- High levels of concentration in the market, *"with MTN and Vodacom together accounting for just under 70% of the market and ATC and other tower companies accounting for a further 14%"*;[133]
- The existence of dominant operators in a number of municipalities, Vodacom being dominant in 104 municipalities, MTN in 18 and both in 2 municipalities;[134] and
- The presence of vertically integrated providers.

Vodacom disagrees with the assessment of the effectiveness of competition and SMP for site access. In particular, and notwithstanding ICASA's not sharing its analysis, or details of the allegations made by other parties. Vodacom has the following concerns with ICASA's assessment, i.e. **the assessment**:

- Overestimates Vodacom's market share as a result of applying an incorrect market definition;
- Is not forward-looking;
- Overlooks the widespread site-sharing already taking place in South Africa;
- Overstates the barriers to entry;
- Incorrectly assumes that Vodacom faces favourable rental charges and underplays the most recent pricing evidence for site access; and
- Incorrectly finds that vertical integration is an advantage in the site access market.

2.1 The assessment overestimates Vodacom's market share

It allocates more sites to Vodacom than it should

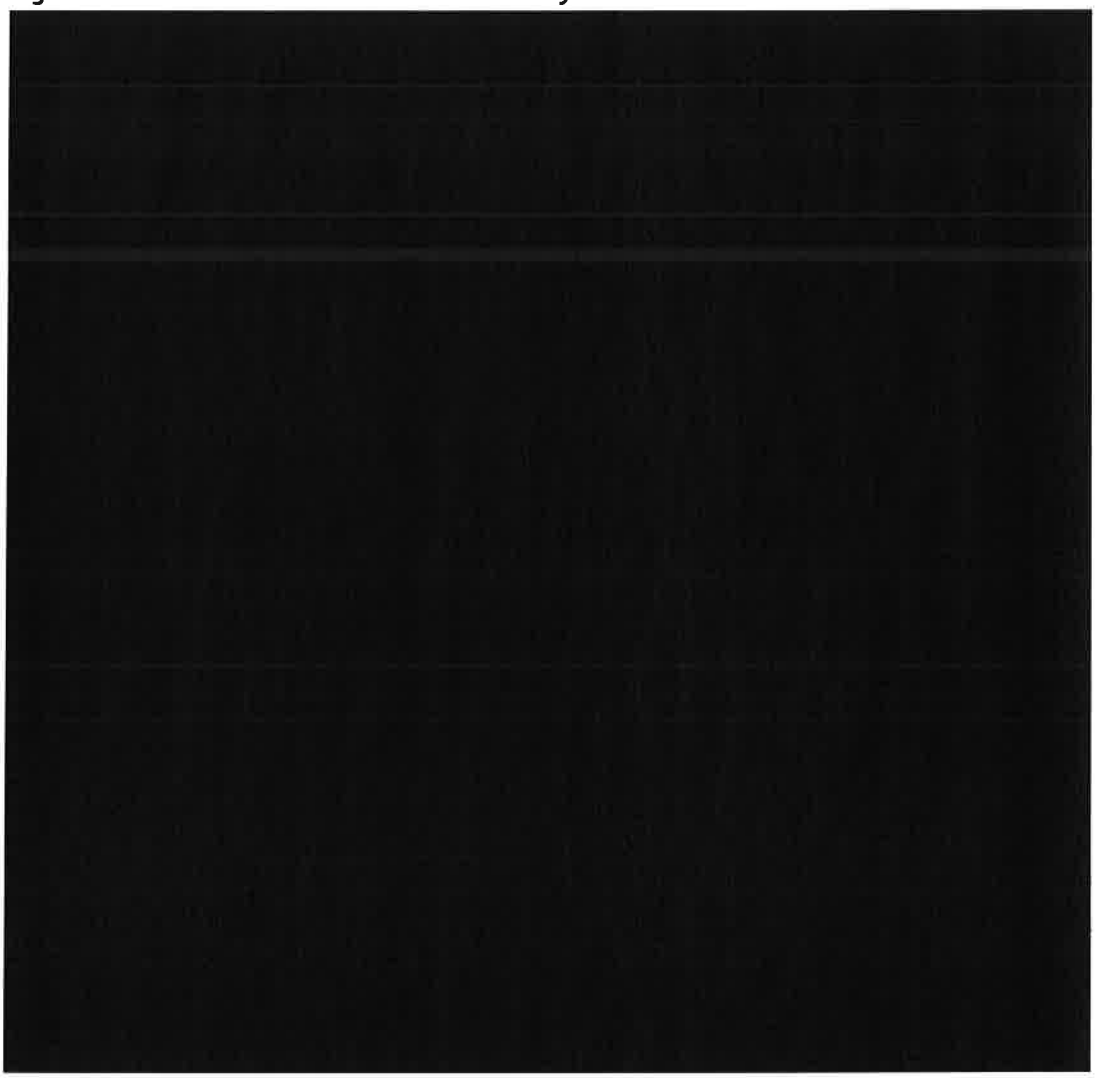
ICASA estimates the market shares for site ownership within each municipality. This then leads to the dominance assessment included in Figure 25 of the Discussion Document. It is not clear to Vodacom how ICASA has estimated these market shares.[135] However, Vodacom is of the view that ICASA may have over-estimated Vodacom's share. For example, it is surprising that Vodacom has SMP in so many more municipalities than MTN (106 relative to 20 municipalities), despite both operators controlling a similar number of sites.

The information Vodacom provided to ICASA, based on the template provided, included information on both i) sites owned by Vodacom and ii) sites that Vodacom uses but it does not own, nor control e.g. street poles, micro and indoor cells, billboards, and rooftops. This distinction is important, because **for the sites that Vodacom does not own or control**, it cannot decide who gets access to standard passive-sharing and on what terms, as this is under the control of the site owner. This is the case with micro and indoor cells, lampposts, billboards and rooftops.

Figure 24 below depicts how many sites Vodacom uses (excluding 3rd party sites it leases from other MNOs or TowerCos) and the sites that it effectively controls.[136]

[133] Discussion Document, paragraph 109
[134] Discussion Document, paragraph 109
[135] ICASA has not been willing to grant Vodacom access to its market share calculations for sites
[136] In Annexure B to this response, Vodacom provides ICASA with its notes on Annexure Q10.1 RAN Site sharing seekers Updated – submitted on 24 May 2019. This provide a more detailed picture of Vodacom's sites

Figure 24: Overview of the different sites used by Vodacom



The latter sites (e.g. microcells, indoor cells, lampposts, billboards and rooftops) should still be considered by ICASA in the estimation of market shares, but these shares should be allocated to a different party (the property owner) rather than Vodacom.

Furthermore, competition in the market for site access is also likely to be affected by the fact that there are many suitable urban structures, such as rooftops and street poles that, although not currently used to house a mobile site, have the potential to be used as a mobile radio site (see E.1.2 for more details) For the reasons mentioned under E.1.2 above, in principle, ICASA should include unused rooftops and suitable structures for the assessment of market shares as such structures often provide attractive options for players seeking to roll-out additional mobile equipment. However, Vodacom accepts that including such potential sites within market share estimates is unlikely to be feasible in practice due to a lack of available data. Notwithstanding this, at the very least, ICASA should acknowledge the competitive constraint imposed by unused rooftops and other infrastructures, and the obligation imposed by Municipalities to impose co-location where available and the requirement to first utilise these alternative structures, when assessing the level of competition in the site access market.

Evidence that ICASA is overestimating Vodacom's market share

Given the points set out above, and not having access to ICASA's analysis, Vodacom has prepared an alternative estimate of market shares for site access based on the methodology applied by ICASA. We have done this as follows:

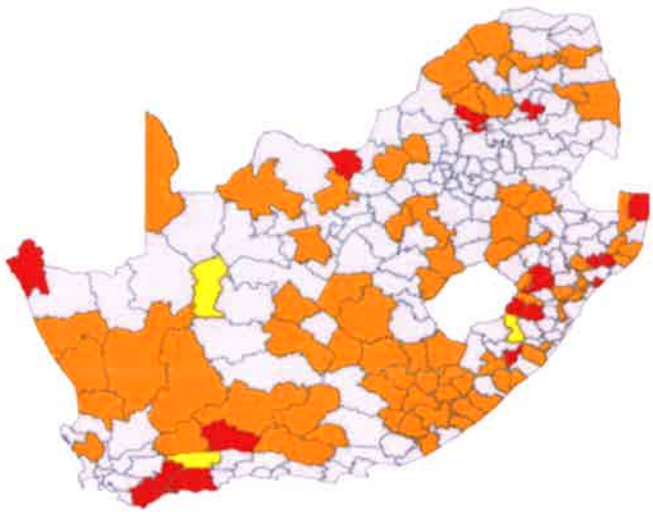
- Used information on its own sites, MTN's sites, Telkom's (Gyro) sites and the sites of tower-sharing companies.

- Allocated to each provider the sites they have control of, including shareable and non-shareable macro sites. This likely underestimates MTN's market share, given that Vodacom does not have information for MTN's macro sites with a height below 15m.

- Accounted for, all billboards, indoor and micro cells, lampposts and rooftops on which Vodacom **already** has sites. For the reasons set out above, in the market share calculations these have not been allocated to Vodacom, but they are considered in the estimation of the total market size.[137] Importantly, due to the lack of information, this excludes all unused alternative structures from the market, **thereby overestimating the shares of all entities**.

Given this, the market share estimates provided by Vodacom in Figure 25 below provide an **upper bound on Vodacom's market share**. Despite this, the resulting estimates are significantly lower than ICASA's estimates. In contrast to the 106 municipalities where ICASA finds that Vodacom has a market share above 45%, Vodacom's own estimates show that it has a market share above 45% in, at the most, 17 municipalities. Furthermore, Vodacom's national market share based on this estimate is below 25%. Vodacom would be happy to share its analysis with ICASA, so that ICASA can check its own analysis.

Figure 25: Municipalities with a market share above 45%



Source: Site information available to Vodacom
Notes: The municipalities coloured in orange are where Telkom's Gyro unit has a market share above 45%, the areas coloured yellow are where MTN has a market share above 45% and areas coloured red are where Vodacom has a market share above 45%. In the grey areas no provider has a market share above 45%.

[137] This clearly underestimates the size of the market, not only because it does not include the urban structures in which MTN and Telkom rely, but also because this represents just a small fraction of all available urban infrastructure

Space constraints

The analysis above estimates market shares giving the same weight to all sites. However, not all sites have the same capacity for sharing. For example, the wind load of a site is key to assessing whether it can be shared with third parties and the number of parties that can be accommodated on the site. A key difference between MNOs and Towercos is that a significant proportion of MNOs' infrastructures [redacted] accommodate further sharing. In contrast to this, Towercos have deployed their masts with the primary purpose of sharing them with as many as possible.

In view of the above, ICASA's market share analysis, based on the methodology it applies, is likely to overestimate the market share of Vodacom given its lower capacity per site compared the capacity available on Towercos sites. The variable capacity of sites, and not just the number of sites controlled, should thus be considered in determining the available market size and market shares.

