		30						76	12%	29%
Liquid Telecon	9,8		24							56	89,8	15%	13%
WBS/RAIN			24					20			80	124	20%
Total	9,8	66	144	20	120	15	60	20	84	80	618,8	100%	100%

2.2 Telkom has a particularly strong advantage when it comes to the technologies typically used for data services

Given that ICASA itself states that its inquiry is focused on data services, ICASA should consider how the distribution of market shares has an impact on operators' ability to deliver data services. In this regard, there are two important dimensions to consider:

1. Downlink spectrum may be a more reliable indicator of operators' ability to deliver data services since users typically download a lot more than they upload. To estimate the downlink spectrum per operator, we have assumed that 75% of TDD spectrum is used for downlink capacity (and 25% for uplink). In contrast, FDD spectrum has to be split 50:50 between downlink and uplink capacity.
2. The spectrum being used for 3G and 4G services (and in future 5G) is more relevant than the spectrum being used for 2G services since the vast majority of data traffic is and will continue to be delivered over 3G and 4G networks.

In total, Telkom has a 28% share of the downlink spectrum (compared to 24% of the overall spectrum), whilst Vodacom only has 11% (compared to 14% of the overall spectrum). Figures 20 and 21 below show the downlink spectrum used by each of the operators for different technologies, both in absolute terms and expressed as market shares. Telkom has more than double the amount of spectrum used for 4G services relative to Vodacom. Telkom also has significantly more spectrum used for 3G services. This puts Telkom in a strong position to offer data services, which ICASA should take into account when assessing the effectiveness of competition at the retail-level. This is both because Telkom has a large amount of spectrum, but also because it has been able to re-farm spectrum to more advanced technologies given its low 2G subscriber base (due to its later entry into the market) and its roaming agreement with Vodacom.

¹²¹ ICASA's Table 3 excluded Liquid's 850 MHz, Telkom's 1900 MHz & RAIN's 2600 MHz and includes 1800 MHz TDD which is not correct

Figure 20: Downlink spectrum per operator for different technologies¹²²

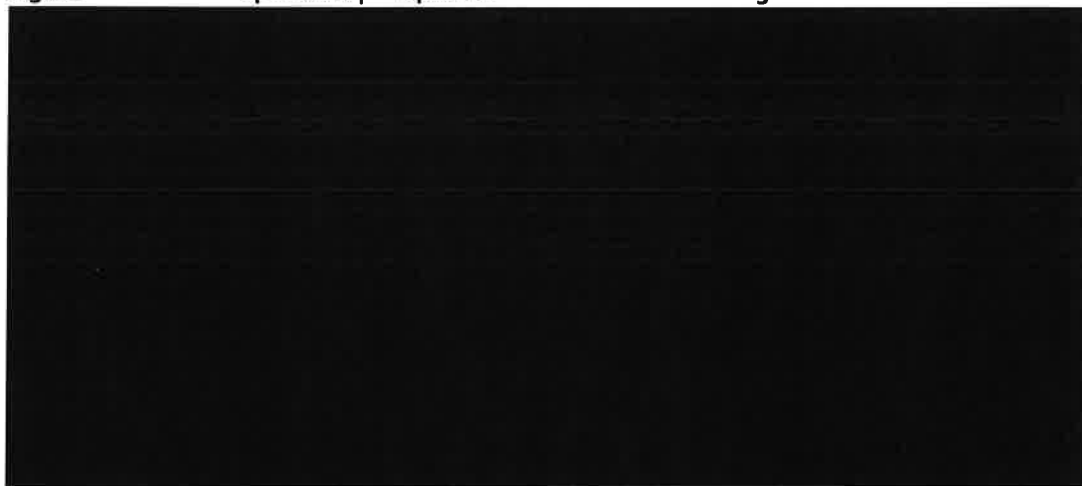
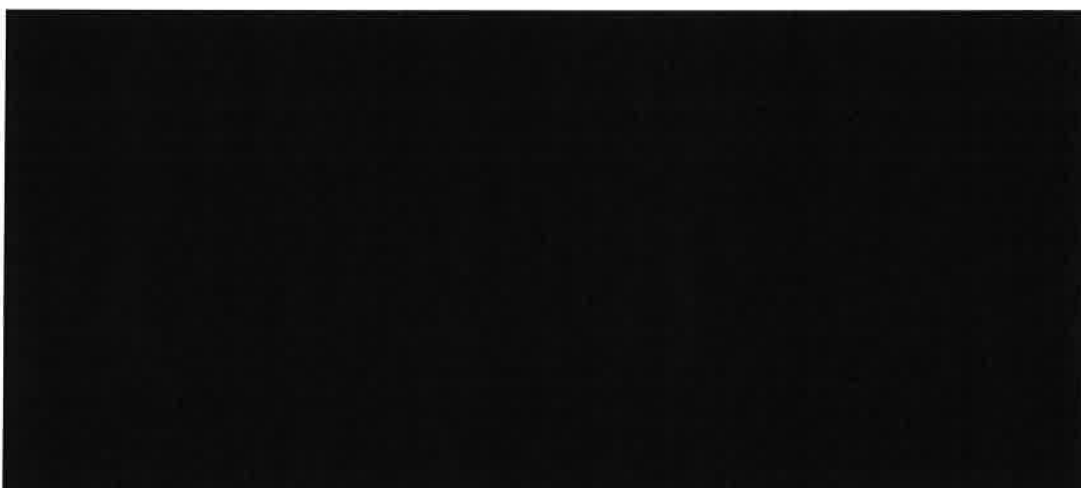


