

Submission to the Independent Communications Authority of South Africa, **regarding:**

Electronic Communications Act (36/2005): Notice regarding Information Memorandum on Licensing of Spectrum in the IMT700, IMT800, IMT2600 and IMT3500 Bands

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I. INTRODUCTION

1. Our names are Kalyan Dasgupta, Justin Tonkin and Phil Alves. We are economists affiliated with Berkeley Research Group (“BRG”). BRG is an international firm providing expert analysis and management consulting services in the areas of economics, finance, accounting, and data analytics. We work out of BRG’s offices in Johannesburg and London.
2. We have been asked by Telkom SA SOC Ltd (“Telkom”) to provide an independent economic assessment, focused on competition in the mobile industry, of a recent publication by the Independent Communications Authority of South Africa (“ICASA”) called the, “Notice regarding Information Memorandum on Licensing of Spectrum in the IMT700, IMT800, IMT2600 and IMT3500 Bands”.¹ In this report we refer to this publication as the “Second IM”. Where necessary, we also refer to the “First IM”, which ICASA published 01 November 2019.²
3. This report also refers to earlier documents and statements including the Invitations to Apply (“ITAs”) ICASA published in October 2020³; the “Reasons Documents” ICASA published in relation to those ITAs, in December 2020⁴; and the documents ICASA published during the Mobile Broadband Services Market Inquiry (“MBSI”) including the “MBSI Discussion Document”⁵ and the “MBSI Findings Document”.⁶

¹ Government Gazette Vol. 676, No. 45225, “Electronic Communications Act (36/2005): Notice regarding information Memorandum on Licensing of Spectrum in the IMT700, IMT800, IMT2600 and IMT3500 bands,” General Notice 587 of 2021, dated 1 October 2021.

² Government Gazette Vol, 653, No. 42820, “Electronic Communications Act (36/2005): Notice on the Licensing Process for International Mobile Telecommunications (“IMT”) Spectrum, Inviting Comments in respect of the Provisioning of Mobile Broadband Wireless Open Access Services for Urban and Rural Areas Using the Complimentary Bands, IMT700, IMT800, IMT2300, IMT2600 and IMT3500”, dated 1 November 2019.

³ One ITA was for mobile spectrum in several International Mobile Telecommunications (“IMT”) frequency bands that are relevant to provide mobile telecommunications services (“the IMT ITA”); the other was for providing an individual electronic communications network service (“I-ECNS”) and Radio Frequency Spectrum Licence for the purposes of operating a Wireless Open Access Network (“WOAN”) (“the WOAN ITA”)

⁴ ICASA published two “Reasons Documents” accompanying each of the two ITAs, both in early December 2020. The IMT ITA Reasons Document is hereinafter referred to as the “Reasons Document”. The WOAN ITA Reasons Document will be referred to as such, if required. The full title of the IMT ITA Reasons Document is: “Reasons Document Relating to the Invitation to Apply on the Licensing Process for International Mobile Telecommunications in Respect of the Provision of Mobile Broadband Wireless Access Services for Urban and Rural Areas using the Complimentary Bands, IMT700, IMT800, IMT2600 and IMT 3500.” It was published in Government Gazette Vol. 666, No. 43970, 4 December 2020.

⁵ ICASA, “Discussion Document on the Market Inquiry into Mobile Broadband Services in South Africa”, 29 November 2019, available at <https://www.icasa.org.za/uploads/files/discussion-document-on-the-market-inquiry-into-mobile-broadband-services.pdf>

⁶ ICASA, “Findings Document on Mobile Broadband Services Inquiry”, 26 March 2021, available at <https://www.icasa.org.za/uploads/files/Findings-document-on-mobile-broadband-services-Inquiry.pdf>.

4. In September 2021, the High Court reviewed and set aside ICASA’s decision to publish the ITAs and ordered that the matter be referred to ICASA for re-consideration.⁷ The Second IM is the first public document in ICASA’s re-consideration of the spectrum assignment process.
5. The Second IM states, in relation to competition issues, that, “The Authority ... assessed the state of the competition in the mobile sector, as contained in the published Reasons Document, with the information at its disposal in formulating the ITA.”⁸ That statement specifically references the “Competition Assessment” contained in the Reasons Document.⁹ The Second IM contains no other comments on competition issues. Accordingly, Telkom is of the view that the Second IM has adopted the Competition Assessment and that the Competition Assessment constitutes ICASA’s current view on competition issues, informing the Second IM. Telkom has thus requested us to focus our analysis of competition issues, in relation to the Second IM, on the Competition Assessment.
6. In connection with the High Court matter, we had previously been engaged by Werksmans, attorneys for Telkom, to comment on ICASA’s decision to issue the IMT ITA and the WOAN ITA. Werksmans asked us to analyse, from the vantage point of economics and based on our international and South African expertise in telecommunications regulation, whether ICASA’s decision was consistent with the actions of a regulator with a statutory objective to promote competition. In reports submitted before the High Court dated December 21st, 2020 and March 5th, 2021 (“Our ITA Reports”), we concluded that ICASA had not acted in a manner that was consistent with its statutory objective to promote competition.

A. Materials Relied Upon

7. Our analysis is based upon public information on the South African mobile market, relevant legislative prescripts, and certain of Telkom’s submissions to ICASA, all of which are in the public domain. These are referenced in the appropriate manner.

B. Duty of Independence

8. We are aware that we have a duty to remain independent in our views, and that we are not to be an advocate for any party in this proceeding (“Duty of Independence”). We have prepared this report in accordance with this Duty of Independence. If any of us are called upon to provide further information, we will provide that information in conformity with the Duty of Independence.

⁷ High Court of South Africa, Gauteng Division, Order, 15 September 2021, Case No.: 2020/66778.

⁸ Second IM, section 1: “Competition Matters”.

⁹ Second IM, footnote 1. It mentions that the Competition Assessment begins on pg. 78 of the Reasons Document.

II. SUMMARY OF CONCLUSIONS AND OUTLINE OF ANALYSIS

A. Summary of Conclusions

1. Spectrum licensing and competition

9. The critical question before the South African mobile sector is competition. Industry participants, and more importantly, several studies by the South African government and the Competition Commission of South Africa (“the Commission”) have identified competition (or a lack of it) as the most critical issue facing South Africa’s telecommunications industry. The lack of mobile broadband competition is a particularly pressing concern in a country where mobile networks provide the primary means of connecting to the internet for most of the population.¹⁰
10. Spectrum is a vital input into the provision of mobile voice communication and data services. Spectrum is also a scarce resource. Consequently, the way in which the licensing of spectrum takes place—including the licensing of different bands of spectrum (e.g., sub-1 GHz, 2600 MHz or 3500 MHz)—plays a critical role in determining whether the South African mobile sector progresses towards greater competition or whether the current incumbent¹¹ duopoly (where the top two firms have 72% of subscribers¹² and about 76% of service revenues¹³) is entrenched or exacerbated.

¹⁰ A non-exhaustive list of government policy papers and studies that address competition issues in mobile telecommunications includes: National Planning Commission (2012), “National Development Plan 2030: Our future – make it work,” hereafter referred to as “NDP”; “South Africa Connect: Creating Opportunities, Ensuring Inclusion” (“SA Connect”) (Government Gazette Vol. 582, No. 37119, 6 December 2013); the National Integrated ICT Policy White Paper (“ICT Policy”, 2016) (Government Gazette Vol. 616, No. 40325, 3 October 2016); Department of Telecommunications and Postal Services (2019), “The Policy and Policy Direction on High Demand Spectrum” (“Policy Direction”) (Government Gazette Vol. 649, No. 42597, 26 July 2019); and National Treasury (2019), “Economic transformation, inclusive growth, and competitiveness: A contribution towards a growth agenda for the South African economy,” November 2019, available at: <http://www.governmentpublications.lib.uct.ac.za/news/economic-transformation-inclusive-growth-and-competitiveness-contribution-towards-growth-agenda>. The Commission addressed mobile competition and spectrum issues in considerable detail in the DSMI, launched in 2017 (Government Gazette Vol. 626, No. 41054, 18 August 2017). The DSMI issued its final report on 2 December 2019.

¹¹ We use the term “incumbent” here to refer specifically to Vodacom and MTN, in keeping with the terminology used by the Commission of South Africa in the DSMI.

¹² Based on the latest available subscriber data in operator results and press reports. For Vodacom, MTN, and Telkom, data is as at June 2021. For Cell C and MVNOs, at December 2020. The MVNO figure is taken from Cell C’s results and effectively assumes that Cell C alone hosts MVNOs. This was the case until very recently. We are aware that new MVNOs have recently entered on MTN’s network. We assume their subscriber shares would be negligible. For Rain, we estimated a subscriber figure for June 2021 based on press reports.

¹³ This is based on reported service revenues for the 12 months to March 2021 for Vodacom and Telkom, and the 12 months to December 2020 for MTN and Cell C. MVNO revenue is not known with sufficient due to Cell C’s reporting method. Rain does not report revenue.

11. There had been a period of several years, leading up to the launch of the MBSI, where ICASA had not addressed competition concerns in a thoroughgoing and holistic fashion. The First IM and the ITAs pursuant to it, alongside the MBSI, constituted a significant opportunity to do so, as they provided a unique opportunity to interweave spectrum licensing policy with broader and complementary pro-competitive policy initiatives that would be reflected in the MBSI. As we noted in Our ITA Reports, however, ICASA's primary concern in issuing the ITAs—without coordinating the ITAs and MBSI processes at all—seemed to be to proceed with the auction, even though its priority should have been addressing key competition issues (which we discuss below) in mobile. As a result of the High Court action taken by Telkom and other affected parties, the High Court reviewed and set aside ICASA's decision to publish the ITAs on September 15th, 2021.
 12. The Second IM thus represented an opportunity for ICASA to correct its course. In response to the criticisms raised by Our ITA Reports and by other intervenors in the High Court proceedings, ICASA had the opportunity to consider:
 - its vision of a realistic and sustainable industry structure that would promote credible competition to Vodacom and MTN's current market positions, i.e., whether this was best achieved with attempting to ensure that there were five or more facilities-based players in the market or whether through providing greater opportunities to expand for existing challenger mobile operators;
 - the role of the WOAN in the new market structure;
 - the status of Cell C as a "national wholesaler";
 - the role of what are clearly spectrum leasing arrangements ("sharing deals") between the two incumbent operators and Rain, Liquid and Cell C;
 - the licensing of spectrum in light of the above considerations and constraints, including *inter alia* (a) how much spectrum should go to the WOAN to make it truly credible; (b) the design of spectrum caps particularly given asymmetries between operators in respect of sub-1GHz spectrum holdings; (c) the potential for the sharing deals to effectively subvert the caps (and also the "floors" or "minimum spectrum portfolios" ("MSPs")) that ICASA has proposed previously in the ITAs; and (d) the economic reality that spectrum is also required to support operators' offerings in the fixed wireless access market ("FWA").
 13. Rather than embracing this opportunity and responding to criticism that it has received, ICASA apparently has signalled that it will continue to rely on the same flawed "Competition Assessment" (which was appended to its Reasons Document) that informed the ITAs. In other respects, e.g., the issue of assigning spectrum in the sub-1GHz range, ICASA has signalled potential new policy options, but these would seem inconsistent with
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its reliance on the Competition Assessment, and which are anyway likely to be counterproductive. Moreover, ICASA continues to separate the MBSI (whose findings are now available) and the ITA processes. This is unfortunate as both should be considered in tandem—for example, actions not taken in the MBSI (e.g., adequate remedies with respect to site access for different industry players) can be taken into account through conditions imposed as part of the auction process.¹⁴

2. Relying on the flawed Competition Assessment will not address serious competition problems

14. Most fundamentally, ICASA’s assessment of competition and the remedies that flow from it are unlikely to inject much-needed competition into the South African mobile sector.
15. As a starting point, given that ICASA appears to be drawing from the same Competition Assessment that it used to justify the ITAs, we conclude that ICASA has committed to a market structure that may be unrealistic and therefore problematic. ICASA envisages four national wholesalers and the WOAN, supplemented by additional competition from smaller players such as Rain and Liquid and from MVNOs. Economic theory and international experience of consolidation in the mobile sector suggest that three or at most four operators can be sustained in a long-term equilibrium in the context of an industry where large sunk costs (including spectrum costs) must be incurred upon entry, generating significant scale economies and limiting the optimal number of industry participants at this level. The predictions of economic theory (borne out by real-world data) are of immediate consequence to the assignment of spectrum in this case: committing to a potentially unviable market structure risks wasting scarce spectrum resources on operators who may not be able to utilise them optimally. Thus, ICASA’s proposed cap on spectrum holdings of 184 MHz per operator is premised on five facilities-based operators and limits the spectrum holdings for each operator accordingly.
16. Yet at the same time as limiting operators’ maximal spectrum holdings, ICASA has not committed wholeheartedly to the WOAN. ICASA claims that the WOAN will be “credible” with 80 MHz of spectrum because Vodacom and MTN have historically operated with about this much spectrum. This ignores the fact that Vodacom and MTN did not have to compete for traffic and retail and wholesale customers with established incumbent networks. In fact, their incumbency advantages and the flow of excess profits from those incumbency advantages allow them to both (i) compete against rivals despite allegedly limited spectrum holdings and (ii) finance capital expenditure that can (to some degree) help overcome any spectrum limitations. While MTN and Vodacom are (more than) credible with 80 MHz of spectrum, this does not mean that the WOAN will be. The WOAN will be—on ICASA’s account—a fifth wholesaler in an industry in which it may be difficult to sustain more than three or four. Further, by proposing MVNO access to the networks

¹⁴ As detailed later, the impacts of the ITAs on the analysis and conclusions reached by ICASA in the MSBI are wider than just the example of site access remedies. ICASA assumed, in the MBSI findings and draft regulations, that the ITAs would play a significant role in addressing an array of competition concerns ICASA identified.

of all successful auction bidders, ICASA appears to be further limiting the WOAN's prospects as such MVNOs are a core constituency for the WOAN. If ICASA is indeed concerned about "stranded" spectrum, a half-hearted commitment to a WOAN will likely be particularly counterproductive—80 MHz of spectrum that could have been better used by another player to compete with Vodacom and MTN will indeed be stranded, the WOAN will be stillborn, and the duopoly will be strengthened.