The assessment fails to take into account the role of spectrum constraints

ICASA recognises that the lack of spectrum is a fundamental problem, which may compromise market outcomes. More specifically, ICASA acknowledges in par 62 that *"...having access to spectrum lowers the cost to operators of rolling out both improved coverage and capacity, since it requires them to build fewer base stations"*.

Vodacom agrees with ICASA that spectrum and associated capacity constraints require MNOs to roll-out more sites than would otherwise be needed (refer to Section C). However, ICASA does not take this into account when assessing the level of competition and SMP in the markets for site access and national roaming.

2.2 The assessment is not forward-looking

ICASA's assessment of the effectiveness of competition is based on an analysis of barriers to entry and current (flawed) market shares (including an assessment of HHI). As such, it ignores many other relevant factors listed in the Guidelines as detailed in section A. A fundamental weakness of the assessment is that it is not **forward-looking**. This omission is particularly important given the dynamic nature of the market for sites access. Most notably, the assessment ignores:

- Telkom's rapid roll-out of sites;
- The important and increasing role of tower companies in the market; and
- The imminent requirement for greater site densification following the assignment of higher HDS frequencies (e.g. 2600 and 3500 MHz due to more limited propagation characteristics). This will likely place greater emphasis on obtaining access to alternative infrastructures such as buildings, rooftops and lamp posts.

Telkom's rapid site roll-out

As discussed in Section B, on a national basis, Telkom, through its Gyro unit, has become one of the largest operators in terms of tower ownership. Looking forward, Telkom Capital Markets Day 2019's presentation (Telkom CMDP 2019) forecasts, over the next two years, a further 78% growth in Telkom's site deployment – clearly showing there are no or very limited barriers to expansion, more so for Telkom, in this market.

Important role of tower-sharing companies

The assessment underestimates the role of Towercos, stating that *"independent tower companies only account for around 14% of available sites"*.[138] According to the latest information published by TowerXchange Africa:[139]

- American Tower has added 174 new sites since the start of 2018, bringing its total portfolio to 2,666 sites.
- Helios Towers acquired SA Towers – it has 500 sites ready to be built or in the process of being permitted, with plans to build a further 300 sites per year.
- Most recently, SBA Communications announced plans to exercise its option in Q3 2019 to acquire 94% of equity in Atlas Towers, including Atlas's existing sites and future plans."[140]

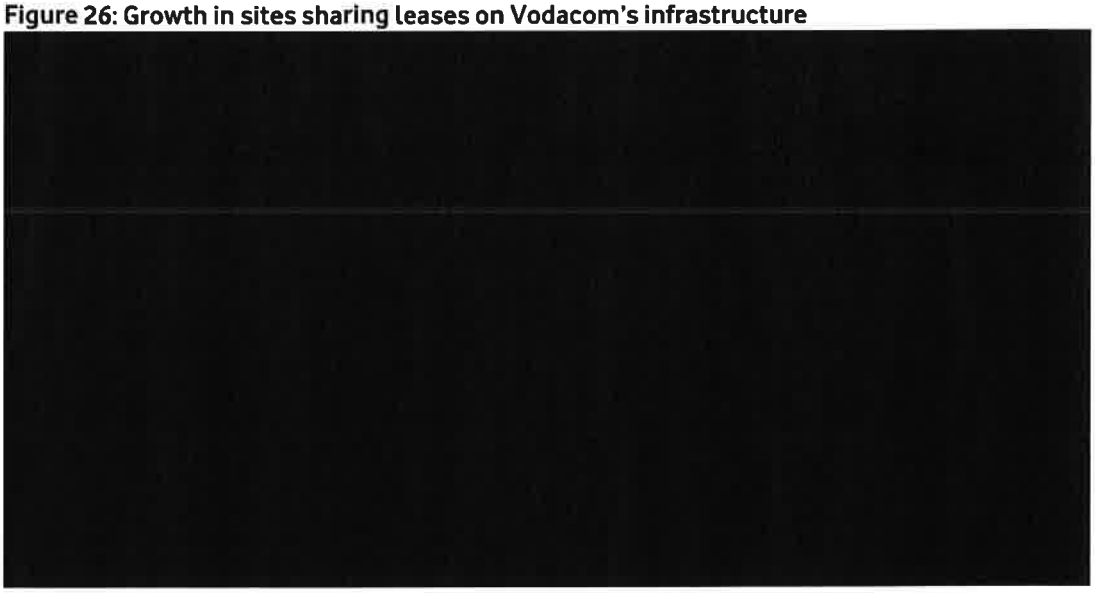
Tower-sharing companies also exert a stronger competitive constraint than is suggested by their market shares alone, based on the methodology applied by ICASA, as they have typically rolled-out towers with the explicit aim of maximising the opportunities for sharing their infrastructure, as explained above in Section E.2.1.

2.3 The assessment overlooks widespread site-sharing in South Africa

The Discussion Document refers to the *"relatively limited extent of site sharing in South Africa"*. Vodacom strongly disagrees with the notion that site sharing in South Africa is relatively limited. On the contrary, Vodacom has embraced mobile facility (site) sharing with all operators, including Cell C when it entered the market in 2001. Operators have strong bargaining power when it comes to requesting site access, as they have significant choice. Importantly, site access is further underpinned by the Facilities Leasing Regulations, which includes an access obligation on all facilities deployed by licensees.

Indeed, Figure 26 below shows the increasing number of sites sharing leases by Vodacom for the period from 2001 to 2019.

Figure 26: Growth in sites sharing leases on Vodacom's infrastructure



[138] Discussion Document, paragraph 108
[139] TowerXchange Africa 2019 Special Edition
[140] Op. Cit. page 104

Vodacom has continuously made an effort to accommodate access

Vodacom has continuously made an effort to accommodate access, by designing and adjusting its facilities to support this. For example,

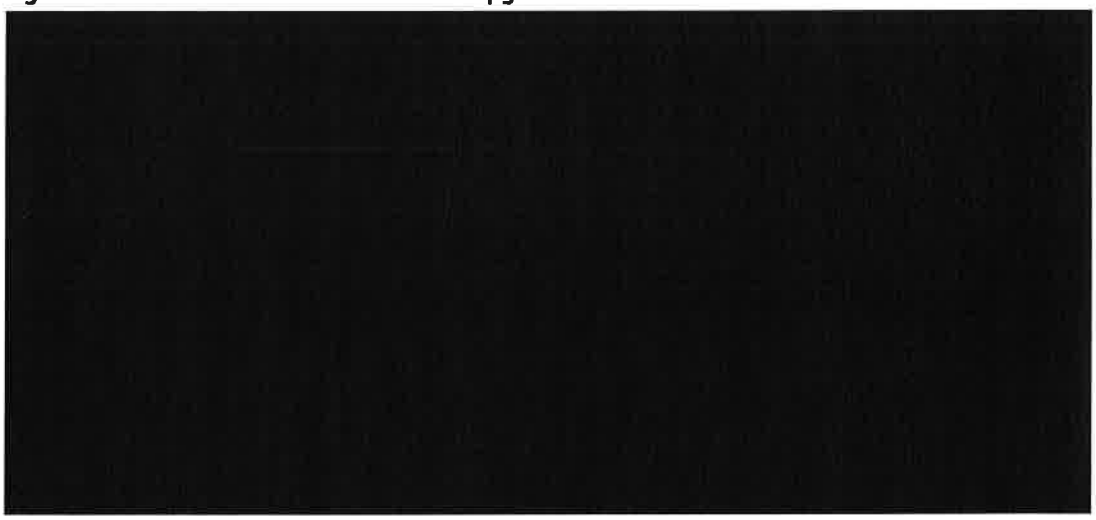
- In 1994, Vodacom sites were able to accommodate two parties (for antennas and microwave dishes). However, since 2001, Vodacom has extended its available tower facility space to accommodate more than two parties.[141]

- Since 2004, Vodacom has further extended the available tower facility space to accommodate additional transmission.

- From 2010, Vodacom allowed the use of the tower facility space below the landing platform for additional sharing.

Whilst Vodacom does face space limitations on many of its sites, it has done its best to upgrade sites to support multiple tenants where possible and reasonable. As shown below, Vodacom has, since 2015, upgraded 807 sites to allow for further access on those sites. Figure 27 below depicts the number of sites Vodacom has upgraded each year since 2015 to 2019 (only for a portion of the year).

Figure 27: Annual number of Vodacom's upgraded sites



In addition to the above, Vodacom has developed an online portal for applicants where they can obtain information on the available sites and apply for passive sharing, as a way to simplify the process.

Vodacom has approved the majority of applications it has received for passive sharing

That is, of all the applications for passive sharing received by Vodacom up to 2019 from Cell C, MTN and Telkom, Vodacom has accepted 90% of them. The few applications that have been rejected have been due to:

- Either the landlord rejecting the application, something which is outside of Vodacom's control - that is, in some cases landlords only allow for a certain number of parties on a site; or

- Capacity constraints as, despite Vodacom's best efforts, not all sites can be further upgraded to accommodate additional tenants.

[141] Vodacom's ultimate aim has always been to pair with other parties in order to speed the roll out

The strong take up of site-sharing suggests that there is no market failure

The rapid and widespread prevalence of site sharing in South Africa is completely at odds with the existence of any market failure in the site access market. A key factor behind the success of such agreements is the fact that operators have countervailing buyer power, driven by, amongst others, the following factors:

- The existence of a number of alternative options for getting site access, such as the availability of a wide range of urban infrastructures and the presence of Towercos. Hence, if Vodacom does not provide a compelling offer, then it knows that another party will. For example, this was the case when Vodacom reached the DPS agreement with Telkom, as Telkom was also simultaneously negotiating with MTN for such access.

- The Facilities Leasing Regulations, oblige Licensees to provide access to their infrastructure as long as this is feasible.

2.4 The assessment overstates the barriers to entry for site access

Vodacom agrees that the required regulatory processes and approvals such as processing of municipal leases, environmental impact assessments (EIAs) and wayleaves lead to substantial costs and delays in certain areas. However, Vodacom disagrees with other aspects of **the assessment of barriers to entry** for site access, for the following reasons:

- New entrants can leverage many used and unused urban buildings and structures for their sites. As explained above, MNO's existing passive facilities on urban structures are not of interest to new entrants, or any access seeker for that matter. Indeed, the approval of a rooftop site, where the antennas or antenna poles do not protrude higher than three meters above the highest point of the roof, is much easier to obtain.

- The rapid growth of Telkom' and RAIN's sites in recent years and future deployment plans demonstrate that entry barriers are not significant (see section B).

- There are limited economies of scale associated with rolling-out additional sites, as the costs per site do not depend on the number of sites already deployed. Consistent with this, a subset of the tower-sharing companies are able to operate in the market despite having a relatively small portfolios of sites (whilst some tower-sharing companies do also have larger portfolios of sites).

- Cell C's complaint that *"where an operator controls infrastructure in critical areas or areas where access to land is limited (such as high sites, shopping centre rooftops or stations), this provides it with market power and allows it to determine the price of access"*[142] is unfounded for two reasons.

  - The Facilities Leasing Regulations require operators to offer site access on non-discriminatory terms, including price across sites they control.

  - Vodacom does not control the alternative structures on which it deployed its' network infrastructure, such as rooftops and other structures.