Figure 21 Market share of downlink spectrum for different technologies



Whilst Telkom does not have any low frequency spectrum, Vodacom has also operated its 4G network for many years without any low frequency spectrum¹²³. Furthermore, ICASA plans to assign both 700MHz and 800MHz spectrum, which means that Telkom should be able to acquire low frequency spectrum in the upcoming auction.

2.3 There is a lack of spectrum currently assigned to mobile operators in South Africa

Vodacom agrees with ICASA's statement that:

"...South Africa has assigned much less spectrum for mobile broadband than many other countries and much more could feasibly be assigned. MTN, Vodacom and Cell C in particular have much lower assignments than mobile operators in most developed countries and also than those in countries classified as "Leading" or "Advanced" by the ITU."

Figure 10 in Section C provides additional evidence that the average spectrum assignment per operator in South Africa is very low. At present, 50% of the IMT spectrum is unassigned in South Africa. This

¹²² Observed via VC contracted drive tests at a single point in time

¹²³ It only recently started using a small amount (2X3MHz) of low frequency spectrum for 4G services in non-metro areas

means that assigning more spectrum¹²⁴ could have a significant impact on outcomes, as discussed in the next section.

2.4 Assignment of HDS could have a significant impact on price and non-price outcomes in South Africa

It is important that when examining whether the mobile market currently exhibits any "market failures", ICASA considers the impact of the current spectrum shortages on market outcomes,

Impact on prices

There are a number of mechanisms through which the assignment of HDS could lower retail prices. In particular, it could:

1. Reduce the network costs required to achieve a given level of network quality and coverage, which would enhance the incentive and ability of Vodacom (and other operators) to expand coverage and add extra capacity layers to offer higher speed services.
2. Alleviate capacity constraints as a result of the increased investment in capacity noted above. Operators could as a result adopt a more aggressive pricing strategy (like Telkom currently does given its abundance of capacity), as they would not need to be as concerned as they currently are about network quality falling below an acceptable threshold in the event of network congestion. 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 HDS (and more efficient access to ducts and poles for fibre backhaul). This is because all operators have an incentive to price in a way that uses up their network capacity, whilst maintaining a quality of service that is consistent with how they position themselves in the market.
3. Result in higher data usage, as a consequence of the positive effects noted above, which would allow non-network costs to be spread over a larger volume of data traffic. This is because non-network costs are mainly subscriber-driven rather than usage-driven. This means that, if data usage goes up, non-network costs are unlikely to change by as much. This would, therefore, provide additional downward pressure on unit prices for data in addition to the downward pressure afforded by alleviating network capacity constraints noted above.

Vodacom considers that the second and third effects are likely to be particularly important. Northstream has estimated the potential magnitude of the impact of spectrum on capacity based on a number of simplifying assumptions. Figure 22 below shows the network capacity for Vodacom's



been further facilitated by the third effect since the increase in data usage would have resulted in lower non-network costs per unit of data traffic. The impact of this could have been significant, given that non-network costs represent 70% of total OPEX. Adding additional capacity to Vodacom's network would also have allowed Vodacom to offer higher user speeds.

¹²⁴ The majority of the unassigned HDS relates 700 MHz, 800 MHz, 2300 MHz, 2600 MHz and 3500 MHz, which will be included in the auction

Figure 22 Impact of spectrum on network capacity (combined 2G/3G/4G)



3. Proposed remedies

Vodacom agrees with ICASA's view that spectrum should be assigned on an urgent basis in a pro-competitive manner, and in a way which optimises its efficient use. Vodacom has provided detailed comments on ICASA's IM on the assignment of HDS in a separate response.