17. This is particularly the case given the status of Cell C. As spelled out in Our ITA Reports, and discussed again below, Cell C should no longer be classified as a national wholesaler. Cell C has recently described itself as a buyer of wholesale inputs from other operators. ICASA appears to be relying on the U.K.'s Ofcom for its definition of "national wholesaler" and claims that this definition encompasses a player that contracts for a Radio Access Network ("RAN").¹⁵ Ofcom was operating in a different context—none of the four potential national wholesalers it was considering in the United Kingdom ("UK") were considering outright reliance on a rival's RAN facilities in all geographic areas for all services—its definition of national wholesalers was simply not tested by circumstances similar to those of Cell C. In addition, as also pointed out in Our ITA Reports, Cell C's wholesale network agreement with MTN appears to allow MTN access to Cell C's existing spectrum holdings. Cell C's predicament implies that in reality there are only three national wholesalers (Vodacom, MTN and Telkom), which may in future be joined by the WOAN.¹⁶ The potential implication is this: Telkom and the WOAN will both end up with restricted spectrum holdings relative to the situation in which Cell C's spectrum might have been made available to other market participants, making them less potent competitors than they might otherwise be. MTN, however, will have access to Cell C's spectrum (a fact that ICASA does not recognise in the design of its spectrum caps) as well as access to Liquid's 1800 MHz spectrum. This will worsen rather than improve competition problems in the mobile sector.
18. In light of Cell C's shift to an MVNO-type operating model, there is no clear reason why Cell C would continue to need spectrum to serve its own customers. Its spectrum licenses are a legacy feature of its former, traditional MNO business model. ICASA should actively consider whether Cell C's current spectrum holdings, including its sub-1GHz holdings, can and should be reassigned to other operators.

¹⁵ ICASA "Reasons Document", Government Gazette, 4 December 2020, p. 80.

¹⁶ A recent academic paper makes the same point about Cell C as we do. The paper states that Cell C is "slowly but surely morphing into an MVNO." See Howell, Bronwyn and Petrus Potgieter (2021), "Spectrum shortage and merger by any other name in South Africa", Conference Paper presented at the 23rd Biennial Conference of the International Telecommunications Society, Gothenburg, Sweden, June 21st-23rd, 2021. An online version of the paper is available at <https://www.econstor.eu/bitstream/10419/238027/1/Howell-Potgieter.pdf>.

3. Failure to recognise the sharing deals is another key flaw in ICASA's approach to competition

19. ICASA's Competition Assessment essentially overlooked the web of deals that exist between smaller players such as Rain, Liquid and now Cell C on the one hand and Vodacom and MTN on the other hand. Under these deals, Vodacom and MTN offload excess demand onto parallel networks that utilise Rain, Liquid and potentially Cell C's spectrum allocations, but which largely rely on Vodacom and MTN's own sites and radio equipment. In the case of Rain's 1800 MHz and 2600 MHz (4G) spectrum and Liquid's 1800 MHz spectrum it is clear from public domain facts that their primary economic function is to provide additional capacity to Vodacom and MTN, and also clear that these networks would not exist absent this capacity offloading function. It is also apparent that the manner in which the sharing deals have been constructed, particularly the use of Multi-Operator Core Networks ("MOCN") architecture bound together with managed network services agreements (MNSA) provided by Vodacom and MTN, that they are not intended to be short term arrangements and that they may well create de facto exclusivity for the "roaming" party. The financial and operational dependencies that are evident from the structure of these arrangements suggest a significant risk that Rain and Liquid's spectrum is not being used and will not be used to provide meaningful competition to Vodacom and MTN. Instead, it is being used to augment Vodacom and MTN's existing licensed spectrum holdings. Similar considerations may come to apply to Cell C's spectrum as Cell C's deal with MTN progresses.
20. The implication is that Vodacom and MTN may have "backdoor" access to more spectrum than they officially hold. This possibility is not reflected in ICASA's design of caps. This is even though ICASA knows that MTN and Liquid are pooling 1800 MHz spectrum (in fact, ICASA has given express approval for this arrangement) and Rain and Vodacom are engaged in inter-operator carrier aggregation which amounts to an integration of Rain's spectrum resources with those of Vodacom.¹⁷ Further, ignoring these sharing deals and letting Rain and Liquid bid for spectrum through the opt-in round, and thereby benefit from MSPs designed expressly to promote competition, risks allowing the incumbents to not only acquire additional spectrum beyond their notional caps, but also to do so while (indirectly) availing of protections that were designed to benefit their rivals (i.e., Tier 2 operators). In effect, while each operator will in theory have the potential to hold up to 184 MHz of spectrum (across all spectrum bands), the incumbents will end up with access to substantially more spectrum than their rivals. This will complement the other "incumbency" advantages that they have, e.g., a large installed base of subscribers that rivals will anyway find it hard to poach and an extensive network of sites and facilities and will entrench and exacerbate their duopoly status.

¹⁷ *MyBroadband*, (2021), "Rain's plan to make money", Rudolph Muller, 23 March 2021, available online at <https://mybroadband.co.za/news/business-telecoms/390256-rains-plan-to-make-money.html>

21. Regardless of the competitive effects of the sharing deals, ICASA’s failure to recognise the impact of the sharing deals means that MTN and Vodacom will have far more headroom for further spectrum acquisitions than does Telkom (their most credible challenger). For example, under ICASA’s cap proposed in the IMT ITA of 184 MHz, Vodacom and MTN could acquire more than 100 MHz of additional spectrum, compared to 42 MHz for Telkom. The additional headroom accorded to Vodacom and MTN is unjustified given that the sharing deals—which one recent academic paper labels “a merger by any other name”¹⁸—clearly already significantly alleviate MTN and Vodacom’s alleged spectrum constraints. The problem is made worse by the fact—unrecognised by ICASA—that Telkom is in the unique position of supporting large and growing volumes of mobile broadband traffic *and* FWA traffic¹⁹ and so some of Telkom’s existing spectrum holdings cannot be used to compete with Vodacom and MTN in mobile broadband services.

4. ICASA’s proposals for sub-1GHz spectrum also fail to address core competition problems

22. A key facet of the South African mobile industry today is the imbalance in the holdings of sub-1GHz spectrum across the different industry players. Telkom lacks access to such spectrum, which is critical to providing broader population coverage in an economical fashion and also critical to providing in-building services. While Vodacom and MTN have access to 900 MHz spectrum through their existing holdings (and which MTN has supplemented through its deal with Cell C), the only obvious route for Telkom to acquire such spectrum is via the auctioning of 700 MHz and 800 MHz spectrum. However, such spectrum is currently occupied by broadcasters and South Africa has been exceptionally slow in achieving any sort of “digital migration” of broadcasters away from these bands. The process of digital migration has been subject to numerous delays and even today there is no clarity regarding when it might actually be achieved.
23. In response, ICASA has claimed that (a) it may be possible for mobile operators such as Telkom to use the spectrum on a coordinated basis with broadcasters; and (b) uncertainties around the digital migration process will be reflected in a discounted price

¹⁸ Howell and Potgieter (2021), *supra*. While the authors reach different conclusions about some aspects of the South African mobile sector (e.g., the extent to which it approaches a state of effective competition) and see the sharing deals as a response to a lack of spectrum allocation, they seem to agree that the deals have increased MTN and Vodacom’s effective access to spectrum, and they describe the arrangements between MTN and Cell C as a near-merger.

¹⁹ Telkom’s FWA broadband products provide broadband services in areas where, for historical or economic reasons, fixed line infrastructure does not exist or the cost of maintaining legacy copper infrastructure has become prohibitive and services have been discontinued.

for the spectrum. ICASA is also, however, contemplating pulling the 700 MHz and 800 MHz spectrum out of the spectrum auction altogether.²⁰ ICASA's suggestions are flawed.

24. ICASA's proposal that the IMT spectrum in the 700 and 800 MHz bands can be used on a coordinated basis wherein interference can be managed via an administrative process ignores economic theory and empirical reality. Economic theory has—since the late 1950s and the pioneering work of Nobel Laureate Ronald Coase—recognised that exclusive property rights provide a much more secure foundation for an investment case than do coordinated arrangements where interference problems are administratively managed²¹. Empirical reality—in the form of Telkom's experience with using 700/800 MHz spectrum under temporary Covid-related assignments shows that it has indeed experienced interference problems. Even more fundamentally, Telkom has only been able to roll out sites where interference can be managed to acceptable levels. Put simply, any economic advantages from accessing sub-1GHz spectrum will be sacrificed under a “coordinated usage” regime that severely limits rollout.
25. It is also highly unusual for a regulator to suggest (as ICASA originally did) that the problems associated with pervasive uncertainty can be meaningfully reduced because such uncertainty can be “priced in.” In fact, fundamental “uncertainty” is distinct from “risk” (as economists have recognised since at least the 1920s)—after all the delays, stakeholders genuinely can have little faith or little ability to predict when and under what circumstance the 700 MHz and 800 MHz spectrum used by broadcasters will become available to them, so they may not be able to “price in” the uncertainty to any meaningful degree. The nature of the uncertainty and who is most exposed to the uncertainty also matters. Telkom's alternative to using the sub-1GHz spectrum is to engage in a capital-intensive network densification programme. However, the extent, timing and expense associated with this alternative course of action depends on Telkom's expectations of when and to what extent it will be able to access sub-1GHz spectrum.
26. Uncertainty around the digital migration feeds into uncertainty around how much to commit to alternative courses of action, and thus into uncertainty about how much to “discount” the value of spectrum tied up with the digital migration process. Most fundamental, of course, is the asymmetry in sub-1GHz holdings—even if Telkom can somehow “price in” uncertainty or deploy alternative network investment plans it will remain at a cost disadvantage to Vodacom and MTN for as long as it cannot access the relevant 700 MHz and 800 MHz spectrum. To the extent that ICASA is considering the possibility of withdrawing the 700 and 800 MHz spectrum from the auction, this does not address the asymmetry of positions and any competitive distortions arising from it.

²⁰ Second IM, at paragraph 1.1.7.

²¹ This is entirely consistent with the judgement of Sutherland J who noted “This resource is optimally usable when a single provider has exclusivity over a band of the frequency spectrum; were it otherwise, transmissions would overlap and render the communications network incoherent and unreliable.” See High Court of South Africa, Gauteng Division, CASE NO 2016/59722, available at <http://www.saflii.org/za/cases/ZAGPPHC/2016/883.pdf>.

Further, it requires a rethinking of the entire auction design, as access to this low-band spectrum is presumably important to the “credibility” of any national wholesaler and without access to low-band spectrum, Telkom will continue to operate at a disadvantage relative to Vodacom and MTN.

27. Finally, ICASA should (but shows no indication that it will) seize the opportunity provided by the High Court’s decision to consider whether Cell C’s spectrum holdings can be reassigned to non-incumbent operators in order to boost competition and relieve asymmetries in spectrum holdings. There appears to be no justification for Cell C to maintain its own spectrum now that it is effectively an MVNO on MTN’s and Vodacom’s networks. We are not aware of any MVNOs around the world with their own spectrum holdings. By contrast, there is every reason to believe that a competitor such as Telkom would be able to put the spectrum to a more pro-competitive end than Cell C is able to do, particularly given Cell C’s tie-in with MTN.

5. ICASA’s failures with respect to the Second IM compound its other failures

28. ICASA’s failure to use the spectrum auction to facilitate competition compounds its broader failure in promoting competition. As noted briefly above and described further below, outside observers have repeatedly noted the lack of policy action to correct the duopoly situation in the South African mobile sector. The MBSI and the First IM and ITAs were ripe opportunities for ICASA to take a holistic and integrated approach to competition—i.e., by recognising the complementarity between spectrum policy and other pro-competition measures. In the event, the First IM and ITAs were seemingly prepared to pre-empt proper consideration of competition issues and had no interaction at all with the MBSI. On the other hand, ICASA also maintained the position that the ITAs and their outcomes would be *inputs into the MBSI*.
29. In short, ICASA issued flawed ITAs based on an incomplete and flawed Competition Assessment. It then based the recommendations of the MBSI on the assumption that its flawed ITAs—based on the flawed Competition Assessment—would address several competition problems and so the MBSI need not address them. ICASA’s decision to publish the ITAs was then set aside, resulting in ICASA having proposed, at this current junction, no meaningful remedies for addressing competition in either the spectrum licensing process or in the MBSI. This underscores the importance attached to the Second IM and the forthcoming ITAs—they must be strongly pro-competitive in design; they must compensate as much as is practicable for the failings of the MBSI. Yet it seems clear that ICASA does not intend to adopt this approach. ICASA seems intent on sticking to its original approach which prioritised the auctioning of spectrum over taking the time and care needed to ensure that the design of the spectrum licensing process would address competition failures.