- Vodacom further disagrees with the *"claim that incumbents take a long time to consider and approve co-location requests."*[143] All MNOs are subject to the Facilities Leasing Regulations, which govern the timelines and terms for gaining access to sites. These regulations enhance the buyer

[142] Discussion Document, paragraph 107
[143] Discussion Document, paragraph 108

power of access seekers, as site access can only be refused if unreasonable. As stated under the remedies section below, Vodacom follows a transparent process with established timelines for processing orders via its online portal for site sharing.

- The statement that *"incumbent operators frequently grant space at a lower level than the access seeker would like, even where there is technically space available at a higher level"*[144], is also not correct on the case of mobile site access. For example, Vodacom has recently promoted DPS in an effort to accommodate further sharing on the sites which are not available for standard passive sharing.

2.5 The assessment incorrectly assumes that Vodacom benefits from favourable rental charges and underplays the most recent pricing evidence for site access

Vodacom pays MTN for site access

The Discussion Document states that Vodacom and MTN benefit from their large number of sites, which allows them to pair sites with one another, effectively securing them free site rental. It then goes further and states that the reciprocal agreement between MTN and Vodacom for site rental includes favourable rental charges where sites are not paired.

Contrary to this view, the absence of monetary flows between Vodacom and MTN for pairing sites does not imply that the site rentals for these sites are not in effect the same as the standard rate card fees charged (distinguishing between metro and rural site), for non-paired sites, offered on a non-discriminatory basis to all.

Vodacom does not pay less than others for site access

Because the Facility Leasing Regulations enforce non-discriminatory obligation, licensees are not allowed to offer discriminatory charges.

The Discussion Document shows that prices are closely aligned with costs

ICASA downplays its own analysis in the Discussion Document showing that observed prices for site access are closely aligned with costs:

- Firstly, it argues that capex costs may be lower than those assumed by its analysis, given that some investment costs may have already been recouped by the access provider. However, this ignores the fact that, even if some costs have been recouped, operators need to make recurrent investments to upgrade their infrastructure. Annualized capital cost, equal to depreciation plus a cost of capital should be considered.

- Secondly, it states that it is unclear if the opex provided *"contains opex costs for non-shared elements such as antenna, radio equipment and backhaul"*. For Vodacom, this is not the case. That is, the opex per site provided excludes the shared elements listed by ICASA. Also, whilst we agree that urban property rentals are generally more expensive than rural, there are some notable exceptions such as in KZN, where a significant number of rural locations are leased at expensive rates from the Ingonyama Trust.

- Finally, ICASA states that historically, prices may have been higher. Vodacom has not seen what evidence ICASA is referring to, so it is difficult for Vodacom to comment on this. In any case, historical evidence is not relevant for the purposes of the market review given that ICASA needs to undertake a forward-looking analysis of the effectiveness of competition. Therefore, ICASA should

[144] Discussion Document, paragraph 108

be focussing on whether it has any reason to believe that its assessment of the current level of prices for site access relative to costs may change in future.

Vodacom's average monthly OPEX and CAPEX estimates in relation to passive sharing fall within the range indicated by ICASA. However, Vodacom notes that its detailed analysis of both, OPEX and CAPEX, [redacted] available in relation to the cost estimates provided by other respondents to inform ICASA's range, e.g. the types of costs considered as well as whether those costs are reflective of those an operator (such as Vodacom) actually engaged in sharing incurs, or are instead hypothetical estimates, Vodacom is unable to comment on how reasonable the lower boundary is.

2.6 The assessment incorrectly finds that vertical integration is an advantage in the site access market

It considers that vertical integration is a problem in this market because:

- Across municipalities, there is said to be strong correlation between the level of concentration of mobile sites and retail customers; and
- There are said to have been complaints that larger operators use their control of site infrastructure to disadvantage smaller rivals.

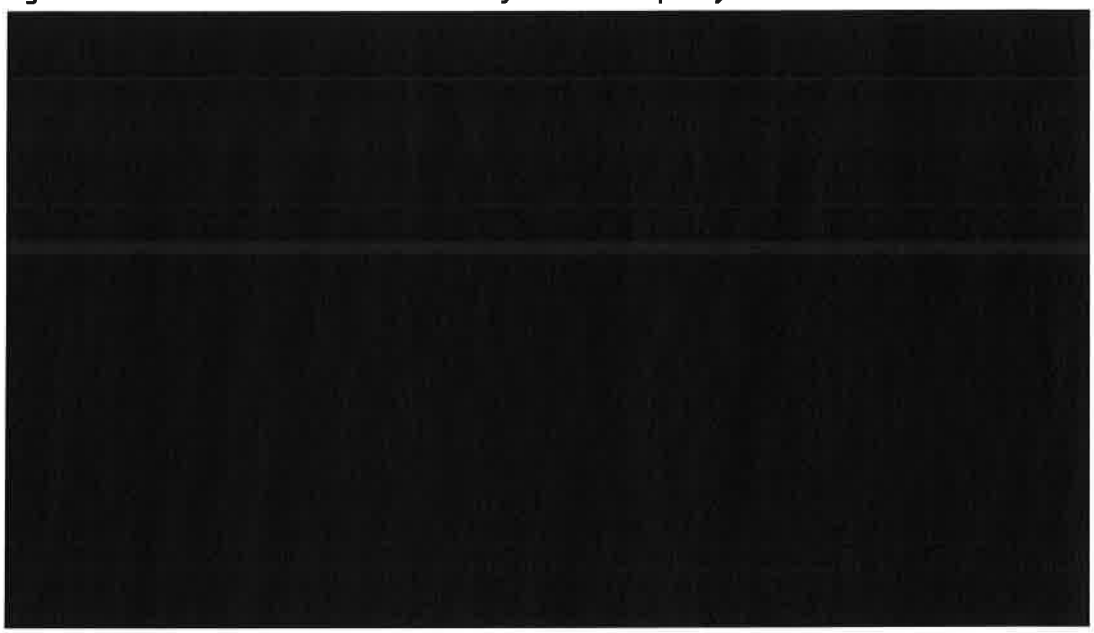
Vodacom disagrees with both of these points. Notwithstanding Vodacom's view that both ICASA's retail and site market share analysis are incorrect,[145] as discussed in Section C, it is in any event the case that operators are likely to roll-out more sites using both own, co-located and alternative infrastructures in areas where they have more retail customers with increased demand. Therefore, rather than the share of sites driving retail customers, the causality is very likely to be the other way around.

On the second point, there is no evidence provided that larger operators use their control of sites to disadvantage smaller competitors. This view is not supported by the evidence provided above, on the extensive efforts undertaken by Vodacom to share its facilities and on the number of site access requests which Vodacom has accepted. In addition, the Facility Leasing Regulations (and Chapter 8 of the ECA) set stringent requirements which prevents licensees, including larger operators to discriminate against other access seekers, including smaller operators.

Indeed, as a consequence of its effort to accommodate sharing, Vodacom's sites are relatively full. As [redacted] require an upgrade to accommodate sharing or further sharing of the site.

[145] Which, when corrected, would likely call into question even the existence of the relationship posited by ICASA

Figure 28: Vodacom's distribution of sites by available capacity



3. Proposed remedies

In terms of potential remedies for site access, ICASA proposes to re-draft the Facilities Leasing Regulations, together with publishing more detailed guidelines on:

- Publishing site information online;
- A time limit for the consideration of requests;
- Rules about when sharing should be considered technically and economically feasible;
- Preventing parties from indefinitely reserving space on a mast for their own equipment; and
- Accounting separation.

As clearly shown in Section 5.2.3, Vodacom supports site-sharing. Indeed, Vodacom already embraces infrastructure sharing in different ways:

- Vodacom shares information on sites via its online portal developed to facilitate site sharing and has a transparent process to handle applications and report on progress.
- Vodacom introduced new forms of sharing, like DPS, in order to make sharing possible on sites where passive sharing is not possible.

To this end, Vodacom welcomes any changes in the facilities leasing regulations aimed at enhancing coordination in the roll-out of new sites, without constraining infrastructure-based competition and investment. However, we consider that ICASA has omitted an important and obligatory exercise, which is identifying the market failure that the obligations try to remedy. Before considering whether any additional remedies for site access are required, ICASA should first:

- Assess the effectiveness of the existing Facilities Leasing Regulations; and

- Consider whether it can simplify, improve and expedite regulatory processes and approvals, such as processing of municipal leases, EIAs and wayleaves. As ICASA itself recognises, these processes can lead to substantial costs and delays in mobile network roll out.

Further, ICASA has not assessed the impact of the additional obligations it has proposed. In particular,

- Limitations on reserving capacity may create issues for the roll-out of new technologies and so have a negative impact on investment; and

- The costs of accounting separation will likely outweigh the benefits.

3.1 ICASA deviates from the ECA and best practice by not identifying market failures

Under the ECA and best practice elsewhere,[146] any remedies imposed have to be targeted at the market failures identified and be proportionate. As already noted, the identification of market failure is a statutory prerequisite for intervention. However, contrary to this principle, beyond referring to the *"observed impediments to competition"*[147], ICASA does not identify any specific market failure and does not provide any justification for the proposed remedies. This results in ICASA proposing remedies which are not based on real problems observed in the market and likely to result in more costs than benefits, such as is the case with ICASA's proposal to impose accounting separation.

3.2 Limitations on reserving capacity may create impediments to the roll-out of new technologies, especially when spectrum assignments are delayed

ICASA is proposing to *"preclude the indefinite reserving of space on masts for the incumbent's equipment and facilitate the quicker roll out of new sites by smaller operators"*.[148] Vodacom does not unjustifiably or indefinitely reserve mast space on towers. Instead, it undertakes a due diligence process with every application for a new installation. This is especially prevalent in situations where the tower wind-loading capacity is at or close to the maximum. Having said that, Vodacom needs to reserve space on masts for the deployment of 5G which is due to the delays in the making available and allocating of HDS.

Not allowing MNOs to reserve space, whilst spectrum has not been assigned and available to be used, would likely impede MNOs from upgrading their sites, constrain infrastructure-based competition, and deter investment.

3.3 The costs of accounting separation may outweigh the benefits

ICASA is also proposing an accounting separation obligation. It is not clear to Vodacom, though, how this remedy can be implemented in a context where sub-national markets have been defined. Accounting separation is also likely to be costly to implement as operators do not necessarily track revenues and costs in a way that would readily align with the regulatory accounts required. Developing and carrying out the necessary accounting processes represents a significant administrative burden, especially if a regional breakdown is also required.

Indeed, it may take several years from imposing the remedy to produce a first set of accounts, depending on the detail of what is required - including any geographic splits, whether reports just need to be for overall markets or services as well, the standard to which accounts are audited and so on. In the fixed sector, for example, it usually requires a minimum of two years to produce separate accounts.

[146] For example, under the European Regulatory Framework
[147] Discussion Document, paragraph 128
[148] Discussion Document, paragraph 128

Additionally, any accounting separation exercise will have to rely on cost allocations that are inherently imperfect and may give a misleading picture about the finances of a particular business unit. This is especially true in the long-term, if regulation sets out a particular approach to cost allocation, but the cost structure of the business changes over the years.