E. Upstream market 2: Site access

In this section, we consider ICASA's sites access market analysis. In summary Vodacom agrees that there is a separate market for site access and that the relevant market is likely to have a sub-national scope. Vodacom does however have a number of concerns with ICASA's analysis of the site access market, i.e.

the analysis:

- When defining the relevant market, ignores the existence of different site types and, most importantly, the fact that MNOs do not control all sites.
- As a result of the significant impact of the omission identified above on the market share analysis, clearly overestimates Vodacom's market share.
- Understates the level of competition in the site access market, ignoring the long history of site sharing in South Africa.
- Does not justify why it is necessary to impose, on market participants, additional remedies beyond the Facilities Leasing Regulations. In particular, it does not set out clearly the nature of the market failure that it is trying to solve.

Figure 23 below highlights key areas where Vodacom considers that ICASA has deviated from the requirements set out in the ECA and/or best practice. We expand on these points in the following sub-sections, where we present a detailed assessment of ICASA's analysis and findings.

Figure 23: Areas where ICASA's analysis deviates from the ECA and best practice

Site access market analysis:	
Product market definition	<ul style="list-style-type: none"> • Is incomplete and lacks consideration of the types of sites to be included.
Geographic market definition	<ul style="list-style-type: none"> • Does not justify the choice of geographical unit over which to analyse the market. • Does not aggregate geographical units into broader areas with homogeneous competitive conditions.
Assessment of effectiveness of competition and SMP	<ul style="list-style-type: none"> • Is not forward-looking. • Ignores the impact of existing Facilities Leasing regulations. • Does not assess competition within the sub-national markets it has defined • Ignores relevant evidence (e.g. the wide-spread site sharing in South Africa) when assessing the effectiveness of competition. • Overestimates entry barriers in urban areas and the role of vertical integration.
Remedies	<ul style="list-style-type: none"> • Identifies no market failures. • Does not consider the effectiveness of the existing Regulations. • Does not assess the impact of the proposed remedies.

1. Market definition

ICASA's preliminary conclusion is that *"there is likely to be a market for access to sites which is distinct from the market for roaming"*.¹²⁵ It also considers that it is *"unlikely that an operator would respond to a 5% to 10% increase in the price of site sharing by deciding to establish a new site of its own, particularly given the challenges and potential delays involved in doing so"*.¹²⁶

ICASA considers that the relevant geographic market is sub-national *"at least as narrow as local and metropolitan municipalities for the purposes of analysis market shares and market power"*.¹²⁷ It bases its conclusion on the geographic aspect of the market on three key elements:

- The fact that roll out decisions are undertaken at a local level;
- The differentiation of charges for site access between metro and non-metro areas; and,
- The limited coverage of an individual site (no more than 30km).

Vodacom agrees with ICASA that there is a separate market for site access, which is distinct from the market for national roaming. We further consider that the market should cover all types of sites that could be used to deploy mobile equipment, including unused rooftops and structures. We also agree with ICASA that there are also grounds for defining sub-national markets and encourage ICASA to undertake a proper assessment of the precise geographic scope of the market.

1.1 There are grounds to consider that site access is a separate market from national roaming

Vodacom concurs with ICASA that there are grounds to consider that site access lies in a market separate from national roaming, MVNO and APN services. In particular, there are three key reasons why we consider site access is likely to be in a separate market from national roaming.

- Firstly, there are significant **differences in the cost structure of site access and national roaming services**. Site sharing services usually imply that an access seeker incurs (upfront and/or recurrent) fixed costs which are largely independent of the volume of traffic generated. In contrast, national roaming agreements are usually based on variable charges per unit of traffic. This makes national roaming particularly attractive in areas with low traffic volumes, which are usually areas with low population density, where it is not feasible for the access seeker to deploy its own network.
- Secondly, there are important **differences in the functionality of site sharing services and national roaming**. Under national roaming, the ability of the access seeker to differentiate its traffic services from those of the access provider is fairly limited. However, with site sharing, the access seeker has the ability to deploy and configure its own equipment and hence to differentiate its services from those of the access provider.
- Finally, a provider wishing to purchase site access has a number of possible access providers from whom to purchase services, such as third-party tower-sharing companies, municipalities and different types of buildings, rooftops, billboards, shopping malls etc. These providers would not be able to offer roaming services, as they do not deploy any active mobile equipment and do not own any spectrum.

¹²⁵ Discussion Document, paragraph 103

¹²⁶ Discussion Document, paragraph 101

¹²⁷ Discussion Document, paragraph 105

These factors do not mean that national roaming does not, in certain circumstances, exert a competitive constraint over site access services - it is just unlikely to be enough to warrant putting the two services in the same market.

Vodacom considers that site access is also likely to be in a separate market from MVNO and APN services. This is for similar reasons to those stated above in relation to national roaming. In fact, there is likely to be less substitutability between site access and MVNO/APN services, than there is between site access and roaming services. This is because MVNOs do not have access to any spectrum and do not have network infrastructure similar to MNOs who buy roaming services to complement their existing networks. Further, whilst site access and national roaming services are usually requested in specific areas, MVNOs typically seek access nationally.