B. Outline of Analysis

30. The remainder of this report is structured as follows:

- Section III sets out the full background to the Second IM, including the long-standing concerns expressed by South African policymakers about the lack of competition in the mobile sector, and ICASA's efforts to respond to those concerns;
- Section IV addresses the issue of the "optimal" market structure, arguing that ICASA has neither justified its vision of a 4+1 market structure nor taken the steps required to actually achieve it in a meaningful way;
- Section V discusses the spectrum sharing deals between the incumbents and Cell C, Liquid and Rain, and explains why they have a pervasive effect on all aspects of competition and on the very design of the auction;
- Section VI discusses issues related to low-band spectrum, including the digital migration and the implication for the design of spectrum caps;
- Section VII discusses the failures of the MBSI and the need for the Second IM and forthcoming ITAs to compensate for those failures by being strongly pro-competitive, and thus different from the ITAs published in 2020;
- Section VIII provides concluding remarks.

III. BACKGROUND TO THE SECOND IM

31. This section summarises the context and process leading to ICASA’s publication of the Second IM. It shows that ICASA has largely failed to respond effectively to calls from policymakers to strengthen competition in the mobile industry. This failure now includes the spectrum licensing process of 2019-2020, and the MBSI. ICASA’s failures are striking in light of how much prominence has been given to the issue of the lack of competition in the mobile sector, for at least the last decade.

A. The broader policy context around competition in the mobile sector

1. South African policymakers have emphasised the lack of competition for at least a decade

32. Ever since the “National Development Plan” or “NDP” was published in 2012, South African policymakers have identified a lack of competition in the telecommunications and mobile sectors as a major impediment to achieving their policy objectives. The NDP identified universal broadband access at competitive prices as an important “milestone”.²² It stated that competition in the mobile and fixed telecommunications markets was ineffective, that “dominance” had been “ineffectually regulated,”²³ and that South Africa needed to “commit to intensifying competition in the ICT sector.”²⁴ The NDP also identified spectrum as the biggest regulatory bottleneck to deploying wireless technologies, but also noted that spectrum policy should favour greater competition.²⁵ Following on from that:

- The national broadband strategy of 2013 – dubbed “SA Connect” – identified an “affordability problem” in broadband services (in addition to inadequate network coverage). It also concluded that mobile broadband would be the primary means by which most South African households would access the internet (given very limited fixed network coverage); and that assigning more spectrum would facilitate competition and improve affordability of mobile broadband.²⁶
- The National Integrated ICT Policy White Paper from 2016 (the “ICT Policy”) also emphasised the link between competition and affordability.²⁷ It argued that ICASA’s pro-competitive regulatory efforts had been inadequate and that ICASA

²² NDP, 2012, pg. 34.

²³ NDP, 2012., pg. 190.

²⁴ NDP, 2012., pg. 192.

²⁵ NDP, 2012, pp. 192-3.

²⁶ South Africa Connect: Creating Opportunities, Ensuring Inclusion, South Africa’s Broadband Policy, pp. 3 and 5,

²⁷ ICT Policy, 2016, pp. 1 and 8-9.

needed more capacity for this type of work.²⁸ The ICT White Paper also proposed the Wireless Open Access Network (“WOAN”) as part of a broader vision for the sector founded on services-based competition.²⁹ The Department of Telecommunications and Postal Services confirmed government’s stance that a WOAN should be licensed in 2019.³⁰

- The National Treasury published a policy paper, also in 2019, emphasising the need for stronger competition in all South Africa’s network industries, including telecommunications. It identified scope for keener price competition in mobile, and recommended ways to improve and strengthen capacity at ICASA to introduce pro-competitive regulatory measures.³¹

33. These policy statements have not only expressed concern at the lack of competition in mobile, but also at ICASA’s track record of introducing pro-competitive regulatory measures.

2. The Competition Commission has also emphasised competition as the key objective for ICASA

34. The Competition Commission has also expressed concern at the lack of competition and the measures to promote it. It launched the Data Services Market Inquiry (“DSMI”) in 2017 in response to ongoing concern at the policy level over competition and affordability of mobile services.³² The inquiry closed in 2019.

35. The DSMI identified serious competition concerns in the mobile market. The Commission concluded that Vodacom and MTN are dominant or have market power in key wholesale markets (e.g. site access and national roaming) and in the retail market. The Commission

²⁸ ICT Policy, 2016, pp. 38-40.

²⁹ ICT Policy, 2016, Ch.9.

³⁰ Department of Telecommunications and Postal Services (2019), “The Policy and Policy Direction on High Demand Spectrum”, Government Gazette Vol. 649, No. 42597, 26 July 2019.

³¹ National Treasury (2019), “Economic transformation, inclusive growth, and competitiveness: A contribution towards a growth agenda for the South African economy,” November 2019, available at:

<http://www.governmentpublications.lib.uct.ac.za/news/economic-transformation-inclusive-growth-and-competitiveness-contribution-towards-growth-agenda>

³² The terms of reference to the DSMI stated that, “The concerns of the Minister [who requested the DSMI] relate to high data costs in South Africa and the importance of data affordability for the South African economy and consumers. Having considered the request of the Minister, the Commission is conducting a market inquiry because it has reason to believe that there are features of the sector that prevent, distort or restrict competition within the sector, and/or to achieve the purposes of the Act.” Government Gazette Vol. 626, No. 41054, 18 August 2017, paragraph 2.3.

concluded that market power in the hands of Vodacom and MTN, and not costs, were keeping prices high.³³

36. The Commission noted that spectrum licensing can be a powerful tool for promoting competition. It accordingly recommended *inter alia* that ICASA design a strongly pro-competitive spectrum licensing process, noting core problems such as the significant barrier to expansion facing Telkom created by Telkom's complete lack of sub-1 GHz spectrum.³⁴ It argued that the auction should be designed to provide more spectrum to smaller operators than to Vodacom and MTN.³⁵
37. It also emphasised the importance of taking time to ensure the spectrum licensing process would yield pro-competitive impacts, rather than prioritising a speedy process aimed at simply expanding capacity in the market without also driving a fundamentally more competitive market structure. *In other words, the DSMI took the view that a spectrum licensing process designed to address competition by promoting the ability of smaller operators to compete effectively would be more valuable to the economy than a quicker process that missed this objective.*³⁶
38. Annexure A provides a brief snapshot of key competitive metrics in the South African mobile sector.

B. ICASA's continuing failure to address competition concerns

1. Process leading to the decision to publish the ITAs being set aside

39. The comments above provide the backdrop to the current spectrum licensing process, which began with the First IM which ICASA published on 1 November 2019. It contained virtually no analysis of competition. Telkom highlighted this omission and urged ICASA to prioritise the promotion of competition in the spectrum licensing process, and to also conduct a thorough assessment of competition to inform decisions in this regard.
40. The MBSI Discussion Document was published on 29 November 2019. It contained limited analysis of the role of spectrum in competition and none of the spectrum licensing process itself, other than to say that additional spectrum needed to be licensed urgently to alleviate capacity constraints and lower costs. ICASA took the view in this document that expanding capacity and lowering costs would drive prices lower, in contrast to the view espoused by the Commission in the DSMI Final Report.

³³ Competition Commission, DSMI Final Report, 02 December 2019, para. 482.

³⁴ Competition Commission, DSMI Final Report, 02 December 2019, para. 493. See also para. 499.2.2.

³⁵ Competition Commission, DSMI Final Report, 02 December 2019, paras. 483-484.

³⁶ Competition Commission, DSMI Final Report, 02 December 2019, paras. 482-484.

41. Accordingly, the MBSI Discussion Document did not provide the competition assessment missing from the First IM. This appears to have been a consequence of ICASA’s conscious decision to divorce the MBSI and the spectrum licensing process, an issue we discuss below. Consultants to ICASA identified and sought to rectify this problem in a report submitted to ICASA on 4 May 2020. This report contained what the consultants described as the “competition assessment” required to inform the design of the spectrum auction and to mitigate the risk arising from not conducting such an assessment to inform the First IM. However, this report was not made available for public consultation.
42. ICASA published the ITAs on 2 October 2020. It then published the Reasons Document containing the Competition Assessment on 4 December 2020. The Competition Assessment was very similar to the competition assessment ICASA’s consultants provided in May 2020, but, without explanation or justification, omitted mention of certain key concerns raised in the latter. A leading example is the network and spectrum sharing agreements: The May 2020 assessment flagged these for closer scrutiny, but the Competition Assessment completely ignores them. We discuss these agreements later in this assessment.
43. ICASA conducted public hearings for the MBSI on 26-27 October 2020. Some licensees and other stakeholders raised concerns over spectrum and related issues. ICASA offered no substantive engagement with those concerns, in keeping with its policy of separating the MBSI and the spectrum licensing process.
44. Telkom launched a legal challenge to the ITAs on 22 December 2020. e.tv joined in Telkom’s legal challenge on 12 January 2021. MTN added a challenge on 27 January 2021. Telkom’s case highlighted *inter alia* the flaws in ICASA’s approach and in its assessment of key competition issues as well as its view of the impacts of the ITAs on competition. The High Court set aside ICASA’s decision to publish the ITAs on 15 September 2021 and sent the matter back to ICASA for reconsideration, after the parties failed to reach a settlement.

2. Failure of the MBSI and the 2019-20 spectrum licensing process

45. ICASA launched the MBSI in 2018 following a prior process to identify which markets most urgently required a full market review. The MBSI was ICASA’s first ever formal review of competition in any market other than call termination. It was ICASA’s first opportunity to identify an integrated and complementary set of pro-competitive remedies needed to address the long-standing issue of ineffective competition in the mobile broadband market – including how the tool of spectrum licensing should be deployed to promote competition. The final findings in the MBSI and draft regulations (“Draft Regulations”) which proposed pro-competitive remedies were released in in March 2021.³⁷

³⁷ ICASA (2021). “Draft Mobile Broadband Services Regulations and Findings Document on Mobile Broadband Services Inquiry.” 26 March 2021. Government Gazette Vol. 669, No. 44337.

46. Like the DSMI, the MBSI found significant competition problems in South Africa's mobile broadband market, and that Vodacom and MTN possess market power.
47. However, ICASA failed to complete the MBSI before it released the ITAs. The latter were published in October 2020, while the former only emerged six months later. ICASA made no findings or recommendations in respect of the spectrum licensing process in the MBSI. The MBSI Findings Document clearly stated ICASA's policy to keep the two processes separate:

Any regulatory considerations in relation to spectrum, including remedies, are considered in the Authority's invitation to apply process, and will be assessed in terms of the Radio Frequency Spectrum Regulations and related regulations, rather than as part of this inquiry."³⁸

48. Moreover, ICASA assumed that the ITAs could be treated as inputs into the MBSI Findings Document and Draft Regulations. ICASA apparently assumed the ITAs would proceed to be executed, and without any amendments:

The conditions attached to the spectrum ITA process as well as the invitation to apply for the WOAN introduce various factors that are likely to change the conditions within wholesale and retail markets. As such, as part of the forward-looking assessment of competition in the market, these changes need to be accounted for in the analysis of competition. Some aspects of the spectrum ITA that may impact on a forward-looking assessment of competitiveness in the market are the following:

Coverage obligations;

Spectrum caps and spectrum floors;

References offers for site access for any licensee requesting site access and guidelines including pricing, timeframes and policies for reserving space on masts;

Open access to MVNOs (which must have 51% ownership from persons from historically disadvantaged groups with business plans to be submitted within 3-6 months); and

Requirements for successful applicants that are to be assigned the radio frequency spectrum to procure 30% of national capacity from the WOAN.

³⁸ ICASA, MBSI Findings Document, 26 March 2021, para. 107.

The impact of some of the aspects of the spectrum ITA will be taken into account in the forward-looking analysis in relevant sections of the Authority's findings. ³⁹

49. The MBSI represented a major opportunity for ICASA to devise an optimal package of complementary measures for addressing competition problems in the mobile market – including measures involving spectrum. Instead, ICASA chose to not only remove spectrum licensing from the ambit of the MBSI, but also decided to base the final outcomes of the MBSI on the ITAs. The latter decision led directly to the MBSI proposing only very limited and very weak Draft Regulations that are unlikely to have any significant impact on competition. ICASA seems, in effect, to have assumed that the ITAs would promote effective competition and, accordingly, would leave little “work” for the MBSI to do.
50. ICASA was clearly incorrect to divorce the spectrum licensing process from the MBSI; to deliberately exclude the spectrum licensing process from the analysis it carried out in the MBSI; and to assume that the ITAs would preclude the need for the MBSI to introduce new measures to address some of the competition problems in the mobile market. These decisions, coupled with ICASA’s seeming haste to issue the ITAs, clearly undermined both the spectrum licensing process and the MBSI, which now have both completely failed to address competition problems in mobile broadband.

3. The Second IM indicates no significant change to ICASA’s approach to licensing spectrum

51. The most striking aspect of the Second IM is that it contains no proposals to fundamentally alter ICASA’s approach to licensing spectrum from the one that informed the ITAs, the publication of which the High Court has now set aside. ICASA states in the first paragraph of the Second IM that it intends to rely on the exact same Competition Assessment in the new ITAs.
52. The closest ICASA comes to a significant revision of its previous approach is a suggestion in the Second IM that it might remove low-band spectrum (700 MHz and 800 MHz) from the auction.⁴⁰ Yet the Second IM has not considered the impact of implementing this suggestion on competition or on other aspects of the auction design. This impact would be significant.
53. Removing low band spectrum from the auction would fundamentally undermine the purpose of the MSPs that ICASA has endorsed in the Competition Assessment. It would significantly reduce the pro-competitive potential of an MSP a Tier 2 licensee could acquire during the opt-in round and undermine ICASA’s commitment to ensuring the

³⁹ ICASA, MBSI Findings Document, 26 March 2021, paras. 37-38.