F. Upstream market 3: Roaming services

In this section, we consider ICASA's Roaming services market analysis. In summary, Vodacom is of the view that the roaming service market is competitive:

- There is already strong competition between Vodacom and MTN to provide roaming services, which Telkom has itself recognised. Vodacom and MTN both have over 99% 3G population coverage and Vodacom proposes to achieve 96.8% coverage with average downlink speed of 30Mbps (and 99.78% basic data coverage), within five years of the date at which the sub-1GHz spectrum is available for deployment.

- Competition for roaming services is likely to increase on a forward-looking basis due to a number of factors:

  - The recent network sharing agreement between MTN and Cell C, which will allow Cell C to offer widespread roaming services;

  - The recent agreements relating to network sharing between Vodacom and RAIN/Liquid, and MTN and Liquid, which should allow RAIN/Liquid to offer more widespread roaming services;

  - The introduction of the WOAN, with ICASA itself acknowledging in its IM that the WOAN will only offer wholesale services including roaming services; and

  - The upcoming spectrum assignments, which should help operators' to increase their own network coverage.

- It is not necessary for all operators to have exactly the same level of geographic coverage and quality in order to have effective competition. Some differentiation on coverage and quality may actually be in consumers' interest since some consumers will value coverage more than others. Indeed, this was one of the reasons why the Australian Competition and Consumer Commission (ACCC) decided not to regulate access to national roaming services.[149]

- Roaming regulation has the potential to undermine investment incentives, as any investment made by an operator will also benefit its competitors. This risk is especially relevant in the case of the deployment of the latest technologies, such as 5G. Operators may be reluctant to roll out 5G if they are obliged, from the onset, to provide access to the service.

Figure 29 below highlights key areas where, in relation to this market, 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.

[149] ACC Domestic mobile roaming declaration inquiry, Final report, available at: https://www.accc.gov.au/system/files/Mobile%20roaming%20declaration%20inquiry%20final%20report_0.pdf

Figure 29: Areas where ICASA has deviated from the ECA and best practice

	National Roaming market analysis:
Product market definition	• Product market definition is not consistent with ICASA's view that national roaming is mostly relevant in areas where entry is not feasible. ICASA should consider defining a product market for "roaming services in remote areas".
Geographic market definition	• Does not justify properly the choice of the geographical unit over which to analyse the market. • Does not consider the extent to which competitive conditions in defined sub-national markets are appreciably different.
Assessment of effectiveness of competition and SMP	• Ignores evidence that shows that the market is already competitive. • Ignores expected market developments (including its own process to establish a WOAN) which will make the market even more competitive. • Assessment is primarily at national level and therefore not consistent with geographic market definition. • Overstates Vodacom's market share, particularly in more urban areas due to network densification. • Comparison of roaming charges with retail prices is misleading • Overstates the importance of National Roaming as a means to compete in the mobile market (given the low share of roaming in total traffic).
Remedies	• Does not identify clear market failures. • Deviates from best practice, by not defining a clear time limit for the national roaming obligations proposed or, at least, a process for removing the obligations. • Proposes roaming remedies in urban areas, which is unreasonable. • Could have a deleterious effect on investment.

1. Market definition

ICASA defines a separate market for National Roaming services, downstream of the market for site access. It considers that *"while site access and infrastructure sharing can be a substitute in certain instances it is unlikely that in response to a SSNIP an operator would shift from roaming to infrastructure sharing"*.[150] ICASA then groups together, in the same market, roaming services offered over all technologies (i.e. 2G, 3G and 4G), on the basis that they are likely to have similar market dynamics.

With regard to the geographic scope of the market, ICASA considers that the market for roaming may be as narrow as each site and considers geographic markets that are at least as narrow as individual municipalities.

Vodacom concurs with ICASA that there is a separate market for national roaming (distinct from the upstream market for site access services and the downstream markets for MVNO access and APN

[150] Discussion Document, paragraph 142

services). However, in Vodacom's view the relevant product market should be defined as "roaming services in remote areas". This is because ICASA should not impose roaming regulation in areas where there is infrastructure competition (and deployment is viable), especially in urban areas[151]. Therefore, it can already exclude such areas from its analysis at the product market definition stage.

Within this narrower product market, Vodacom considers that there may be scope for the identification of more granular geographic markets. However, a proper assessment of the geographic scope of the market would require ICASA to undertake the steps identified in section B.

1.1 Vodacom agrees that there is a separate market for National Roaming

Vodacom concurs with ICASA that there are grounds for defining a market for roaming services that is separate from the markets for i) site access and ii) MVNO and APN services. Section E details the reasons why we consider national roaming and site access are in separate markets.

Regarding MVNO and APN services, whilst the price structure for national roaming may be similar to that of MVNO and APN services, the latter services serve very different purposes to roaming e.g. MVNO access tends to be a nationwide service, whereas roaming is primarily used by a network operator to fill gaps in its own network coverage, whist building a national network. In addition, roaming services can be used as an input for providing MVNO services, which suggests that roaming services are upstream of MVNO access, and therefore in separate markets. Indeed, ICASA implicitly accepts this, as the WOAN will make use of both national roaming[152] and its own network to provide MVNO services. Similarly, Cell C uses roaming services from Vodacom as an input for providing its own MVNO services.

1.2 The product market for National Roaming should be restricted to "remote areas"

In its Discussion Document, ICASA clearly states that, consistent with the approach taken by many regulatory authorities and policy makers around the world, the main benefit of roaming services is to provide coverage in areas where own-network roll-out is not viable:[153]

> *"The benefits of national roaming are primarily facilitating market competitiveness and providing coverage in areas in which infrastructure investment is too costly or is not feasible."*

Indeed, the above statement is consistent with the position ICASA took in its review of the mobile termination market, where it considered the use of National Roaming services by smaller operators only in areas where infrastructure investment is too costly.

> *"We propose to assume that the hypothetical small mobile operator makes use of national roaming to extend its coverage beyond that of its own network"*[154]

However, despite this, ICASA defines a broad National Roaming market, including areas where national roaming is not required, e.g. in areas where there are at least two operators covering an area. Vodacom does not believe that this is appropriate, because competition between Vodacom and MTN for national roaming services is already strong[155]. Instead, we consider that the scope of the market should be confined to those parts of South Africa which could be considered natural monopolies on a forward-looking basis, i.e. where entry is not economically feasible. As such, Vodacom proposes to define the

[151] ICASA's analysis significantly overstates the market share of Vodacom in urban areas, as explained in section F2.2
[152] For a limited period of time, whilst it deploys its own network
[153] We note that in many cases, regulators have gone further and restricted roaming services such that any (regulated) roaming service is only available in certain areas and on a time limited basis, whilst a new entrant deploys its own network. This is because regulating roaming services can also have negative consequences for investment and hence infrastructure-based competition
[154] ICASA, "*Briefing Note on Issues Raised by Operators in their Submissions of 30 November 2017*", Date of issue: 13 February 2018. Section 2.2.3, page 6 of 12
[155] As explained in Section F2.1

market in question as the market for **"roaming services in remote areas"** where the deployment of additional network infrastructure is likely not feasible. This means the market should not include roaming services in those parts of South Africa where entry is likely or has already occurred.[156]

Furthermore, before identifying the potential areas where roaming may be necessary, it is important that ICASA first assesses whether the benefits from roaming regulation, taking into account the level of competition in the market on a forward-looking basis, would outweigh the adverse impact on investment incentives.

Population density is likely to be a key determinant of the likelihood of entry in a given area. In areas with relatively low population density, the minimum base station configuration required to provide services will be sufficient to serve all traffic generated within the associated coverage area. Without sufficient traffic to justify investment in further capacity, it is inefficient for a second operator to roll out in the area (which always includes a level of fixed costs) – i.e. these could be considered natural monopolies. It is only in these areas where roaming regulation may be justified, although, as stated above, ICASA would still need to ascertain that the benefits from the regulation outweighed the adverse impact on investment incentives. We note that in Kenya, the regulator has restricted the regulation of national roaming services to the 7 most rural counties in the country.[157]

When assessing whether there is significant population density / traffic to justify roll-out for a second operator, ICASA should consider the most efficient option for a potential roll-out, i.e. it should take into account the impact on the costs of network roll out following the forthcoming assignment of additional HDS and the latest infrastructure sharing agreements.

1.3 There may be scope for having sub-national markets for National Roaming services

ICASA states that *"the market for roaming may be as narrow as each site"*[158] and considers *"markets that are at least as narrow as the local and metropolitan municipal levels."*[159]

However, as stated in section B, ICASA's approach to identifying sub-national geographic markets does not follow best practice. This is because, among other reasons, ICASA fails to discuss fully the appropriate geographic unit over which it should make its assessment and the criteria to aggregate these units into broader geographic markets.

In Vodacom's view, the relevant product market for National Roaming should be restricted to "national roaming in remote areas". This already has a geographic element to the market definition, but assuming ICASA adopts this position, there could still be merit in ICASA sub-dividing these remote areas into different geographic markets, if the identity of the network provider varies. If ICASA does not accept Vodacom's proposed approach towards the product market definition for roaming services, then it becomes essential for ICASA to define separate geographic markets and to distinguish between areas based on the level of actual and prospective infrastructure competition in areas.

[156] It could also be potentially argued that the national roaming service provided in non-remote areas is not a substitute of the national roaming service provided in remote areas
[157] Analysys Mason, *"Telecommunication competition market study in Kenya"*, Presentation to stakeholders and members of the public, 20 February 2018, Stéphane Piot, Philip Bates and Kerron Edmunson
[158] Discussion Document, paragraph 152
[159] Discussion Document, paragraph 152

2. Effectiveness of competition and identification of operators with SMP

Whilst ICASA recognises the dynamic nature of the market for roaming services, it considers there are ostensible indications that the market is not effectively competitive in some areas, highlighting:

- The existence of structural entry barriers in rural and remote areas;
- The high level of concentration observed in some areas, with Vodacom and MTN the only operators providing coverage in certain rural areas;
- High historic and current prices for roaming services, compared with retail mobile prices and modelled network costs; and
- The existence of only limited countervailing buyer power due to the high costs of self-build, contractual terms and the limited number of providers.

The above, combined with an assessment of market shares in each municipality, leads ICASA to conclude that *"MTN is dominant (has a market share of 45% or more) in 34 local and metropolitan municipalities, Vodacom is dominant in 86 and MTN and Vodacom both have a market share exceeding 45% in 15 municipalities (...). No operator has a dominant market share in 99 municipalities."*[160]

Vodacom does not, for a number of reasons, agree with ICASA's assessment. Again, Vodacom emphasises that the statute requires that the assessment of the effectiveness of competition and SMP should be two distinct steps.[161] In addition, Vodacom has the following concerns with ICASA's analysis of the effectiveness of competition for roaming services:

- It ignores the intensity of competition between Vodacom and MTN to provide roaming services, with MTN currently being considered the best mobile network in South Africa;
- On a forward-looking basis, the level of competition for roaming services will be even stronger than ICASA has set out;
- The market share calculation for roaming services is fundamentally flawed;
- The implications of ICASA's SMP assessment raise a number of concerns; and
- The comparison of roaming prices with retail prices is misleading.