1.2 The relevant product market should include all types of available sites

ICASA's definition of the relevant market misses an important point, i.e. the specification of the types of sites that form part of the relevant market. There is a wide variety of sites, from microcells, lampposts and rooftops to macro sites with different capacities depending on a number of factors, such as spectrum, height of the mast, wind load, etc.

In Vodacom's view, all current used sites and potential unused sites should be considered and be included as part of the relevant product market. That is, in addition to used sites, the relevant market should also include all suitable unused rooftops and other urban infrastructure with the potential to be utilised as a functional site. The use of these alternative structures is underpinned by the policy for the erection of communications infrastructure that is prevalent in many metropolitan areas. For example, the Nelson Mandela Metropolitan Municipality Telecommunications Infrastructure policy stipulates that operators have to prioritise the use of existing infrastructure, including rooftops, before considering building new sites.¹²⁸

Although the bulk of these structures are not currently used to house a mobile radio site, they have the potential to be used as a mobile radio site at relatively low cost compared with deploying a greenfield site. By way of example, where Vodacom is currently using a rooftop, access seekers typically show little interest, if any, in using the passive infrastructure that Vodacom has deployed on the rooftop. Of more importance to the access seeker is the rooftop itself. An access seeker will typically consider the same rooftop and all surrounding rooftops/structures and approach landlords in control of these rooftops directly. In the case of other structures like lamp poles, billboards, etc., access seekers will approach the landlord/owner controlling the poles directly and the typical practice is for each MNO to get access to a lamp pole in, for example, a street. Vodacom may get the "1st" pole, Telkom the "2nd" pole, MTN the "3rd" pole and so on. This means that all such structures with the potential to be utilised as a functional site should be considered part of the product market.

Looking forward, as MNOs densify their networks to deploy 5G services, the deployment of small cells using existing urban infrastructure will become even more important. Jeff Schumacher, CEO of Helios Tower South Africa, recently stated that:

"The traditional tower will be the minority in three to four years' time because the densification for LTE and for 5G requires different solutions, so we have re-tailored our product lines to meet these requirements."¹²⁹

¹²⁸ http://www.emrsa.co.za/documents/IUKDG_PVhLo_Telecomm_Policy_and_Guidelines.pdf

¹²⁹ TowerXchange Meetup Africa 2019. Page 139

In a similar vein, Alexander Chub, President of Russian Towers, stated that:

"A significant majority of our new sites are urban infrastructure such as city poles and electricity poles"¹³⁰

1.3 The geographic scope of the market requires a proper assessment

In this response, Vodacom is unable to comment fully since ICASA declined to provide its underlying analysis and because certain aspects of ICASA's analysis appears incorrect. Given this, Vodacom does not, in this response, take a definitive position on the appropriate boundaries of the geographic market and reserves its rights to comment further. However, despite this, it does concur with ICASA that there may be a case for defining sub-national markets for site access. This is on the basis that the number and type of providers for site access in a given area varies across South Africa. This is because the business case for entering the different geographic areas differs significantly due to, amongst others, the availability of alternative suitable structures, heterogeneity of costs and demand characteristics across the country.

As set out above, Vodacom notes that ICASA does not take a firm view on the granularity of the market but it does consider that the markets are at least as narrow as local and metropolitan municipalities. Based on this, ICASA assesses the potential existence of SMP in the different municipalities. ICASA has not justified why the municipality is the most appropriate geographic unit to consider in this case. BEREC recommends that the choice of the geographical units should be based on the following criteria:

- *"They are mutually exclusive and less than national.*
- *The network structure of all relevant operators and the services sold on the market can be mapped onto the geographical units.*
- *They have clear and stable boundaries.*
- *They are small enough for competitive conditions to be unlikely to vary significantly within the unit but at the same time large enough that the burden on operators and NRAs with regard to data delivery and analysis is reasonable."¹³¹*

Furthermore, it is also important to note that identifying the geographical unit of analysis (the municipality in the current case) is only the first of two steps in the assessment of relevant geographic markets. The second step consists of aggregating the different geographic units based on the homogeneity of the competitive conditions, based on the number of competitors, market shares or potential demand, amongst other factors.¹³² Vodacom notes that ICASA's analysis appears to have omitted this step.

2. Effectiveness of competition and identification of operators with SMP

ICASA identifies the following problematic findings as ostensible indicators of ineffective competition in the market for site access:

- The existence of entry barriers, due to local municipality approvals that a provider is required to obtain before deploying a site and the alleged conduct of incumbent operators;

¹³⁰ TowerXchange's 2019, European market review, page 44

¹³¹ BoR (14) 73, pages 21-22

¹³² BoR (18) 213