⁴⁰ In addition, ICASA also appears to be proposing (Second IM at 1.3.2) that spectrum in the 3600 to 3800 MHz bands will not be counted in its calculations of the spectrum cap.

emergence of “credible” operators. This is because, as is widely accepted, low band spectrum promotes the ability of an operator to compete by reducing its network build costs, improving coverage, and improving its quality of service inside large buildings.

54. If an operator like Telkom obtained an MSP without low band spectrum, then this would be significantly less pro-competitive. The Second IM clearly agrees with this notion. It explains at some length how ICASA intends to refine the MSP structure and the opt-in round element of the auction. It contains nothing to suggest that ICASA has changed its mind on how the MSPs should work, or how important they are for competition. Without an MSP including low band spectrum, the Competition Assessment argues, a licensee is unlikely to become a “credible national wholesaler” (roughly speaking, this is the term ICASA has used to denote an effective infrastructure-based competitor).
55. In other words, if ICASA dropped low-band spectrum from the auction, ICASA would have to overhaul several core elements of the Competition Assessment which would then imply changes to the ITAs. Yet, as stated in the Second IM, ICASA intends to adopt the Competition Assessment in full without revision. To be clear, the Competition Assessment considers it vitally important that smaller operators gain access to sub-1 GHz spectrum:

*Given the scarcity of sub-1GHz spectrum in South Africa (no 700MHz and 800MHz spectrum has been assigned to date), it is likely to be particularly important in shaping future competition in mobile markets, and the extent to which individual national wholesalers are able to compete **credibly** with each other. Hence, the competition assessment points to attracting some sub-1GHz spectrum for the weaker and/or smaller third/fourth tier-2 national wholesalers.⁴¹*

56. This would seem to suggest that ICASA intends to publish new ITAs that differ very little from the ITAs published in 2020. If so, the “new” ITAs will possess similar flaws and present similar risks to competition as the previous ITAs. If not, the Second IM currently suffers very significant and critically important omissions. Either way, ICASA’s Second IM does not address any of the core problems in the Competition Assessment and previous ITAs. The rest of this assessment explains what those problems are.

⁴¹ Competition Assessment, para. 36. Emphasis in original.

IV. MARKET STRUCTURE, CELL C'S STATUS, AND THE ROLE OF THE WOAN

57. The market structure ICASA wishes to promote determines several critical decisions, including how much spectrum to set aside for the WOAN, and how to design the foundational elements of the auction, such as spectrum caps. Therefore, ICASA's market structure objectives must be realistic, achievable, and, above all, positive for competition.
58. This section demonstrates that ICASA's desired structure of four "national wholesalers"⁴² plus a WOAN ("4+1") is potentially unrealistic but, if achieved, might well be sub-optimal from two key perspectives: the promotion of effective competition and, through that, the efficient use of spectrum. It also demonstrates that, regardless of one's views on the optimality of a "4 + 1" market structure, ICASA's proposals are unlikely to achieve it. Our analysis, in this section, of ICASA's proposals and the substance of such proposals is based on the Competition Assessment included in the Reasons Document.

A. ICASA's proposed market structure may be unrealistic and inefficient

1. ICASA's approach to market structure and future competition

59. In the Competition Assessment, ICASA promotes a so-called "4+1" market structure. This is to be comprised of four national wholesalers (Vodacom, MTN, Cell C, and Telkom) plus the WOAN.⁴³ It even suggested the possibility of a sixth or seventh national wholesaler and emphasised that ICASA must, through the spectrum licensing process, ensure at least five in order to "enhance competition".

For the Authority to enhance competition through this award, the Authority should, subject to proportionality, take the minimum measures necessary to ensure that at least five wholesale network operators (including the new WOAN entrant) have access to spectrum to enable them to be capable of being credible national competitors at the wholesale level after the auction.⁴⁴

60. To support or justify this approach, ICASA's Competition Assessment uncritically endorses the idea that more competitors at the national wholesaler level would generate stronger competition.⁴⁵ ICASA does not explain why more competitors would lead to more

⁴² ICASA uses this term interchangeably with another term: "wholesale national operator". They both refer to same definition, which we recap below. In practice ICASA is referring to Vodacom, MTN, Telkom, and Cell C when it uses either of these terms.

⁴³ Competition Assessment, para. 40.

⁴⁴ Competition Assessment, para. 44.

⁴⁵ See, for example, paras. 37, 43, and 52 of the Competition Assessment. Para. 37 states: "As a general proposition, the Authority considers that competition between more rather than fewer competitors is likely to be the most effective means of enhancing competition, particularly in a concentrated market with high barriers to

effective competition. It does not assess whether a minimum of five national wholesalers would be the most effective means of promoting stronger competition, nor did it consult other licensees and other stakeholders on this approach.

2. Risks inherent in ICASA's approach

61. ICASA's approach needs to be justified. It is one among a set of alternatives, each with their own costs and benefits. There is no indication that ICASA has seriously considered the efficiency and viability of the 4+1 market structure relative to alternatives, e.g., it has not considered whether three strong competitors are better than two dominant firms and three significantly smaller, chasing firms.
62. This is an unfortunate omission on ICASA's part. A 4+1 structure imposes constraints on the total spectrum holdings and therefore the average costs of the competitors in the market. That in turn will have implications for the effectiveness of competition. Economic theory recognises that promoting entry (or sustaining a predetermined number of competitors) into industries characterised by large fixed and sunk costs and economies of scale – mobile is one such example of this kind of industry – may actually be detrimental to social welfare.⁴⁶ In such industries there is an efficient maximum number of competitors in each national market.⁴⁷ Further entry beyond the efficient number of competitors will result in an inefficient duplication of fixed costs, higher average costs for the remaining competitors in the market, and ultimately higher prices for consumers. Some operators will inevitably remain sub-scale and will not be able to exert effective competitive constraints on larger operators. That can lead to inefficient use of spectrum.⁴⁸

entry like those mentioned above in South Africa. Given that in mobile markets operators need access to spectrum to be able to compete as national wholesalers, the Authority has considered the minimum number of national wholesalers to promote for purposes of this forthcoming spectrum award.

⁴⁶ See Mankiw, N. G., and M. D. Whinston, (1986), "Free Entry and Social Inefficiency", *Rand Journal of Economics* 17(1), pp. 48-58, available at <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.319.2704&rep=rep1&type=pdf>. The key insight of Mankiw and Whinston is that entry is motivated by private incentives of the entrant. From this perspective, the transfer of profits from incumbent firms to entrant firms is a positive spur to entry. Yet if entry increases the total resource costs of the industry without expanding output much, then the private benefits to the entrant ("the business-stealing effect") may exceed the social benefits from entry. For example, if the total resources—e.g., capital investment—involved increase, but output does not increase, this may be inefficient and may, in fact, raise industry-wide average costs. Eventually, one might see firms exit, because they cannot earn the profits required to justify the original investment.

⁴⁷ See the discussion in Church and Ware (2000), "Industrial Organization: A Strategic Approach", Chapter 8, pp.249-251, available at http://works.bepress.com/jeffrey_church/23/.

⁴⁸ While there may subsequently be mergers or acquisitions that result in a redistribution of spectrum resources, this will not make up for the inefficiencies associated with an initial misallocation of spectrum. For one thing, the welfare losses (e.g., in the form of higher prices to consumers) associated with a higher-cost industry structure will

63. In addition to economic theory, ICASA appears to have ignored international trends in market structure and empirical evidence of increasing pressure to consolidate. For example, regulators in several countries have allowed “5 to 4” and “4 to 3” mergers between network operators (i.e., vertically integrated infrastructure-based competitors). We are not aware of any regulators elsewhere currently pursuing a policy of ensuring five mobile network operators.⁴⁹
64. On the contrary, in recent years, a number of regulatory authorities around the world have permitted five-to-four and even four-to-three consolidation. For example, a GSMA study of 29 European countries showed that, by 2011, all had either three or four competitors: eleven had four and 18 countries had three. By 2018, after consolidation in some countries and entry in others, there were ten four- and 19 three-player markets.⁵⁰ A “4 to 3” merger was also recently permitted in the USA (the merger of Sprint and T-Mobile in 2019). Specific examples of 4-to-3 mergers that have been permitted include:
- Greece 4 → 3 (TIM Hellas/ Q-Telecom in 2006)
 - Austria 4 → 3 (Three/Orange in 2013)
 - Germany 4 → 3 (Telefonica/E-Plus in 2014)
 - Ireland 4 → 3 (Three/Telefonica in 2014)
 - Netherlands 4 → 3 (T-Mobile/Tele2 in 2019)

not be recouped. In the context of an industry in which there are large “scaled up” incumbents facing smaller rivals who need to “scale up” to compete efficiently, misallocation of spectrum could impede these smaller rivals’ ability to rapidly acquire scale, and perhaps permanently retard their ability to compete effectively.

⁴⁹ Oftel, the precursor to Ofcom in the U.K. did briefly pursue a goal of five MNOs but ultimately abandoned this view. In most countries, the debate about the optimal market structure has addressed the number of infrastructure-based competitors, who typically have or can offer services at both retail and wholesale levels. Thus a “5-to-4” merger has typically implied a reduction in the number of infrastructure-based vertically integrated players from five to four. However, an industry configuration featuring 4+1 infrastructure-based players, where the “plus one” player is wholesale-only, is no more or no less sustainable than a five-player industry structure where all the players are vertically integrated. This is because the constraint on the number of viable competitors is linked to the size of the sunk capital costs (including the often-substantial costs of spectrum acquisition) that must be incurred to deploy network infrastructure, and not to vertical integration between wholesale and retail. The reference we make to “infrastructure-based” operators should not be taken to preclude some degree of sharing of infrastructure between operators, e.g., there are four (national) infrastructure-based operators in the U.K., even though these operators have arrangements with each other to share significant parts of their infrastructure.

⁵⁰ GSMA (2020), “Mobile market structure and performance in Europe: Lessons from the 4G era,” p. 8 and Figure 3. Available at: https://www.gsma.com/publicpolicy/wp-content/uploads/2020/01/GSMA-Mobile-Market-Structure-and-Performance-in-Europe_February20.pdf

- USA 4 → 3 (Sprint/T-Mobile in 2019).⁵¹
65. Such consolidation is not just confined to the developed world. In India, by 2019, three carriers—Vodafone Idea, Bharti Airtel, and Reliance Jio—served 90% of the more than 1 billion mobile subscribers in the country.⁵² One can expect that with a fresh cycle of capital expenditures required to fund 5G networks, with some observers such as the GSMA suggesting that further consolidation is required in order to drive the massive investments required.⁵³
 66. There is strong, globally uniform, evidence to indicate that effective competition and hence lower prices and greater customer choice is not synonymous with increasing the number of players in the market. The South African experience also suggests that entry into the market has not resulted in more effective competition. The third (Cell C) and fourth (Telkom) mobile operators to enter the market have struggled to gain significant market share or place any significant competitive constraints on the incumbents, as highlighted in the DSMI Report. Largely due to structural features of the market, and Vodacom and MTN have retained the ability to price independently of the competition. Recently Cell C’s fortunes have declined rapidly to the extent that it is in the process of shutting down its RAN. Rain entered the market in 2017, but its data-only retail proposition remains limited in scale and does not directly compete with Vodacom (or MTN’s or Telkom’s) offerings in mobile broadband. As discussed above, Rain has described itself in the past as a “performance layer” for Vodacom.⁵⁴ It is therefore not clear that adding additional operators will result in better competitive outcomes for consumers.
 67. It is therefore possible that the goal of improving the state of competition, and thereby increasing the affordability of mobile broadband services in South Africa, could be better served by an alternative approach. Competition between three or four robust infrastructure players (possibly supplemented by MVNOs) might yield more effective

⁵¹ In some cases, 4-to-3 mergers have been permitted with significant remedies, designed to divest assets or spectrum with the intention that the consolidation in the market will be countered by new entry, e.g., Sprint/T-Mobile in the United States. The tendency for markets to consolidate to three or four national operators is observed across a wide variety of nations and geographies. It is driven clearly by supply-side factors such as the sunk deployment costs associated with mobile networks, economies of scope that may exist in providing coverage across different locations and regions, and demand-side factors such as consumers’ preference for national coverage. These factors are present in South Africa just as surely as they are in Germany or Greece.

⁵² Sethuraman, Nellur (2019), “Factbox: India’s telecom sector on the ropes after \$13 billion levy ruling”, Reuters, November 28th, 2019, available at <https://www.reuters.com/article/us-india-telecoms-factbox-idUSKBN1Y20TQ>.

⁵³ Mobile World Live (2019), “GSMA head backs consolidation for 5G boost”, available at <https://www.mobileworldlive.com/featured-content/top-three/gsma-head-backs-consolidation-for-5g-boost>.

⁵⁴ Rain’s CEO Willem Roos stated that as of October 2019: “The biggest portion of our business is our wholesale roaming services. We are a performance layer for Vodacom – It’s where we get the majority of our revenue....” See *BusinessTech*, “5G provider Rain outlines plans for South Africa”, 8 October 2019, available at <https://businesstech.co.za/news/internet/345078/5g-provider-rain-outlines-plans-for-south-africa/>.

competition than markets with, say, two leading players and three significantly smaller, chasing firms.⁵⁵

68. ICASA's approach risks cementing or worsening the current market structure – i.e., a highly concentrated market dominated by two strong operators. It does not recognise that the goal of effective competition requires, at a minimum, the emergence of an equally-strong third competitor. At the same time, ICASA has adopted a permissive stance to the decisions by the three smallest operators – Cell C, Liquid, and Rain – to share their spectrum with the dominant firms. It seems obvious that these firms would have been less willing to “partner” with Vodacom and MTN had they been strong vertically integrated infrastructure-based competitors themselves.