2.1 The market for National Roaming is already competitive and will become more competitive in future

ICASA considers that *"there is evidence that the market has characteristics which are indicative of a lack of competition"*[162], including alleged issues with regard to historical prices and quality of service.

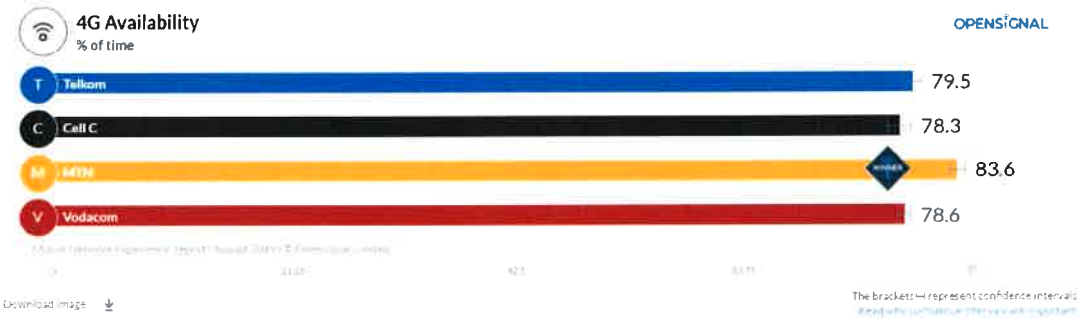
Vodacom disagrees with ICASA's view and considers that there are a number of reasons to conclude that the national roaming market in South Africa is **already** competitive. This is demonstrated by the recent competition between Vodacom and MTN to offer roaming services and network sharing agreements to access seekers.

[160] Discussion Document, paragraph 184
[161] Discussion Document, paragraph 165
[162] Discussion Document, paragraph 180

MTN has a widespread and high quality mobile network

MTN is very well positioned to provide national roaming services, with Vodacom and MTN competing strongly on network quality and coverage. Whilst Vodacom initially led the race for 4G coverage, MTN has now overtaken Vodacom, with MTN having reached 95% 4G population coverage. This is also consistent with Figure 30 below from Opensignal, which shows that MTN's subscribers have access to 4G for a greater proportion of the time than Vodacom subscribers. Further, both Vodacom and MTN have 3G population coverage that is above 95%.

Figure 30: 4G availability



Source: Opensignal

MTN's strong network performance is also shown through the Mobile Network Quality Report for 4Q2019 published by MyBroadband Insights. This shows that MTN currently has the best mobile network in South Africa, with the highest upload and download speeds and also the lowest latency.

Figure 31: Mobile network rankings in South Africa

Network Operator	Download Speed (Mbps)	Upload Speed (Mbps)	Latency (ms)	Network Quality Score
MTN	40.64	14.65	32	**9.85**
Vodacom	32.23	11.76	36	**8.01**
Rain	16.44	8.44	30	**5.58**
Telkom	21.63	4.61	40	**5.32**
Cell C	16.48	8.13	44	**4.91**

Source: https://mybroadband.co.za/news/telecoms/334966-the-best-mobile-network-in-south-africa-3.html

MTN's network coverage and performance levels means that it is a strong competitor to Vodacom for providing roaming services. As a consequence, Vodacom has to offer attractive prices when competing with the superior network performance that MTN can currently offer to roaming customers. This is reflected in the recent respective bilateral negotiations both Vodacom and MTN held in order to offer national roaming services to Cell C. Standard economic theory suggests that where there are homogenous products, prices may be set at the competitive level even if there are only two operators.[163]

[163] This is a well-known result for Bertrand competition between two players with homogenous products

Recent negotiations prove that Vodacom and MTN compete aggressively for the provision of national roaming

Given the size of national roaming contracts and the fact that they usually span several years,[164] competition to provide services can be intense.[165] This has resulted in significant improvements in national roaming contracts, both in terms of price (see below) and non-price terms. For example, the latest national roaming contracts include access to 2G, 3G and 4G and offer improved times for the provision of services.[166]

Below we provide a more detailed picture of the national roaming agreements between Vodacom and Cell C/Telkom.

Cell C

When Cell C entered the market, it could choose to roam on Vodacom's and/or MTN's network, as both operators were well positioned to offer national roaming services. Cell C finally decided to go with Vodacom after four months of intense competitive negotiations because, according to Cell C's CEO at that time (Talaat Laham), Vodacom's deal offered Cell C superior terms, which matched its business plan requirements.[167] Since first entering a roaming agreement with Vodacom, Cell C frequently threatened to move to MTN. Indeed, using its bargaining power, Cell C was able to renegotiate its roaming agreement with Vodacom on several occasions, using the fact that it had the option of switching to MTN as leverage.

Competition to provide roaming services resulted in Cell C switching from Vodacom to MTN in 2018, which allows it to roam on MTN's 3G and 4G network (whilst still using Vodacom's network for 2G services). Even more recently, Cell C has reached a network sharing arrangement with MTN[168]. Again, Vodacom and MTN competed strongly for Cell C's business, with Cell C deciding to accept MTN's proposal. The above also undermines ICASA's statement that multi-year contracts act as a barrier to entry, increasing switching costs. Despite the existence of multi-year contracts, Cell C continuously engaged in negotiations with MTN during the currency of its Vodacom contract, which served to improve its contract terms with Vodacom.

ICASA also argues that vertically integrated operators have incentives to set high roaming prices as *"by maintaining high roaming prices they are able to ensure that retail competitors have higher costs, softening competition in the retail market into which they are vertically integrated."*[169] Again, however, this does not reflect actual experience in the South African market, where roaming prices have reduced significantly over the last 15 years. For example, Cell C's per MB roaming charge paid for 2G services decreased by 85% between FY06/07 and FY18/19; and, by 46% between FY13/14 and FY18/19 for 3G services. As we explain below, the comparison of national roaming prices with retail prices for mobile services is misleading, given that roaming services are mainly used in more rural areas where network costs are higher, and as a one-sided backup service.

[164] Vodacom's revenues from Cell C's national roaming agreement represented 3% of total Vodacom's service revenues in FY17/18
[165] This is usually known as "competition for the market"
[166] For example, Vodacom reduced the time period to respond to Cell C's requests to activate / deactivate roaming in given "LAC" areas. Location Area Codes (LACS) are the geographic units in which Vodacom / Cell C's roaming agreement was based on. These are a set of base stations that are grouped together to optimize signalling
[167] https://www.fin24.com/Companies/Cell-C-Vodacom-go-a-roaming-20010709
[168] https://www.iol.co.za/business-report/companies/cell-c-and-mtn-conclude-national-roaming-agreement-37405021
[169] Discussion Document, paragraph 180

Telkom

In a similar vein, Vodacom recently signed an agreement with Telkom, who previously had used national roaming services from MTN. Compared to its previous arrangements with MTN, this roaming deal offers Telkom access to 4G services and seamless handover.[170]

Indeed, its response to the CC's provisional findings report in respect of the data pricing inquiry, Telkom stated that *"Telkom's recent experience negotiating with Vodacom, compared to its previous experience with MTN, suggests to Telkom that there is significantly more competition in the wholesale market for national roaming than before".*[171]

RAIN also provides national roaming services over its 4G network

In addition to Vodacom and MTN, RAIN provides another alternative network for access seekers looking to use roaming to offer retail 4G services. RAIN currently provides LTE (4G) roaming to Vodacom on a non-exclusive basis.

On a forward-looking basis, the level of competition will be even stronger

ICASA's forward-looking assessment of roaming acknowledges some of the recent dynamics. However, there are a number of key changes expected in the market which will most likely intensify the level of competition for roaming services, which have not been taken into account by ICASA.

- **The assignment of additional HDS**. The planned assignment of a significant amount of spectrum will allow MNOs to improve their coverage and quality in a cost-effective way. Also, as part of this, ICASA proposes to impose strict coverage obligations (100% population coverage) on three licensees (those who acquire lots B, C and D).[172]

- **The rapid rollout of Telkom's mobile sites**. Telkom, through its Gyro unit, is expanding its number of mobile sites very quickly (see Section B). The DPS agreement that Telkom has signed with Vodacom and which covers 2,500 sites will further contribute to its aggressive expansion. This means Telkom will then be in a position to also offer roaming services in more areas in future.

- **The launch of the WOAN**. As detailed in section B, ICASA has itself stated in its IM for spectrum that the WOAN will offer both national roaming and MVNO access. Whilst in the short run, the WOAN may not be in a position to offer roaming services at a national level, ICASA should at least consider the impact of the WOAN on the provision of national roaming in the areas where it is expected to deploy its own network over the next 2-5 years.

- Similarly, **Liquid Telecom**, with its current spectrum assignments in the 1800MHz and the 3500MHz band, **is in a position to provide national roaming for 4G and, in the near future, 5G services.** As noted in Section B:

    - Liquid has signed a network sharing agreement with MTN, which allows it to deploy its 1800 MHz spectrum on MTN sites, facilitating the rollout of its own wholesale 4G network. Liquid also provides roaming services and ICASA itself pointed out to the Competition Commission that Liquid will operate a 4G open access network.

[170] See https://techcentral.co.za/vodacom-telkom-on-track-for-roaming-move-from-mtn/89543/
[171] Paragraph 114 of Telkom's response: http://www.compcom.co.za/wp-content/uploads/2019/08/2019.07.08-Telkom-NON-Confidential-version.pdf
[172] Vodacom does not agree with these coverage obligations. It has commented on how to make these coverage obligations more realistic in response to ICASA's IM

"Para 408 – the Authority agrees with the Commission that "in South Africa only two networks, Vodacom and MTN, have national coverage. Thus, the provision of wholesale roaming services in South Africa is highly concentrated.". However, on a forward-looking basis the Authority is of the view that this might change given non-exclusive roaming agreement between Rain (host network) and Vodacom as well as Liquid Telecom's open access 4G network, which is scheduled to be launched soon."[173]

- Liquid also recently signed a network sharing agreement with Vodacom, covering its 3500 MHz spectrum. This will allow Liquid to roll out a 5G network and offer wholesale services to access seekers on an open access basis.

2.2 ICASA should reconsider its market share analysis

The market share analysis is particularly misleading in urban areas

ICASA measures market shares for national roaming based on the number of sites within a municipality on which a mobile network operator transmits services. However, this may not be a reliable proxy for the availability of national roaming services in certain areas because:

- ICASA's approach does not attempt to distinguish between i) coverage sites and ii) capacity sites, even though ICASA clearly states that the main benefit of roaming services is to provide coverage. As a result, ICASA's approach will over-estimate the market shares of network providers, such as Vodacom, who have densified their networks.

- In some areas there may be sites but no or limited national roaming available due to capacity constraints on the sites.

- Using sites is also misleading as it is possible that one operator may be using a single high capacity site to offer roaming service in a given area, while another uses multiple sites to offer the same roaming service.

Vodacom is particularly concerned about the use of ICASA's approach to market shares in urban areas, where there is likely to be more network densification. This may yield the perverse result that Vodacom has SMP in some areas for roaming services despite three or more MNOs having coverage in that area. This result would be incorrect given that one of the reasons why Vodacom has had to densify its network is due to spectrum constraints. ICASA's approach for measuring market shares may be a reasonable proxy (albeit still imperfect) for remote areas, as most of the sites in these areas will be used for providing coverage.

Figures 32 and 33 below illustrate the difficulty with how ICASA currently measures market shares for roaming services. The first example shows Vodacom's sites around the Soccer City Stadium. Whilst Vodacom deployed 14 sites to manage congestion in large events, the area of the stadium could have been covered with just a single site.

[173] Comments by the Independent Communications Authority of South Africa on the provisional findings and recommendations on the data services market inquiry by the Competition Commission

Figure 32: Vodacom's site deployment in Soccer City Stadium

The second example shows Vodacom's coverage in a shopping mall in Century City. Amongst the 45 Vodacom sites, only 6 macro sites are needed to cover the area. The remaining 39 micro sites are needed to provide additional capacity and localized coverage in specific areas of the shopping mall. In contrast, however, a smaller operator may well cover the shopping mall with a lower number of sites.

Figure 33: Vodacom's site deployment in a shopping mall in Century City

If ICASA does not agree with Vodacom's proposed product market definition, then it will need to remove any capacity sites from its estimation of market shares to avoid the problems described above.

ICASA needs to reflect the recent wholesale agreements in its analysis of market shares

ICASA's market share calculations should also take into account the impact that the recent network sharing agreement between Cell C and MTN will have on Cell C's coverage. This is because, under this agreement, Cell C could provide national roaming services in all the areas covered by the agreement.

More generally, the estimation of market shares for national roaming should consider the impact of all existing wholesale agreements. This includes the agreements between Telkom and Vodacom (DPS), Vodacom and RAIN (network sharing), Vodacom and Liquid (network sharing) and MTN and Liquid. As

a consequence of these agreements, Vodacom would expect that the number of sites on which Telkom, Cell C, RAIN and Liquid transmit services should be greater than those considered by ICASA in its Discussion Document.

2.3 The implications of ICASA's SMP assessment raise a number of concerns

The conclusions are at odds with Vodacom's position at the national-level

ICASA finds that MTN is dominant in 34 local and metropolitan municipalities, whilst Vodacom is deemed to be dominant in 86.[174] Vodacom has not had access to ICASA's underlying calculations. However, notwithstanding Vodacom's reservation with the use of sites as a proxy for market share, as discussed above, Vodacom is surprised that it is deemed to have SMP in so many more municipalities than MTN, given that both have a similar number of sites on a national basis.

Whilst Vodacom does consider that there could be a case for sub-national markets for roaming services, national market shares may provide some insight into what the results may look like, on

[redacted]

However, Vodacom reiterates that it does not consider the number of sites transmitted on is an appropriate proxy for coverage and providing roaming services. As explained above, this approach will provide an over-estimate of Vodacom's market share as it ignores the impact of available capacity and excludes the sites on which RAIN and Liquid transmit and the sites covered by the new network sharing agreement between MTN and Cell C. It also fails to distinguish between i) coverage sites and ii) capacity sites.

Figure 34: Site roll-out by different operators (Q2 FY 19/20)

[redacted]

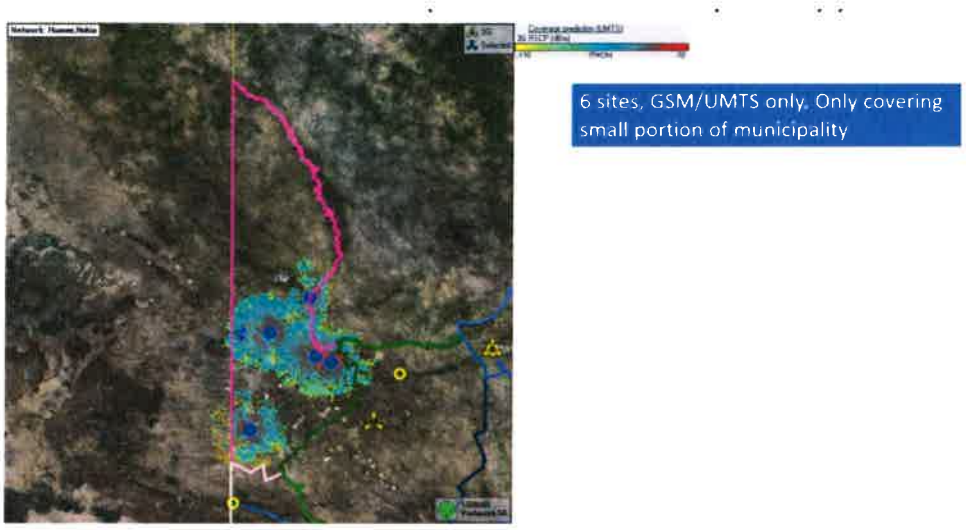
[174] Discussion Document, paragraph 188

ICASA appears to have concluded that Vodacom / MTN have SMP in a number of areas where there is competition and deployment is viable, which could lead to the imposition of remedies in such areas. This would be unreasonable given ICASA's statement that the main benefit of roaming services is in remote areas. This is linked to the way in which ICASA measures market shares for roaming services, which results in operators having SMP in urban areas if they have densified their networks more than other operators, as illustrated above.

Vodacom only has limited coverage in some municipalities in which it is deemed to be dominant for the total area of the municipality

Finally, in some of the municipalities where Vodacom has been found to be dominant for the total area of the municipality, Vodacom only covers a very small fraction of the area with a low number of sites. This is, for example the case of the Mier municipality, on the Namibian border. Vodacom has only 6 sites in this municipality, covering a very small fraction of the area.

Figure 35: Vodacom's sites in Mier Municipality

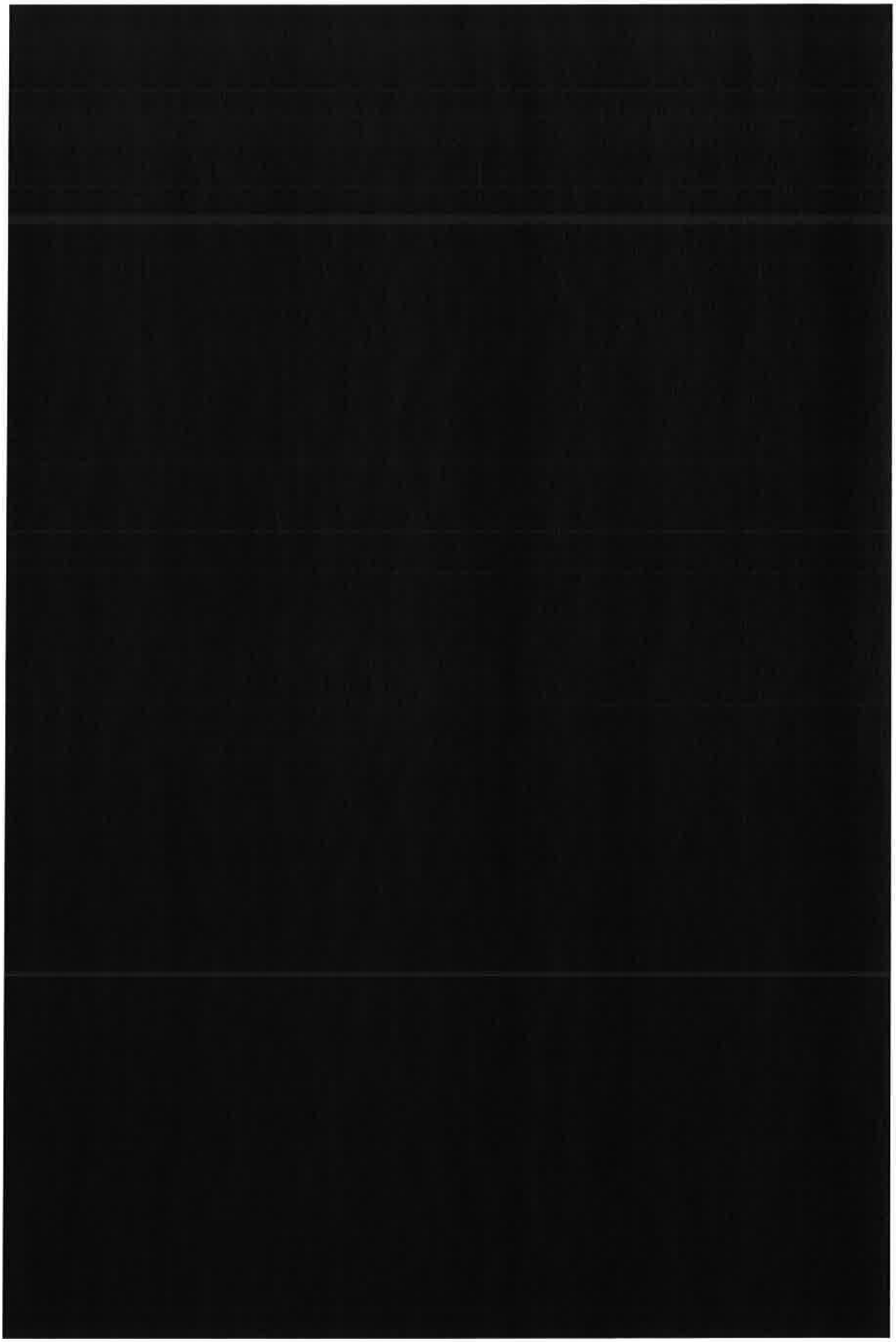


2.4 ICASA's comparison of roaming prices with retail prices is misleading

ICASA considers that national roaming prices are high compared with retail prices, although it does not provide any data for that comparison. Based on this it concludes that *"this is a potential explanation for the market share dynamics apparent in certain geographic regions"*.[175] Vodacom considers that such a comparison is inappropriate, and the conclusion does not follow from it.

Operators select the areas where they use roaming services and the areas where they rely on their own network. Roaming operators are likely to have a higher incentive to roam in areas where network build costs are higher (e.g. low-density areas with limited traffic) – so called "cherry picking". To limit this behaviour, operators usually impose a floor charge in order to offer lower national roaming prices. Notwithstanding the floor charge, Cell C and Telkom use national roaming services in a selective way, mainly in the areas where their traffic is low (synonymous with the "cherry picking" behaviour described above). This is shown in Figure 36 below, which depicts Cell C's roaming traffic across the different types of cell sites. From this, it is clearly evident that Cell C relied more heavily on roaming in low traffic density sites, where the costs are higher.

[175] Discussion Document, paragraph 169



A similar picture emerges from ICASA's BU-LRIC model, which provides a breakdown of national roaming traffic by geotype for a small operator for 2020. This is shown in Figure 38 below – the results are consistent with the cherry-picking behaviour described, as the model shows that a large majority of roaming data traffic goes through rural sites (which are likely to be low traffic sites).

Figure 38: Distribution of national roaming data traffic by geotype

Geotype	NR 2G data traffic	NR 3G data traffic	NR 4G data traffic	All data traffic
Dense Urban	0.2%	0.4%	NA	0.4%
Urban	1.2%	2.2%	NA	2.2%
Suburban	14.6%	26.2%	NA	25.5%
Rural	84.0%	71.1%	NA	72.0%
Total	**100%**	**100%**	**NA**	**100%**

Source: ICASA's BU-LRIC model

Because of the cherry-picking behaviour, national roaming prices cannot be compared with retail national prices. This is because national roaming prices are set taking into account a higher reliance on national roaming in high cost areas. In contrast, retail prices are generally based on the average costs the mobile licensees face across the whole of South Africa (with the exception of specific regional offers), including low cost and high cost areas.