B. ICASA's auction design will not even ensure a viable 4+1 market structure

69. Setting aside the wisdom of pursuing a “4+1” market structure, ICASA's proposals likely will not realise this outcome. The two key problems ICASA ignored in the Competition Assessment, and does not mention in the Second IM, are that Cell C is not a national wholesaler anymore, and that that the current plan for the WOAN seems destined to minimise its chances of flourishing into a meaningful “plus one” national competitor. Furthermore, these two problems are linked and the former compounds the latter. Cell C cannot fulfil the competitive role ICASA envisages for it, meaning that the WOAN must take on more “responsibility” for strengthening competition than ICASA currently envisions.

70. To recap before proceeding:

- ICASA states in the Competition Assessment that Vodacom, MTN, Cell C and Telkom are “national wholesalers”.⁵⁶
- ICASA also links the concept of a “national wholesaler” to the idea of a “credible competitor.”⁵⁷ That is, ICASA suggests that the “4+1” market structure should contain five strong competitors.

1. Cell C is not a national wholesaler

71. ICASA defines a “national wholesaler” as a, “... licensee that controls access to its RAN and is capable of providing IMT services on a wholesale basis to roaming and MVNO

⁵⁵ For example, if the leading player has a 45 percent share of units (subscribers, or revenues) in the market, the second player has 35 percent, the third and fourth players have 8 percent each and the final player has 4 percent, the resulting HHI (the sum of the squared shares) is 3,394. By contrast, if three players each have a third of the market, the HHI is 3,333. To the extent that the HHI is a good indicator of effective competition, there is more effective competition in the latter scenario than the former.

⁵⁶ Competition Assessment, pg. 81 and footnote 31.

⁵⁷ Competition Assessment, para. 44.

customers”.⁵⁸ However, under immense financial pressure, Cell C has opted to abandon infrastructure-based competition, decommission its RAN,⁵⁹ and to instead rely on MTN and Vodacom for the provision of network services. Cell C already had a traditional national roaming agreement with MTN and this has been expanded to cover the entire country, not just those parts where Cell C previously lacked its own RAN coverage. The two also entered into wholesale agreement whereby Cell C would lease capacity on MTN’s active RAN equipment. Cell C had also reached a roaming agreement with Vodacom. Cell C would transfer all of its post-paid traffic to the Vodacom network. This presumably meant that Cell C’s pre-paid traffic was transferred to the MTN network. Cell C has confirmed that it does not share active RAN equipment with Vodacom and that the arrangement is purely a roaming deal.⁶⁰

72. Cell C now describes itself as a “... significant wholesale buyer of network capacity and infrastructure services.”⁶¹ This automatically raises serious questions about Cell C’s ability to supply wholesale inputs to others, i.e., to act as a “national wholesaler”. It may still serve wholesale customers (its MVNO customers), but it will do so using the MTN network, not its own. In its agreement with MTN, Cell C contributes no RAN assets whatsoever. It contributes only its spectrum, and every aspect of its “virtualised” RAN depends on MTN’s RAN.

73. These developments raise serious questions about Cell C’s relevance as a competitor to the remaining vertically integrated infrastructure-based operators. If Cell C admits that it relies on Vodacom and MTN for critical wholesale inputs including its RAN, then almost by definition it cannot compete effectively against them. Cell C’s relationship to MTN and Vodacom is now predominantly vertical, not horizontal. Cell C’s new business model more closely resembles that of an “advanced” MVNO, not an MNO.⁶² It may possess spectrum licences and serve MVNO customers, but only because it used to be an MNO, not because it still is an MNO, certainly not in the sense intended by the concept of a “national

⁵⁸ Competition Assessment, pg. 79 (footnotes 26 and 27).

⁵⁹ See for example, *MyBroadband* (2020), “Cell C will shut down its network soon – Here is what will happen”, 23 October 2020, available at <https://mybroadband.co.za/news/cellular/372400-cell-c-will-shut-down-its-network-soon-here-is-what-will-happen.html>

⁶⁰ Gavaza, M (2021). “PODCAST | Progress made in implementing Cell C’s new network strategy,” 09 July 2021, available at, <https://www.businesslive.co.za/bd/companies/telecoms-and-technology/2021-07-09-podcast-progress-made-in-implementing-cell-cs-new-network-strategy/>

⁶¹ *BusinessTech*, (2021), “Cell C begins customer migration – what you need to know”, 13 January 2021, available at <https://businesstech.co.za/news/mobile/460578/cell-c-begins-customer-migration-what-you-need-to-know/>

⁶² As noted above, ICASA has (correctly) stated that a national wholesaler must be a “credible competitor”. In other words, the definition of a national wholesaler is not limited to technicalities regarding access to or ownership of its own RAN, but also encompasses the notion that any such operator must be an effective competitor, and all such operators should be similarly competitive.

wholesaler". Cell C had already decommissioned 34% of its physical RAN sites by June 2021, with plans to decommission a further 10% in the next six months.⁶³

74. In the Competition Assessment, ICASA did not acknowledge that Cell C has exited infrastructure-based competition. ICASA still has not acknowledged this in the Second IM. ICASA appears to remain of the view that Cell C is a national wholesaler (based on a very literal reading of the definition of "national wholesaler" that it borrows from the U.K.'s Ofcom, an issue we discuss below). Or, possibly, ICASA believes that another operator will replace Cell C as a national wholesaler post-auction. But ICASA has not stated this anywhere, and in any case such a belief would be difficult to support. ICASA's market structure goal of 4+1 national wholesalers who are all credible competitors therefore appears to be divorced from market realities.

2. The WOAN is unlikely to become viable

75. ICASA has decided to set aside 80 MHz of spectrum for the WOAN, split across the 700/800 MHz, 2600 MHz, and 3500 MHz bands. The WOAN will not be permitted to bid in the auction and will thus be limited to 80 MHz until such time as another auction is arranged, or the WOAN manages to acquire spectrum via other means. ICASA has not laid out any mechanism by which the WOAN could acquire additional spectrum.
76. ICASA considers that 80 MHz of spectrum is sufficient for the WOAN to become a credible national wholesaler. ICASA believes that 80 MHz is the appropriate amount of spectrum to give to the WOAN because that is roughly how much the two leading incumbent operators have today.⁶⁴
77. Being limited to 80 MHz may place the WOAN at a significant competitive disadvantage given that other licensees will be able to increase their holdings to 184 MHz or close to that level. This will be in addition to another major disadvantage, which is the WOAN's exceedingly late entry into a mature market where other later entrants (who have been active for over 10 years in the case of Telkom and nearly 20 years in the case of Cell C) have failed to significantly alter the dominant market positions of Vodacom and MTN.
78. On a more basic level, even if 80 MHz may have proven sufficient for Vodacom and MTN to grow into dominant operators, the context in which that occurred cannot simply be ignored. Vodacom and MTN were the first to enter, and both entered at the same time and long before the next entrant, Cell C, which entered seven years later. Vodacom and MTN thus benefited from significant first mover advantages, many of which now act as barriers to entry. Additionally, Vodacom and MTN benefitted from regulatory assistance in the form of asymmetrical call termination rates from Telkom's fixed line services which

⁶³ Tech Central (2021), "Cell C switches off physical radio network in three provinces", <https://techcentral.co.za/cell-c-switches-off-physical-radio-network-in-three-provinces/170412/>.

⁶⁴ ICASA, "Reasons Document", Government Gazette, 4 December 2020, pg. 72 and Competition Assessment, pp. 98-99.

helped to fund their network builds. A new entrant today must overcome those barriers to entry. It is highly unlikely that a new Vodacom entering today with 80 MHz would be able to reach scale and become profitable and competitive. The same applies to the WOAN.

79. ICASA has been open about its concerns that the WOAN may not be viable. In the Reasons Document, it said that, "... case studies show that the concept of a WOAN has not been viable in other parts of the world, and as such, there is a potential substantial risk of stranded spectrum in the WOAN hence the Authority assigned an adequate portion of the IMT spectrum."⁶⁵ It expressed concern that spectrum may be "stranded" in the WOAN if it is assigned "too much". ICASA also required, in the IMT ITA, that all winners of spectrum provide open access to MVNOs, even though MVNOs might be expected to be a core customer constituency for the WOAN.
80. It seems self-defeating and contradictory for ICASA to simultaneously plan on the WOAN being a credible fifth national wholesaler while also expressing concerns about its viability. Further, by giving the WOAN only 80 MHz of spectrum and by imposing MVNO access mandates on other operators, ICASA'S concerns about the WOAN'S viability are likely to become self-fulfilling. This will ensure that whatever spectrum is set aside for the WOAN will, in fact, become stranded.

C. The implications for auction design

81. The current status of Cell C and the potential for the WOAN to be stillborn indicate that ICASA'S intended market structure is unlikely to materialise. Instead ICASA'S proposals create an elevated danger that the two incumbent operators maintain and enhance their market power without providing Telkom and the WOAN with what they need to become more credible competitors (Telkom might particularly lack access to valuable sub-1GHz spectrum, discussed further below). While Rain and Liquid have expressed their intent to participate in the auction, it is unlikely that they will "graduate" into credible national wholesalers, at least not in a way that challenges rather than underpins the duopoly of the incumbents.⁶⁶

⁶⁵ ICASA "Reasons Document", Government Gazette, 4 December 2020, pp. 73-74.

⁶⁶ Liquid has stated clearly that it has no intention to operate in the consumer retail market for any wireless services. Liquid'S intentions in respect of the auction are likely to obtain more spectrum that can be re-sold to Vodacom or MTN via the network and spectrum sharing agreements it already has in place with those two operators. Rain'S 4G and 5G offerings are heavily focused on the fixed-wireless market, not the mobile market. Moreover, its 4G business is predominantly a wholesale operation serving Vodacom'S capacity needs. Rain'S 4G retail business is limited, capacity-constrained, and suffers from well-known quality of service problems. Rain is actively moving 4G customers to its 5G network where it can. Thus, while Rain may intend to use some of the spectrum it may acquire at auction for its 5G business, that business is so far focused on fixed-wireless products, not the core mobile businesses of Vodacom and MTN. Moreover, Rain may well intend to acquire more 4G spectrum for re-selling to Vodacom via the network and spectrum sharing agreements between those two operators.

82. These market realities should have been reflected in the Second IM, particularly as a failure to achieve the intended market structure has profound consequences for the design of the impending auction. ICASA should either (a) urgently reassess whether a firm that describes itself as a large-scale buyer of wholesale inputs can sensibly qualify as a national wholesaler; (b) whether its planned spectrum caps based on four credible national wholesalers and the WOAN make sense when there are really only three credible national wholesalers and the WOAN; (c) whether some or all of Cell C's spectrum should be reallocated to Telkom or the WOAN; (d) additional measures that could be taken to ensure the viability of the WOAN including a reconsideration of its proposed MVNO access policies; and (d) other remedies such as site access and offtake commitments from other licensees that could assist the WOAN.
83. ICASA should actively be considering a "3+1" market structure objective in this "IM process". That would mean fundamental changes to the auction design set out in the ITAs, particularly in respect of the spectrum caps and floors. We discuss those issues below. Active consideration of a "3+1" market structure objective also means that ICASA needs to reconsider the WOAN's spectrum portfolio. The WOAN needs to take on more "responsibility" for driving competition in a "3+1" market. To do so, it will require a spectrum set larger than 80 MHz, and, quite likely, other forms of pro-competitive regulatory assistance. ICASA would need to carefully consider whether the WOAN will require guaranteed access to sites belonging to other operators and "Towercos", stronger offtake pre-commitments from other licensees, and whether the WOAN should be the only wholesale network operator allowed to serve MVNOs. The implications for the auction design, e.g., floors and caps, flowing from Cell C's current status are particularly striking, as we discuss below.

1. ICASA should reconsider the design of the caps given market realities around Cell C

84. More specifically on the issue of spectrum caps, ICASA states in its Reasons Document that the overall cap of 184 MHz is:

... based on ensuring that no operator obtains more than approximately 18% of the overall spectrum available (1,015MHz), which allows equal allocations of spectrum for at least 5 national wholesale operators and makes allowance for at least one additional sub-national operator. At the same time the overall spectrum cap allows all tier 2 operators to add at least 40MHz of spectrum to their current holdings (including sub-1GHz spectrum)⁶⁷(emphasis added).

85. The total cap is clearly based on the inclusion of Cell C in ICASA's total of "at least 5 national wholesale operators". Similarly, the statement that the overall cap allows "all

⁶⁷ ICASA, "Reasons Document", Government Gazette, 4 December 2020, pg.115.

Tier-2 operators” to add to their existing holding implicitly includes Cell C because the only other national Tier-2 operator in the market currently is Telkom. Given that Cell C is not a national wholesaler, these caps should be redesigned based on the market reality that there are currently only three national wholesalers operating, and the WOAN would become the fourth.

86. The fact that Cell C shares its spectrum with MTN adds gravity to the issues highlighted above. Our ITA Reports highlighted that, in practice, Cell C has effectively made its spectrum available to MTN, and MTN has acquired access to that spectrum without having gone through a licensing process. We discuss this in greater detail later in this report. Previous statements by MTN’s then-Group CEO, Rob Shuter indicated that MTN was likely to use Cell C’s spectrum and ICASA’s MBSI Findings Document confirms that such use is happening.^{68, 69}
87. Thus, the challenge created by Cell C’s predicament is not merely that it may be in possession of spectrum that could be put to more effective use by remaining infrastructure-based operators – in particular, by challenger operators. The challenge is that this spectrum is already very likely to be under the *de facto* control of MTN.