Roaming costs represent a small fraction of a roaming operator's costs

Roaming traffic represents only a small fraction of the total traffic carried by the smaller operator. For the case of mobile data traffic services, ICASA's BU-LRIC model[176] considers that the proportion of its national roaming data traffic (out of it total data traffic) for the smaller operator is around 4-5% for the period 2017-2020. This implies that the smaller operator, for most of its traffic, faces its own network costs, with the cost of traffic being driven by roaming charges in only a small number of (generally low traffic) areas. This means that smaller operators are also not dependant on roaming services to compete in the market.

3. Proposed remedies

ICASA is proposing:[177]

- To mandate that parties who are dominant in particular geographic areas provide a national roaming offer to other players;
- Regulations to facilitate roaming; and
- Accounting separation.

Vodacom considers that there is no need for any regulation of roaming services at all given the existing level of competition in the segment (which will further intensify in future), especially if there is to be the proposed regulation in the site access market.[178] Furthermore, roaming regulation is usually imposed to

[176] As expressed before in this submission, Vodacom, nonetheless, has expressed concerns about ICASA BU-LRIC model
[177] Discussion Document, paragraph 188
[178] Although Vodacom does not support the need for regulation of site access, it does agree that such regulation clearly negates the need for any intervention in the market for APN and MVNO services. Indeed, ICASA should also apply this principle to consider the extent to which its proposed remedies for site access mitigate the need for any regulation of roaming services

support new entrants in the market. As Telkom and Cell C are now established players in the mobile services market, such intervention in the market is unnecessary.

However, if ICASA does decide to maintain its proposal to impose some non-price regulation of roaming services, then the scope of such regulation should be restricted as follows:

- It should only apply to the remote areas consistent with the scope of the relevant market, i.e. areas which could be considered as natural monopolies on a forward-looking basis;
- It should be temporary in nature;
- It should only apply to data services, given that ICASA's market review is focused on data services and there is no basis suggested for expanding any remedy beyond this focus; and
- It should not apply to the latest technologies e.g. 5G, to avoid deterring investment incentives.

ICASA should also be mindful that even limited remedies could have detrimental effects on investment and competition, while there may be limited benefit created for established players like Telkom and Cell C. Furthermore, Vodacom considers that the costs of imposing an accounting separation obligation in specific geographic areas are larger than the potential benefits (see Section E).

3.1 Regulating roaming services could damage incentives to invest and reduce differentiation

Regulating national roaming services could have a damaging impact on investment. This is because, where there are competing networks, operators would typically have an incentive to differentiate themselves by seeking to improve their services and introduce new technologies in advance of their rivals. However, with roaming regulation in place, competitors would also be able to immediately benefit from network improvements, reducing the ability of network operators to make a return on their investments. This could remove the race to roll-out new technologies. Further, the access seeker may also have limited incentive to roll-out its own network if it knows that it could just rely on a regulated roaming service, and thereby avoid the risks of making its own investments. As a result of these adverse impacts on incentives to invest, the retail customers of both the host networks and the potential access seekers would be harmed.

Indeed, BEREC cautions against permanent regulation of roaming services and points to the importance of preserving investment incentives:

> *"...subject to a case-by-case analysis, roaming is likely to not be in line with the objectives of infrastructure-based competition for the end user's benefit (including investment, innovation and competition between actors) and efficient spectrum management and usage. Hence, roaming for an undetermined time period could be envisaged only in those areas where infrastructure-based competition is infeasible and where investment incentive is very limited. In particular,* ***roaming could strongly reduce the incentive to invest when central dimensions of competition are affected.***"[179] [Emphasis added]

[179] Page 20, BoR (19) 110, available at: https://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/8605-berec-common-position-on-infrastructure-sharing

More generally, BEREC considers that

> *"when sharing is a result of regulatory obligations, competent authorities should carefully assess whether it leads to a loss of competitive advantage for the operator that was the only one covering that area, otherwise it would not be rewarding the risk taken by the operator."*[180]

Any regulation should only be imposed on a temporary basis, typically to support new entrants

In view of the above, regulators have avoided imposing stringent regulations on national roaming services, with price regulation being especially infrequent. In those cases of international examples of roaming obligations being imposed (usually to support new entrants), these obligations often have sunset clauses (i.e. time limits) to ensure that the new entrant has incentives to invest in its own network.

- In France, ARCEP (the telecommunications regulator) proposed to gradually terminate all roaming agreements by 2020 in order to incentivise infrastructure investment by the operators.[181] ARCEP argued that Iliad, the new entrant in the French market, had reached its coverage target and its roaming deal with Orange could delay further infrastructure investment in 4G.[182]

- In the UK in 1999, O2 and Vodafone were required to negotiate roaming agreements with access seekers on reasonable terms and conditions, with Ofcom having the power to intervene in the event of a dispute. In 2003/04, Ofcom removed the national roaming obligation, arguing that the wholesale market for national roaming was functioning well without interventions.[183]

- In its 2018 market review, the Communications Authority of Kenya (CA) recognised the differences in the competitive conditions for the provision of national roaming across geographic areas by proposing to restrict the obligation to provide national roaming access to the 7 most rural counties for a period of 5 years.[184]

- Figure 39 below includes a number of additional cases in which national roaming obligations have been imposed on a temporary basis. The period ranges from 2 years in Bahamas to 9 years in Belgium, with most obligations lasting for around 5-6 years.

Figure 39: Limited duration of national roaming obligations

Notes:
1. In Colombia the national roaming regulation is not limited to 5 years, but the regulation is more stringent for new mobile licensees during a period of 5 years
2. Over the national territory and 60 months in areas not covered by the new operator.

[180] BEREC (2018) Report on Infrastructure Sharing, page 17
[181] https://www.fiercewireless.com/europe/french-mobile-operators-signal-end-to-national-roaming-agreements
[182] https://www.fiercewireless.com/europe/arcep-seeks-end-to-france-s-mobile-roaming-and-network-sharing-deals
[183] Ibid
[184] Analysys Mason, *"Telecommunications competition market study in Kenya"*, Presentation to stakeholders and members of the public, 20 February 2018

3. Not a firm determination yet.

In some cases, the risks of national roaming regulation may outweigh benefits altogether

In Australia, the ACCC ultimately decided against imposing a regulated roaming service despite there being significant differences between the network footprints of the three MNOs present in the market e.g. Telstra had 4 times as many sites as Vodafone.[185] The ACCC found that regulation would not promote competition in the retail mobile services market to a significant extent. It argued that in Australia, geographic coverage was not the primary driver of competition, and it was not essential for MNOs to have equal geographic coverage to compete effectively in the market. At the same time, it concluded that regulation might reduce incentives for MNOs to differentiate their services, distorting long-term competitive dynamics.

> *"Networks that differ from each other in terms of coverage, technology and quality provide more choice for consumers and more competitive tension between operators. Declaration would have the effect, therefore, of reducing competition over this dimension of rivalry between MNOs such that it would be likely to distort long-term competitive dynamics and reduce incentives for MNOs to differentiate their services in this way."*[186]

3.2 If there were to be roaming regulation, it should apply only to data services and exclude new technologies

Given that ICASA's inquiry is focused on mobile data services[187], any national roaming remedies should only apply to data services and not to voice and messaging.

As discussed above, roaming regulation may stifle investment by limiting the benefits an MNO can reap from introducing new technologies. This is particularly the case for new technologies such as 5G, over which considerable commercial uncertainty remains. If roaming regulation were extended to new technologies like 5G, this may stifle operators' incentives to invest. This is for two reasons. First, under stringent national roaming obligations, operators will not be able to differentiate their offerings from those of their competitors. Second, having the possibility of providing 5G services via national roaming makes investment in infrastructure less attractive. As such, if ICASA decides to go ahead with roaming regulation (which Vodacom is against for all of the reasons set out above) there should be a delay before operators are mandated to offer roaming services on the latest technologies.

Despite the lack of spectrum, which has been a major impediment for the efficient rollout of 4G, South Africa has managed to achieve widespread 4G coverage, which suggests that investment in new technologies has worked relatively well absent regulation.[188] Telkom's rapid network rollout, facilitated by a vibrant market for site sharing shows, that it faces no barriers to expand its coverage, which makes national roaming regulation redundant and potentially harmful for competition and investment.

[185] ACC Domestic mobile roaming declaration inquiry, Final report, available at: https://www.accc.gov.au/system/files/Mobile%20roaming%20declaration%20inquiry%20final%20report_0.pdf
[186] ACC Domestic mobile roaming declaration inquiry, Final report, page 2
[187] ICASA states *"In the context of this being an inquiry into mobile broadband services, the Authority analyses data services in some detail."*
[188] It would have worked much better with the necessary spectrum

G. Upstream market 4: MVNO AND APN

As set out in Section F above, Vodacom agrees with ICASA's finding that MVNO and APN services lie outside (and downstream of) the market for roaming.

ICASA does not reach a conclusion on the precise market definition for MVNO and APN services, or on the effectiveness of competition in this market, but considers *that "the effectiveness of competition in this wholesale market is likely linked to ineffective competition upstream in site access and roaming."* [189] On this basis ICASA proposes not to impose any remedies on these services.

Vodacom agrees with ICASA in that there is no need to arrive at a firm view on whether MVNO and APN services constitute separate markets[190]; or to impose remedies affecting these services. It is important to bear in mind the jurisdictional point that ICASA cannot impose remedies in any market that it has not defined. Given that ICASA has not defined the relevant market, these services effectively lie outside of the scope of any potential interventions from the market review, based on the requirements of the ECA. Should ICASA change its view, stakeholders should be given another opportunity to respond.

Furthermore, Vodacom does not agree that there are competition concerns in the hypothetical market for MVNO and APN services. In particular, Vodacom disagrees with ICASA's assertion that the lack of supply of MVNO services in South Africa is suggestive of ineffective competition.

- Vodacom does supply MVNO services indirectly – Vodacom has hosted Cell C's MVNOs on its network through the national roaming service it has provided to Cell C.

- Vodacom's ability to offer MVNO services (as well as national roaming services) has been constrained by limited spectrum availability. This is in contrast to later entrants to the mobile market, such as Cell C and Telkom, who benefit from having significantly more spectrum per customer. This allows them to price more aggressively, making it difficult for Vodacom to win MVNO agreements despite actively conducting negotiations. As explained above, severe spectrum constraints, could lead to an MNO's only being able to offer access at terms which would be unattractive to an access seeker, as the cost of offering access in terms of lost retail subscribers (due to worsening network quality) would exceed the benefits, in terms of wholesale revenues/profits. This would again be consistent with outcomes that would be observed in effectively competitive markets, under spectrum constraints. Yet, ICASA seems to have mis-characterised the loss of MVNO opportunities to MNOs with spare capacity as a failure to supply, and hence an indication of lack of effective competition/SMP.