2. Reconsidering Cell C’s status could permit pro-competitive reassignment of spectrum

88. Lastly, the question of Cell C’s status and need for spectrum also cuts across the issue relating to sub-1 GHz spectrum. That is, the issue caused by the facts that Telkom, the WOAN, and other smaller operators have no sub-1 GHz spectrum, and that none of the sub-1 GHz spectrum that these operators may obtain through the spectrum licensing process will be available for their sole and exclusive use until such time as the digital migration process is completed. In the interim, it will instead have to be used on a coordinated basis with broadcasters.
89. As we highlighted in Our ITA Reports, Cell C has 22 MHz of 900 MHz that suffers no interference from broadcasters. Cell C’s new operating model casts doubt over Cell C’s need for that spectrum. MTN is likely using that spectrum instead. This strongly suggests an opportunity for ICASA to devise an “interim” solution to the digital migration problem. ICASA could encourage a process of reassignment of all Cell C’s spectrum holdings alongside a broader re-farming of the 900 MHz spectrum to create more efficient, contiguous bands of spectrum (we understand from Telkom that such re-farming of 900

⁶⁸ *MyBroadband*, (2020), “All Cell C network traffic will move to MTN—But not until it can pay its bills”, Jamie McKane, August 7th, available at <https://mybroadband.co.za/news/telecoms/363014-all-cell-c-network-traffic-will-move-to-mtn-but-not-until-it-can-pay-its-bills.html>.

⁶⁹ Mr. Shuter also stated in a separate remark that MTN intended to make use of some of Cell C’s spectrum in the future. TeleGeography CommsUpdate (2020), “Cell C to migrate all traffic onto MTN network post-recapitalisation”, 10 August 2020, available at <https://www.commsupdate.com/articles/2020/08/10/cell-c-to-migrate-all-traffic-onto-mtn-network-post-recapitalisation/>.

MHz spectrum was already supposed to have taken place) to make the 900 MHz spectrum available to all players for purposes of providing mobile data services. The future availability of this spectrum would also provide the industry with a further “hedge” against the uncertainties associated with the digital migration process.

90. If these avenues were not or are not legally feasible, then ICASA ought to consider rules requiring Cell C to lease capacity to or share capacity with not just MTN but with Telkom and the WOAN, potentially at regulated rates.
91. As we noted in Our ITA Reports, the implications of Cell C’s changed status have extensive and significant implications for the market and the spectrum licensing process. The Second IM was an opportunity for ICASA to at least signal acknowledgement that this issue is relevant and serious. ICASA has not done so in the Second IM. If it intends to continue to deny the relevance of this issue and proceed with a spectrum licensing plan that does not differ significantly from the plan proposed in 2019-2020, then the issue of Cell C’s status will again threaten to undermine that plan in its entirety.

D. A comment on ICASA’s reliance on Ofcom

92. As a separate issue, we comment on the seeming rationale for ICASA’s methodology for identifying national wholesalers. ICASA appears to be relying heavily on a 2012 assessment by the U.K. telecommunications regulator, Ofcom.⁷⁰ ICASA took from this assessment the concept of a “credible national wholesaler”, and stated that, “... Authority has adapted Ofcom UK’s 2012 broad analytical framework to assess the spectrum that a national wholesaler is likely to need to be capable of being a credible national wholesaler.”⁷¹ By virtue of the fact that the Second IM does not indicate otherwise, we assume that ICASA continues to rely on Ofcom in these respects.
93. Our ITA Reports identified several reasons for concern over ICASA’s use of and reliance upon Ofcom’s thinking. The main overarching reason, however, is that Ofcom’s ideas and thinking, for example in defining something called a “credible national wholesaler” were devised within and with specific reference to the market context in the U.K. They were not intended to be, nor are they universally applicable concepts. If they are to be utilised in fundamentally different market contexts – South Africa’s market differs fundamentally from that in the U.K. in many respects – then it stands to reason that they should be adapted accordingly. ICASA made no such adaptations when “borrowing” Ofcom’s concepts. Indeed, ICASA appears not to have even attempted to understand whether the market context in which Ofcom devised them was different to that which ICASA is attempting to influence now, through the spectrum licensing process.

⁷⁰ Ofcom (2012), Consultation on assessment of future mobile competition and proposals for the award of 800MHz and 2.6GHz spectrum and related issues. 24 July 2012.

⁷¹ Competition Assessment, para. 57.

94. First of all, Ofcom’s concept of “national wholesaler” could never have been intended to apply to a firm like Cell C because no such equivalent exists in the UK market. Cell C no longer owns or operates its own RAN and, according to its own words, is a “... significant wholesale buyer of network capacity and infrastructure services.”⁷² This almost exactly matches Ofcom’s definition of an MVNO, which was set out in the same 2012 Ofcom document to which ICASA repeatedly refers. Ofcom defines MVNOs as mobile service providers that, “... purchase wholesale access to national networks and retail their own services without owning RANs”.⁷³
95. Secondly, ICASA seems to have equated the network sharing arrangements that exist in the U.K. to the likes of those in South Africa between MTN and Cell C, or between Vodacom and Rain. The two cannot be equated; they differ in fundamentally important respects.
- Ofcom’s definition of a national wholesaler was designed to ensure that UK MNOs party to “active RAN sharing” agreements could still be classified as “credible national wholesalers”. ICASA seems to have taken this as support for the idea that Cell C could still be defined as a “national wholesaler” even though it is completely dependent on MTN and Vodacom.
 - In this regard, ICASA has failed to appreciate that the network sharing agreements in the UK are all fundamentally different from the Cell C agreements with MTN and Vodacom. There is no agreement in the UK in which one firm contracts directly for access to a RAN with a rival firm for all elements of its services (e.g., 3G, 4G, and 5G) in all geographies. The active RAN sharing arrangements in the UK cover only some of the services or technologies provided or geographies served.⁷⁴ The arrangement between Cell C and MTN, by contrast, is not a “RAN sharing” agreement. Cell C does not bring any RAN assets to the table, and nor does it plan to contribute to a “joint” or “shared” RAN with MTN. It leases capacity on MTN’s physical RAN, and it appears to us that, at least implicitly, some of the consideration that MTN receives for this lease arrangement is in the form of access to Cell C’s spectrum.
 - Moreover, all network sharing in the UK take the form joint ventures (“JVs”) to which participating MNOs contribute assets. The JV manages and operates the shared parts of the network. Arrangements such as arms-length JVs tend to mitigate competition problems arising from cooperation between competitors.

⁷² *BusinessTech*, (2021), “Cell C begins customer migration – what you need to know”, 13 January 2021, available at <https://businesstech.co.za/news/mobile/460578/cell-c-begins-customer-migration-what-you-need-to-know/>

⁷³ Ofcom (2012), “*Consultation on assessment of future mobile competition and proposals for the award of 800MHz and 2.6GHz spectrum and related issues*”, Annex 6: Competition Assessment, ¶2.2 iii).

⁷⁴ See CERRE (2020), *supra.*, pg. 78.

The impact of network sharing on the ability of the contributing MNOs to compete independently and effectively is therefore limited.

96. The arrangement between Cell C and MTN is completely different in its likely impacts on competition. There is no independent JV, and the arrangement apparently covers all technologies and geographies. Cell C is completely reliant on MTN's RAN for any services it wishes to provide itself to its pre-paid customers (as opposed to just reselling MTN's roaming service), and completely reliant on a roaming service from Vodacom for services supplied to all of its post-paid customers. These arrangements are likely to have far larger impacts on Cell C's ability to compete than the UK network sharing arrangements have on UK MNOs. As stated previously, Cell C's change of status makes the relationship between it and MTN and Vodacom predominantly vertical, not horizontal. Cell C cannot be a credible national wholesaler.
97. Ofcom's definition of national wholesalers was forged in the context of those arrangements between competitors in the UK market and the level of rivalrous conduct they permitted. Even if this definition allows for a firm that contracts for access to a RAN to qualify as a wholesaler, it does not mean that one can simply ignore the nature of that contractual arrangement. Ofcom did not have to address a situation in which a provider of mobile services was planning to entirely rely (via a direct contract with its rival) on a rival's radio network for all services in all geographies, as Cell C will be doing on MTN's network. Thus, the adequacy of Ofcom's definition of national wholesalers was not tested by circumstances similar to those in South Africa today. ICASA cannot just rely on Ofcom's wording to excuse its seeming neglect of Cell C's circumstances.
98. Of course, from a basic economic perspective—regardless of whatever it is that Ofcom did or did not say—there is a basic distinction between firms that are vertically integrated and self-supply their own critical inputs and firms that are not. In particular, if a firm has very limited alternative suppliers of critical inputs (e.g., sites and radio-equipment), who are also rivals in the downstream market, then it is vulnerable to margin squeezes and other types of exclusionary behaviour. In effect, its rivals have the opportunity to limit or exclude it from competing in the downstream market—it is not a competitor on an equal footing.

E. Summary of Section IV

99. In short, ICASA's starting point—at least as this was expressed in the Competition Assessment accompanying the IMT ITA which we expect to still be the guiding light of ICASA's current efforts—is a muddled commitment to a five-player market structure and a half-hearted commitment to the WOAN. This half-hearted commitment probably elevates the likelihood of ICASA's fears about stranded spectrum and an unviable WOAN coming to fruition. One likely outcome from following through with the ITAs is thus two ever-more-dominant incumbents, continued constraints on Telkom's ability to grow, a Cell C that is in all but name an MVNO that relies on MTN and Vodacom for its ability to provide any services, and a weak WOAN.

100. Conversely, by recognising the status of Cell C—and the limitations of wholesale and uncritical reliance on a foreign regulator for intellectual guidance—ICASA could revisit its proposed 184 MHz per operator cap and consider redistributing some of Cell C's spectrum to existing or potential new operators, especially Telkom and the WOAN. This would result in more balanced spectrum holdings (particularly if Telkom could access some of the sub-1GHz spectrum), more spectrum for actually viable operators, and more spectrum for the WOAN. ICASA could also consider time-limited exclusivity for the WOAN with respect to the provision of capacity to MVNOs.

V. NETWORK AND SPECTRUM SHARING AGREEMENTS

A. Introduction

101. The auction design proposed by ICASA in the 2020 IMT ITA included spectrum caps that would have limited operators' spectrum holdings to 2x21 MHz of sub-1 GHz and 184 MHz overall, post auction.⁷⁵ The spectrum caps were intended to take account of existing holdings so, for example, an operator with 84MHz of existing spectrum could bid for a maximum of 100 MHz of additional spectrum in the auction (subject also to the 2x21 MHz sub-1 GHz cap). The purpose of such spectrum caps is to prevent larger operators from acquiring an unassailable spectrum advantage and thereby preventing effective competition. (We understand that ICASA now intends to exclude the 3600-3800 MHz band, in which Rain holds 80 MHz of spectrum, from the calculation of the cap, reducing the maximum permissible per-operator holding from the 184 MHz discussed above. For purposes of the discussion below, however, the exact level of the final cap is not relevant, only the possibility that the principle of symmetrical caps will in fact be violated).
102. One of the major shortcomings of the IMT ITA (and one of the factors that ultimately led to Telkom launching its legal challenge to the process) was that the auction design, and specifically the spectrum caps, took no account of the additional spectrum Vodacom and MTN have gained access to via a series of network and spectrum sharing deals with smaller players. In our previous submissions, we pointed out that the sharing deals give Vodacom and MTN access to substantially more spectrum than their current licensed holdings would suggest and that Vodacom and MTN use this additional spectrum to offload excess demand or offer higher download speeds to their subscribers. Ignoring the implications of the sharing deals, the auction would enable Vodacom and MTN to acquire spectrum up to the cap of 184 MHz and then supplement this with additional spectrum, without limitation, from Rain, Liquid and Cell C. Telkom, by contrast, would be faced with a "hard" cap of 184 MHz cap. The resulting *de facto* asymmetry would fundamentally undermine the competition-enhancing aims of the cap.
103. The Second IM, however, provides no indication that ICASA has taken these concerns onboard or altered its view on the implications of the sharing deals. ICASA has previously taken the view that the sharing deals are transitory and pro-competitive and therefore do not need to be considered as part of the auction design. The Second IM states:

"Roaming is considered as a commercial arrangement between operators which are filed with the Authority from time-to-time. Generally, a roaming arrangement is not permanent and may be revised or terminated by the concerned operators and should not exclusively be entered into amongst

⁷⁵ As mentioned above, ICASA may be reconsidering the precise level of this cap, as it now proposes (see paragraph 1.3.2 of the Second IM) to exclude spectrum in the 3600 MHz to 3800 MHz band from its calculations of the cap.

operators. These roaming arrangements can be offered to multiple operators.” (Second IM, 1.4.1)

104. The Authority’s rationale for ignoring the sharing deals in designing spectrum caps appears to be based on the following premises:

- The deals are “not permanent and may be revised or terminated by the concerned operators”; and
- The deals are not exclusive and “can be offered to multiple operators”.

105. In the following sub-sections, we show that the Authority’s premises are incorrect.

B. Sharing deals are relatively permanent

106. The Authority’s view that the sharing deals can be ignored in the auction design because they are transitory and can be terminated by the concerned party does not stand up to scrutiny for several reasons. First, in reality, the Rain and Liquid sharing deals are all long-term agreements. For example, the 2016 Vodacom-Rain Agreement has an initial term of seven years for Vodacom with 36 months’ notice thereafter and an initial term of six years for Rain plus a two-year notice period.⁷⁶ Rain director Michael Jordaan also recently stated that “the wholesale agreement between Rain and Vodacom is of a long-term nature”.⁷⁷ The Vodacom-Liquid Agreements have a term of twenty years,⁷⁸ while the MTN-Liquid Agreement has a 15-year term.⁷⁹ The details of the MTN – Cell C agreements are not publicly available, but given the well-publicised fact that Cell C has taken the decision to decommission its RAN and instead lease capacity from MTN, it is reasonable to assume and very likely that the parties have entered into a long-term agreement.

107. Second, the nature of these arrangements means that the various parties are effectively “locked in” for an extended period. Rain, Liquid and Cell C are financially and operationally dependent on their respective roaming partners and have little or no scope to terminate the agreements without undermining their own businesses. It is clear from information in the public domain that Rain’s 4G network and Liquid’s 4G and 5G networks would not

⁷⁶ Competition Commission, “Supplementary Explanatory Affidavit”, CT CASE NO: FTN143Oct20, (non-confidential version), ¶32.

⁷⁷ *MyBroadband*, (2021), “Michael Jordaan answers tough questions about Rain’s spectrum fight”, Rudolph Muller, 28 October 2021, available online at <https://mybroadband.co.za/news/cellular/420268-michael-jordaan-answers-tough-questions-about-rains-spectrum-fight.html>.

⁷⁸ Liquid Telecom, “Financial Results for the Fourth Quarter and Full Year Ended 29 February 2020”, p. 5.

⁷⁹ It is not clear from Liquid’s published financial under what circumstances it could terminate either of its sharing deals.

exist without the long-term tenancy provided by Vodacom and MTN.⁸⁰ Liquid announced its plans to build a 5G network after it had concluded a roaming deal with Vodacom. It is not clear what Liquid intends to do with this 5G network other than making the available capacity available to Vodacom on a so-called roaming basis. The primary economic function of these networks is therefore to provide additional capacity to Vodacom and MTN.

108. Additionally, Rain's 4G network as well as Liquid's 4G and 5G networks are not new physical networks, but rather parallel, "virtual" networks built on Vodacom and MTN's existing physical network infrastructure. Rain's 4G network, for example, consists of a mixture of Rain owned active equipment (eNode-Bs) co-located on Vodacom sites⁸¹ and active RAN sharing sites where Rain's "network" is simply a software-based virtual carve out of Vodacom's physical network. When Vodacom "roams" on Rain's 4G network, it does so largely using its own RAN. Without the physical infrastructure provided by Vodacom as part of the Vodacom-Rain Agreement, Rain would have no 4G network and, as a result, no ability to exploit its spectrum assets or serve its own retail customers.
109. Furthermore, if Rain were to terminate its agreement with Vodacom, the only viable alternative infrastructure provider would be MTN and given MTN's existing sharing agreements with Liquid and Cell C, it may not be willing, or able to accommodate Rain. Additionally, by the time Rain is in a position to potentially terminate the agreement with Vodacom and move to MTN, MTN is likely to have acquired additional spectrum of its own through the auction process and therefore would be unlikely to offer equally favourable terms.
110. Similarly, Liquid's 4G and 5G networks are in practice no more than virtual carve outs of MTN and Vodacom's respective 4G and 5G RANs.⁸² If Liquid terminated either of these agreements, it would lose the ability to exploit its spectrum assets and its only source of mobile revenue. Liquid's only viable alternative 4G infrastructure partner would be Vodacom, but for the same reasons given above, Vodacom may not be willing or able to accommodate Liquid, at the very least, not on the same terms. Liquid could potentially partner with MTN to exploit its 5G spectrum, but again, it is unclear whether MTN would have any interest in doing so if it acquires sufficient 5G spectrum of its own through the auction process.

⁸⁰ We note that Liquid's submission to ICASA in response to the IMT ITA characterised Liquid's spectrum business as having "Long term tenants in South Africa with predictable cash flows." Liquid submission to ICASA in response to the IMT ITA, pp. 6 and 11.

⁸¹ Competition Commission, "Supplementary Explanatory Affidavit", CT CASE NO: FTN143Oct20, (non-confidential version), Brierley Report, p. 5.2

⁸² Vodacom and Liquid concluded a managed network services agreement in December 2019. See <https://www.vodacom.com/news-article.php?articleID=7485>

111. Cell C's scope to terminate its agreement with MTN is also severely curtailed by the fact that it is in the process of decommissioning its RAN and is now operationally reliant on wholesale capacity leased from MTN. It is also worth noting that MTN has continued to provide roaming services to Cell C despite Cell C struggling to pay for those services. This suggests that the benefits associated with access to Cell C's spectrum outweigh the costs of providing a roaming service to Cell C.

C. Sharing deals are de facto exclusive

112. The Authority's second premise is that the sharing deals are non-exclusive and that the spectrum resources currently licensed to Rain, Liquid and Cell C can be offered to other operators. Although the various sharing agreements may include contractual provisions characterising the agreements as "non-exclusive", the deals all appear to be *de facto* exclusive. Rain has a limited retail business, but its only 4G wholesale customer is Vodacom. Liquid has no consumer retail business and its only wholesale customers are MTN on its 4G network and Vodacom on its 5G network. The MTN – Cell C deal is somewhat opaque, but it appears that MTN now has at least effective access to Cell C's licensed spectrum and Cell C's prepaid customers are served using Cell C's spectrum and MTN's RAN with MTN also "reverse roaming" for capacity on Cell C's spectrum.

113. Not only are the sharing deals all currently *de facto* exclusive, Rain and Liquid's market conduct indicates that sharing agreements create financial and other incentives that reinforce and maintain this exclusivity. For instance, Rain throttles its own 4G retail customers by limiting download speeds, discourages usage during peak hours and places limits on streaming quality. Additionally, Rain has introduced various offers that encourage its 4G customers to upgrade to a 5G service at little or no additional cost.⁸³ ICASA is also aware that Vodacom and Rain have implemented inter-operator carrier aggregation ("IOCA") which amounts to an integration of Rain's spectrum resources with Vodacom.⁸⁴ This conduct only makes sense if Rain effectively reserves capacity for Vodacom's use, hence some capacity on its own network is "off limits" to Rain.

114. In April 2020, MTN and Liquid applied for, and received, permission to pool their spectrum resources.⁸⁵ Spectrum pooling, like inter-operator carrier aggregation goes beyond what is required for traditional roaming arrangements and involves integrating the spectrum

⁸³ For example, in September 2021 Rain introduced a new Home Basic 5G packages that offers download speeds of up to 25 Mbps and video streaming quality of 720p for R499 per month. In comparison, Rain's Unlimited 4G service is priced at R479 per month and offers speeds of up to 10 Mbps and basic streaming resolution of up to 360p. See *MyBroadband*, "Rain launches cheap 5G package – R499 per month", Jan Vermuelen, 13 September 2021, available online at <https://mybroadband.co.za/news/5g/413790-rain-launches-cheap-5g-package-r499-per-month.html>

⁸⁴ *MyBroadband*, (2021), "Rain's plan to make money", Rudolph Muller, 23 March 2021, available online at <https://mybroadband.co.za/news/business-telecoms/390256-rains-plan-to-make-money>.

⁸⁵ ICASA Council Decisions – 24 April 2020, available online at <https://www.icasa.org.za/uploads/files/Council-decision-24-April-2020.pdf>

resources of the parties involved. Spectrum pooling does not make economic or operational sense except as part of long-term, exclusive arrangements. With respect to Vodacom and Rain, the IOCA arrangement between them means that Vodacom users' experience can be supported by Rain's spectrum even when that user is not roaming on Rain's network. Instead of Vodacom relying on Rain to provide one component of the supply chain, as would be the case with roaming⁸⁶, Rain's spectrum is effectively incorporated into Vodacom's supply chain. This type of integration of assets also only makes sense when the parties expect to be in a tight long-term relationship (such as created by a merger or joint venture).

D. Failure to account for sharing deals will result in asymmetry despite caps

115. The most obvious consequence of ignoring the sharing deals in the auction design is that it will permit a situation, post auction, in which Vodacom and MTN have access to substantially more than 184 MHz of spectrum (or whatever is the level of the allegedly symmetrical cap that ICASA determines anew) while other operators, including Telkom, are subject to a "hard" cap of 184 MHz. This asymmetry in favour of the incumbents would undermine the entire rationale for symmetric caps, namely, to ensure a relatively balanced distribution of spectrum holdings and prevent concentration in the hands of the incumbents.
116. Such a concentration of spectrum in the hands of the incumbents would complement other "incumbency" benefits Vodacom and MTN already enjoy such as a large installed subscriber base and ubiquitous network coverage. This would exacerbate and entrench the existing duopoly and make it more difficult for smaller operators to compete. In a worst-case scenario, this asymmetry could even give Vodacom and MTN an unassailable spectrum advantage that makes effective competition impossible.
117. ICASA brushes aside concerns on asymmetric spectrum holdings by invoking Ofcom. It suggests that Ofcom merely applies a cap of 37% of total spectrum holdings per operator—i.e., no operator can have a share that exceeds this level. But otherwise, Ofcom does not pursue symmetry in spectrum holdings as a policy objective in its own right. As with ICASA's other efforts to use Ofcom statements and positions to defend its policy, ICASA does not discuss the critical difference in market context between South Africa and the UK
 - The UK market, unlike South Africa, is relatively balanced. The top two operators have 61% of subscribers (ignoring MVNOs; this figure is much lower at 50% if MVNO retail market shares are taken into account) and the third (Vodafone) has

⁸⁶ In a conventional roaming agreement when a Vodacom customer roams on Rain's network, the customer uses Rain's spectrum only whilst they are roaming. By contrast, with inter-operator carrier aggregation, the Vodacom customer simultaneously uses some of Vodacom's spectrum and some of Rain's spectrum to support their user experience.

25% (21% if MVNO retail market shares are taken into account).⁸⁷ In South Africa, Vodacom and MTN account for about 73% of subscribers even when including MVNOs and Rain.⁸⁸

- Operators in the U.K. are also far less profitable than Vodacom and MTN. In 2020, EE and O2 – the top two U.K. MNOs – posted EBITDA margins of 24% and 31% respectively. Vodacom’s EBITDA margin in 2020 was 42%, while MTN’s was 39%.
- In more competitive markets like the U.K., cost asymmetries induced by differences in spectrum holdings may create less of an overall cost asymmetry between firms than they do in South Africa. In South Africa, the incumbent firms benefit from significantly greater ability to realise economies of scale in their operation, and they also have substantial cost advantages in the form of access to sites and infrastructure. Asymmetries in spectrum holdings will give these firms a marginal cost advantage—e.g., it may allow them to provide a data session to a user at a given level of quality at lower cost compared to their rivals. In this case, asymmetries induced by the spectrum sharing deals will cumulate upon other cost and quality asymmetries. The likely impact of these worsening cost asymmetries is to further undermine the case for investment in challenger networks, and thus hasten the exit or consolidation of such networks—i.e., to entrench and exacerbate the existing duopoly.

E. Risk of Vodacom and MTN gaining access to MSPs

118. A further risk of failing to take account of the sharing deals in the auction design is that Rain, Liquid and potentially even Cell C could acquire additional spectrum through the auction process and then make that spectrum available to Vodacom and MTN. This would further undermine the spectrum caps, increase the incumbents’ spectrum advantages and undermine competition in the market. Liquid has in fact indicated that it intends to include any additional spectrum it acquires through the auction in its existing sharing deals.⁸⁹
119. A particularly perverse outcome would be a scenario in which Rain, Liquid or Cell C obtained additional spectrum via one of the MSPs and then made that spectrum available to Vodacom or MTN as part of an extended sharing deal. The purpose of MSPs is to allow smaller operators to acquire spectrum without having to bid against larger operators.

⁸⁷ For 2020 subscriber data in the U.K., see <https://www.ccsinsight.com/blog/uk-mobile-connections-set-to-recover-from-covid-19/>

⁸⁸ [[Check and reference]]

⁸⁹ Liquid submission to ICASA in response to the IMT ITA, p. 37 states: “*These MNSPs [Managed Network Service Providers i.e., its sharing partners] provide Liquid Telecom with the infrastructure needed to deploy its network (power, mast space, and radio equipment) on radio sites. Liquid Telecom anticipates that it will expand the current MNSP arrangements should it be successful in its bid for additional spectrum.*”

Allowing Vodacom or MTN to access additional spectrum, particularly spectrum notionally set aside to benefit smaller operators, “through the back door” would fundamentally undermine the MSPs.

120. It is worth reiterating that the spectrum holdings currently licensed to Rain and Liquid are legacy assets and were never licensed on the understanding that Rain and Liquid would make that spectrum available to Vodacom and MTN. It cannot be ICASA’s intention that additional spectrum acquired by smaller players like Rain and Liquid via the auction, particularly spectrum set aside as part of the MSPs for the express purpose of boosting competition, should end up at the disposal of Vodacom and MTN. However, without a mechanism to factor in the sharing deals, this is likely to be the outcome of the auction process.