- [redacted]

[189] Discussion Document, paragraph 194
[190] As discussed in section 6, Vodacom does agree that National Roaming constitutes a separate market

Furthermore, Vodacom believes that the level of competition for MVNO services will intensify in the near future, taking into account:

- The competitive constraint that the WOAN will exert on the market – the launch of the WOAN is intended to enhance competition at the wholesale (and hence retail) level by giving access seekers an additional provider to turn to and MVNO access will be its core offering.

- The positive impact that the forthcoming spectrum award will have on this market. In particular, it will alleviate the capacity constraints currently faced by Vodacom. Hence, it will increase its ability to provide attractive MVNO deals.

Further, the ex-ante regulation of MVNO access services in not in line with international best practice. The European Commission eliminated the market for access and call origination on mobile networks from the list of relevant markets susceptible to ex–ante regulation in 2007. Currently, this market is not subject to ex-ante regulation in any country in the EU.[191]

Vodacom would also highlight that ICASA is proposing to attach an obligation on acquirers of HDS to each offer access to at least three MVNOs. Vodacom disagrees with this proposal as set out in its response to ICASA's IM on spectrum.

H. Duct and pole access for fibre backhaul

ICASA has overlooked the need to define a market for duct and pole access, which is a key input for fibre backhaul services (as well as fixed broadband services). ICASA should conduct an inquiry into duct and pole access as a matter of urgency, as part of its review of the mobile broadband value chain.

1. The lack of effective access to ducts and poles

Despite the Facilities Leasing Regulations, Vodacom has been unsuccessful in gaining effective access to the ducts and poles controlled by Telkom. Vodacom has already submitted a number of complaints to ICASA on this matter, so ICASA should already be well aware of the issues. The mandated access regime envisaged in the Facilities Leasing Regulations presupposes the existence of mutual cooperation amongst licensees with regards to the entering into electronic communications facilities leasing agreements

The key difference between duct and pole access relative to site access is that there are many different entities who control sites, which leads to effective competition for site access (see Section E). All entities who control sites have a market share considerably below 45% on a national basis. In contrast, Telkom controls the majority of the duct and pole network in South Africa. Therefore, in most cases, access seekers cannot credibly threaten to use the duct and pole network of another entity if Telkom is refusing to provide effective access to the ducts and poles that it controls. Other approaches for providing mobile backhaul, such as microwave, are also imperfect substitutes (see below). In addition, ducts and poles are a bottleneck for technical reasons, as it is often difficult to acquire wayleaves and some municipalities operate a single trench policy. Conversely, access seekers for sites will typically have a number of alternative options, especially in urban areas, which gives them countervailing buyer power.

As a result of the above issues, ICASA needs to consider strengthening the regulation for duct and pole access. This would be consistent with focussing regulation on the most upstream markets possible. Given that the Facilities Leasing Regulations is already working well for site access, it would be disproportionate to review all aspects of the Facilities Leasing Regulations. Instead, it would be more

[191] See: b2c1966e0897/IE%202004%200121%20public.pdf

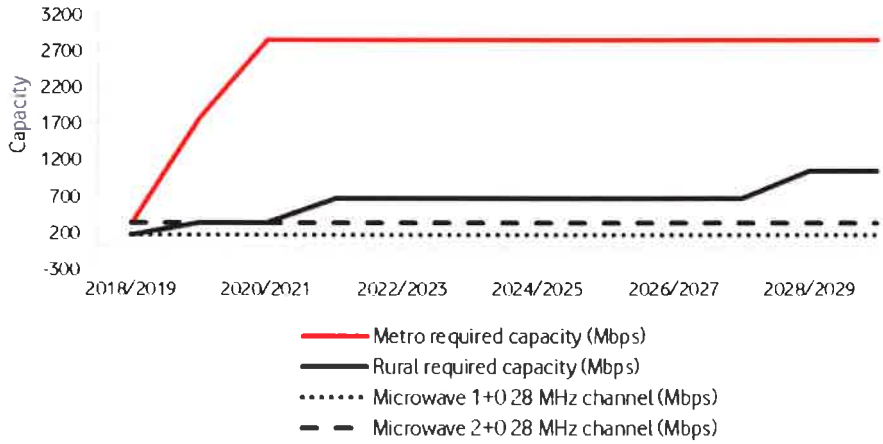
appropriate for ICASA to consider imposing Chapter 10 remedies on duct and pole access, as part of its review of the mobile broadband value chain. In addition to ensuring that any regulation of duct and pole access is fit-for-purpose, ICASA also needs to ensure that any regulation is effectively enforced.

Imposing ex-ante regulation of duct and pole access would be consistent with the approach taken in a number of other countries. For example, Ofcom recently conducted a strategic review of the telecoms sector in the UK. One of its main conclusions was that more effective ex-ante regulation of ducts and poles would improve the sector. For example, Ofcom stated that: *"The best driver for investment and innovation is network based competition: and this is at the heart of our future strategy. We believe competition between different networks (including those built from scratch or built using duct and poles owned by others) is the best way to drive investment in high quality, innovative services for consumers."*[192]

2. The importance of duct and pole access for fibre backhaul

At present, Vodacom (along with other operators) has to partly rely on point-to-point microwave for mobile backhaul[193]. This is because the regulatory and investment barriers to use microwave links to self-provide transmission are lower when compared to the barriers associated with deploying optical fibre. However, microwave links do not have sufficient capacity to carry the traffic volumes that MNO's will require in future and could potentially lead to a higher cost base when compared to fibre. This is demonstrated by Figure 40 below, which shows the forecast capacity required on metro and rural sites relative to the capacity offered over the microwave links typically used by Vodacom. This shows that microwave links will have insufficient capacity to serve metro sites in 2019/20 and rural sites in 2021/22[194]. E-Band microwave supports capacities up to 10 Gigabits per second (Gbps), however the distances are limited to 2Km, which means that it is an ineffective substitute for fibre backhaul.

Figure 40: Traffic forecast for metro and rural sites relative to microwave capacity



Given the limitations with microwave backhaul, mobile operators will increasingly have to rely on fibre backhaul, especially if they are going to make the most of the upcoming assignment of HDS. However, the initial investment required to self-provide fibre is significant: ensuring that mobile operators have more effective access to existing ducts and poles would allow MNOs to roll-out backhaul in a cost-effective way, whilst it would also avoid the unnecessary duplication of infrastructure. Absent an

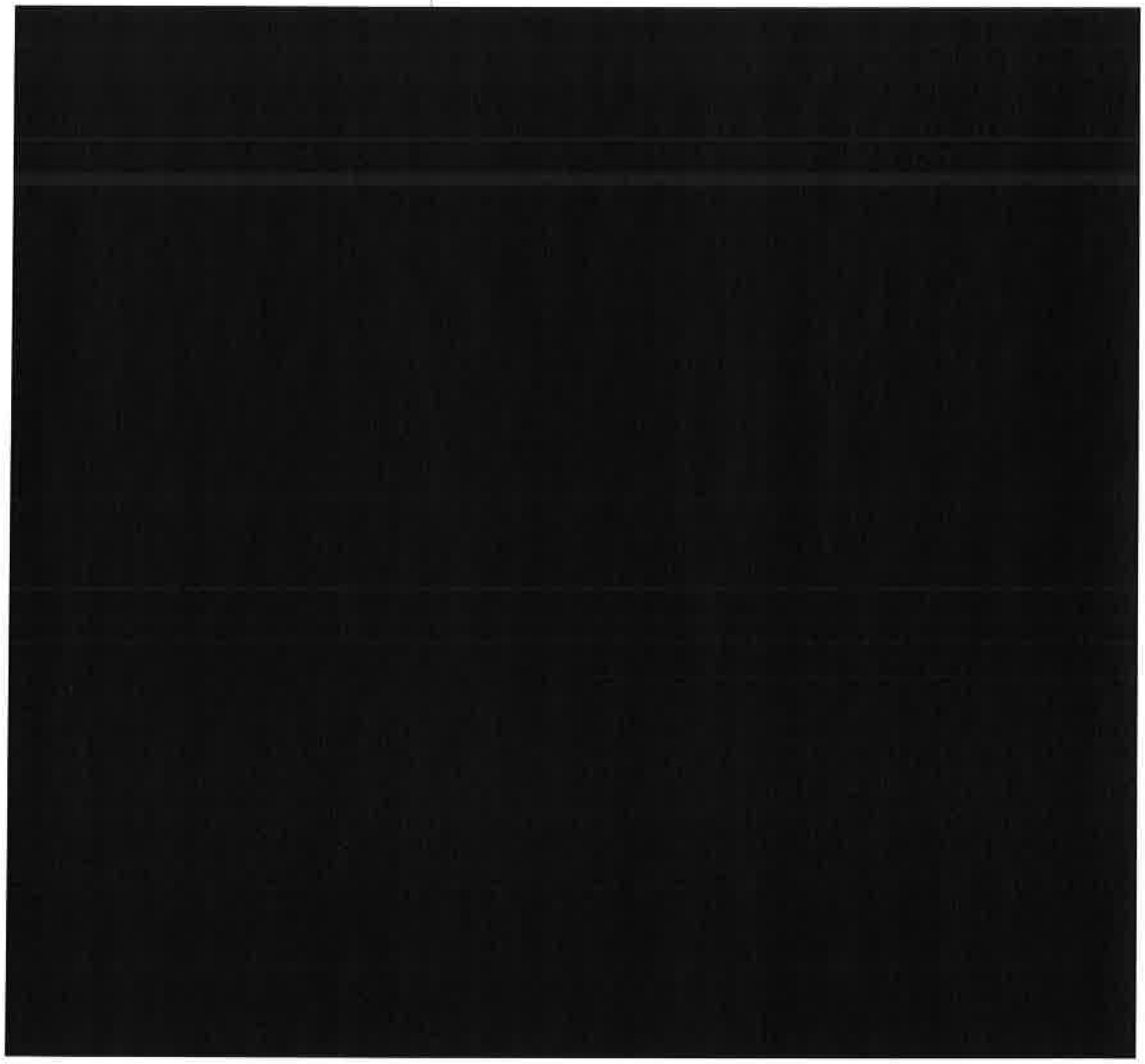
[192] https://www.ofcom.org.uk/__data/assets/pdf_file/0016/50416/dcr-statement.pdf
[193] As of the end of March 2018, Vodacom used 6432 microwave links (all self-build), 5342 fibre links (1286 self-build, 4056 leased) and 1043 leased lines (all leased).
[194] There are a number of other types of microwave links that can be used (4+0 and 8+0), which have higher capacity. However, Vodacom only makes limited use of such links because if they were used more extensively Vodacom would need additional microwave spectrum (this is in different bands to the spectrum typically used for mobile services).

effective access to ducts and poles, the cost base for providing access transmission is artificially driven upward.

Telkom has a clear advantage when it comes to fibre backhaul. Telkom's fibre footprint reached 163,800km in 2019, connecting 77% of Telkom's mobile base stations. According to Telkom in its CMDP 2019, "77% sites backhauled by Fibre is the highest ratio in South Africa". In comparison, Vodacom has to date only been able to connect 41% of sites, with self-provided fibre.

Annexure A

Figure 41: Vodacom's engagement processes with MVNOs



Annexure B

Vodacom's notes on Annexure Q10.1 RAN Site sharing seekers Updated – submitted on 24 May 2019

Excel attachment