F. ICASA ignored the concerns around sharing deals raised by its advisors

121. ICASA’s ongoing refusal to take account of the sharing deals is surprising given that their advisors, Acacia Economics, identified the sharing deals as an issue that warranted further scrutiny. In the competition assessment produced by Acacia for ICASA in May 2020, Acacia stated:

“... the Authority acknowledges that various announced commercial transactions between wholesale national operators and sub-national operators have enabled the former to have access to substantial additional spectrum assets than Table 2 [summarising operators existing spectrum holdings] suggests. For example, transactions between Vodacom/Rain, MTN/Liquid, Vodacom/Liquid (and perhaps even MTN/Cell C) may have added to the dominance benefits in sites ownership already being enjoyed by Vodacom and MTN discussed above. The details of these transactions are largely commercially confidential and there is an argument for their scrutiny as they arguably more than double the access to spectrum enjoyed in much of the geography of South Africa by Vodacom and MTN than depicted in Table 2.”⁹⁰ [emphasis added]

122. However, when ICASA published its Reasons Document, including a Competition Assessment which was a virtual word-for-word copy of the Acacia document, ICASA omitted the above paragraph and replaced it with the following:

“These comparisons do not prove a causal link between spectrum assignments and prices. Nonetheless, the data highlights that South Africa’s spectrum assignments are relatively low overall, and that more

⁹⁰ First Acacia Report, ¶128.

spectrum needs to be assigned urgently in order to enable cheap, high quality mobile broadband.”⁹¹

123. Given that the failure to take account of the sharing deals in the auction design was one of the grounds on which Telkom initiated legal action against the ITAs, it is surprising that ICASA has not attempted to address the issue as part of the Second IM. It may be, as discussed below, that ICASA considers that it has already addressed the issue via the MBSI process. It is our view, however, that ICASA has, in fact, not done so.

G. Overall impact of the sharing deals is potentially highly anticompetitive

124. As noted above, ICASA has repeatedly expressed the view that the sharing deals are pro-competitive. The MBSI Findings Document acknowledged the asymmetry created by the sharing deals and noted that such agreements (e.g. Vodacom – Neotel and MTN – Telkom) have been found to be problematic from a competition perspective in the past.⁹² However, the MBSI ultimately concluded that these concerns were outweighed by pro-competitive aspects of the sharing deals. In particular, the MBSI suggested that the sharing deals have facilitated the entry and expansion of Rain as a wholesale and retail competitor and promoted Cell C’s continued presence in the retail market.⁹³
125. It is worth noting, however, that Rain and Liquid’s spectrum resources are not currently being used to provide competition to Vodacom and MTN. On the contrary, the spectrum resources Vodacom and MTN have access to via the sharing deals are being used to bolster their respective positions in the market. Rain does have a small retail business of its own, but this is firmly focused on the home internet market and therefore does not compete directly with Vodacom or MTN’s mobile offerings. Furthermore, it is apparent that Rain’s focus is on its 5G business which is not affected by any of the sharing deals. Liquid has no consumer retail business of its own
126. Cell C’s role is more complex because Cell C does compete in the retail market. However, as a wholesale buyer of network capacity from the incumbents (in real terms not very different to an MVNO) Cell C is not able to exert the same competitive constraints as would be the case if Cell C was an independent infrastructure competitor. At a minimum, Cell C’s retail pricing is constrained by the terms of its roaming and network sharing deals with MTN for pre-paid customers and its roaming deal with Vodacom in respect of its post-paid base.⁹⁴ Cell C’s ability to differentiate its post-paid offerings from Vodacom once it has decommissioned its own RAN will be especially limited, since Cell C has

⁹¹ ICASA, Reasons Document, Government Gazette, 4 December 2020, page 95.

⁹² MBSI Findings Document, ¶ 120.

⁹³ MBSI Findings Document, ¶ 122.

⁹⁴ This follows from the fact that roaming fees are now an input cost into Cell C’s service, and there is the potential for such roaming fees to be set in ways that restrict the ability of Cell C to compete aggressively in the retail market.

confirmed that it will not be developing a “virtual RAN” on Vodacom’s network (in contrast to Cell C’s statements that it will be developing a “virtual RAN” on MTN’s network, to serve its pre-paid customers”).⁹⁵ It should also be pointed out that Cell C cannot offer 5G services to its post-paid customers unless those are included in the roaming service provided by Vodacom. Being utterly reliant on another network for 5G services is severely limiting given that most 5G use cases currently revolve around bespoke industrial or commercial applications.

127. There is some evidence that Cell C’s ability or willingness to differentiate its products and pricing from MTN has declined since deciding to decommission its RAN.

- As set out in the DSMI, Cell C first attempted to compete aggressively on price to win share, but then retreated from that strategy over the 2015-2018 period by allowing its headline data prices to rise towards the levels set by MTN and Vodacom. In 2019, however, it cut prices again, seemingly to defend its market position against Telkom, who was still pricing aggressively to win market share.⁹⁶
- Cell C has since stated that part of its new business model and strategy rests on a similar strategy to that which it appeared to adopt in 2015-2018 – not cutting prices aggressively to grow subscriber share. Instead, Cell C has stated that it wants to focus on higher-APRU customers.⁹⁷ This appears to mean – in as far as headline prices are concerned -- that it is no longer attempting to provide an alternative to Telkom, at Telkom’s generally lower prices, but is instead content to mimic more closely the prices of Vodacom and MTN. For example, Cell C recently reduced the headline price of its monthly 1 GB data bundle, which was the highest in the market not long ago. Instead of taking it down to Telkom’s level, it stopped at the higher price levels applied by Vodacom and MTN.⁹⁸
- Even if this results from a conscious strategy, and not from any influence on Cell C’s wholesale input costs being strategically exercised by MTN and Vodacom, the

⁹⁵ Gavaza, M (2021). “PODCAST | Progress made in implementing Cell C’s new network strategy,” 09 July 2021, available at, <https://www.businesslive.co.za/bd/companies/telecoms-and-technology/2021-07-09-podcast-progress-made-in-implementing-cell-cs-new-network-strategy/>

⁹⁶ DSMI Final Report, paras. 200.1 and 216.3.

⁹⁷ “Cell C’s strategy is to “rationalise its subscriber base and retain profitable customers”, it said, instead of counting SIM cards, and that has seen it increase average revenue per user and gross margins. Despite the plummet in subscribers – and a net loss of R7.6 billion, an average loss of well over R1 billion per month – its total revenues were down only 8% compared to the first half of 2019 .. That was in part, Cell C said, because its focus on profitable subscribers rather than growth saw a 27% increase in its average revenue per user (ARPU) in its prepaid base.” Business Insider (2020), “Cell C says it is ‘on track’ after losing 28% of subscribers in six months,” 20 October 2020, available at: <https://www.businessinsider.co.za/cell-c-is-happy-with-its-strategy-of-right-sizing-the-customer-base-2020-10>.

⁹⁸ MyBroadband (2021), “Concerning trend in mobile data prices in South Africa,” 17 October 2021, available at: <https://mybroadband.co.za/news/cellular/418584-concerning-trend-in-mobile-data-prices-in-south-africa.html>.

strategy still appears to commit Cell C to accommodating Vodacom and MTN more than competing aggressively against them. Given that Cell C's options for differentiating its products are now much more limited (i.e., now that it has no RAN of its own), one might expect headline prices to be more important than ever before to Cell C's ability to attract and retain customers.

128. In any case, for purposes of the auction and future spectrum assignments, even if the deals are "pro-competitive" because they have assisted or enabled the entry of Rain and Liquid, sub-optimal spectrum assignments may still result if ICASA continues to ignore the reality that Rain and Liquid's spectrum is being integrated (Vodacom/Rain, via IOCA) or pooled (MTN/Liquid) with the holdings of the incumbents. Even if we assume that the sharing deals to date have resulted in net pro-competitive outcomes (which we dispute and certainly disagree with over the longer term), it does not follow that allowing Rain and Liquid to enter into similar arrangements with incumbents in respect of *newly acquired spectrum* will be pro-competitive.
129. Likewise, it may be possible to preserve the pro-competitive aspects (if any) of Rain and Liquid's entry into the market while mitigating any anti-competitive impacts that follow from their arrangements with Vodacom and Liquid. For example, requiring Rain and Liquid to institute a standard wholesale reference offer for capacity roaming on their networks (at least those parts of it that leverage newly acquired spectrum) might be a policy that actually boosts the pro-competitive impact from Rain and Liquid's entry and more effectively leverages their current arrangements with Vodacom and MTN for the greater benefit of the market.⁹⁹ This is particularly true if there is large excess capacity on the Rain and Liquid networks. In short, absent a detailed analysis of contractual conditions and arrangements relating to these sharing deals, high-level conclusions about the net pro-competitive impact of these deals are not a sufficient basis on which ICASA can justify a "do-nothing" policy.¹⁰⁰
130. ICASA also suggests that the sharing deals are not of great concern because while they could possibly create temporary advantages for the incumbents,¹⁰¹ they will not result in the incumbents having a first-mover advantage in the provision of 5G services. MTN and

⁹⁹ In the economic analysis of joint ventures and other agreements between competitors, the principle of "ancillary restraints" is frequently used to evaluate whether restraints on competition—such as exclusivity—are justified by the efficiencies that they create. The usual standard is to consider whether these restraints are "reasonably necessary" and "directly related" to the achievement of the efficiencies in question. See, for example, the European Commission's notice on "Restrictions directly related and necessary to concentrations", (2005/C 56/03), March 5th, 2005 (referred to as the Commission's "Ancillary Restraints Notice.") In this context, it may be the case that a quasi-exclusive deal on confidential terms was required to underpin the entry of Rain and Liquid into the market, but it does not follow that on a going-forward basis, these networks cannot switch to transparent open access terms.

¹⁰⁰ We note, in this context, Telkom's contention that ICASA should have held more specific consultations with stakeholders on the details of these sharing deals as part of its review of these deals in the MBSI.

¹⁰¹ MBSI Findings Document, paragraph 123.

Vodacom already have a first mover advantage. To win meaningful amounts of market share, Telkom and other competitors will have to attract away customers that MTN and Vodacom already have. If ICASA's view that 5G will not have an impact on the South African market is correct, then 4G services will remain the dominant mode of provision for some time to come. The sharing deals enhance the advantages that incumbents have in providing these services relative to entrants or challengers, and thus make existing incumbent customers even "stickier" than they already are. In this context of a strengthening incumbency advantage, notwithstanding the potential (which ICASA notes) for Telkom or Rain to launch 5G services, we would expect that Vodacom and MTN will be able to replicate their 4G dominance in the 5G era, just as they were able to do when the 4G era replaced the 3G era.

131. The two incumbents have major advantages in terms of existing sites and infrastructure.¹⁰² Many near-term deployments of 5G around the world will be in "non-standalone" mode, i.e., to the extent possible they will attempt to leverage 4G network assets to support deployment of 5G services. Entrants such as Rain and Liquid will face the choice of either turning to Vodacom and MTN to deploy 5G in non-standalone mode, or will need to deploy 5G in standalone mode. While Telkom has existing 4G assets, even it has a site-sharing deal with Vodacom to support its own deployments. As a result, if the two incumbents today enjoy advantages that stem from their greater network of sites, these advantages will persist into the 5G era, and they will be amplified by the sharing deals. Given that Liquid has already signed a wholesale deal with Vodacom pertaining to 5G services and 3500 MHz spectrum, it is very unlikely that the relevant Liquid spectrum and its associated network capacity can be used to support the offerings of a true competitor to Vodacom. This further reduces the scope for 5G competition.

H. Implications for the auction design

132. As discussed above, one immediate implication of the sharing deals is that they subvert the supposedly symmetric spectrum caps that ICASA has designed. The asymmetry is made even worse by the fact that Telkom's spectrum holdings are, uniquely, used to support very large and growing volumes of both FWA and mobile data traffic, so not all of Telkom's spectrum can be used to support its bid to compete in *mobile* broadband services.
133. In addition to taking account of spectrum accessed via sharing deals in the calculation of spectrum caps, ICASA should consider additional measures to mitigate any potentially anti-competitive effects of the sharing deals and prevent Vodacom and MTN from acquiring access to the MSPs "through the back door". In our view, the promotion of competition through the auction would benefit from the following amendments:

¹⁰² MBSI Findings Document, paras. 152 - 155.

- Access to the MSPs should be conditional on a commitment that spectrum acquired as part of a MSP will not be made available to Vodacom or MTN via an existing or future sharing deal in the nature of those currently concluded by Vodacom and MTN with various smaller operators.
- Licensees that make their spectrum available to other operators should be subject to open access commitments, perhaps underpinned by a transparent standard reference offer that is based on tariffs linked to open market prices or to costs.

VI. LOW BAND SPECTRUM AND DESIGN OF SPECTRUM CAPS

A. Economic importance of low-band spectrum

134. A lack of sub-1 GHz spectrum is a prominent reason why Telkom may not be able to compete more effectively against Vodacom and MTN. Sub-1 GHz spectrum is required for economical population coverage, and to provide quality in-building service. If Telkom cannot deploy spectrum in the 700/800 MHz bands that it may win at auction across its entire network, the pro-competitive impact on the market of winning this assignment will be significantly below potential. The same will apply to the WOAN, for which 20 MHz in the 700 MHz band has been set aside.
135. Once the spectrum is finally released, there will still be non-trivial costs involved in making this spectrum usable. In scale-driven industries such as mobile telecommunications, the failure to rapidly acquire scale can result in operators exiting the market, while higher marginal costs (as a result of higher effective costs of using available spectrum) can limit the competitive constraint that such operators can pose. Thus, the expansion of smaller operators—who are also disadvantaged by the high costs of customer acquisition related to the stickiness of “inert” customers—will be significantly (further) inhibited by delays in being able to use spectrum and additional costs in making such spectrum usable.
136. The ITAs included spectrum in the 700 MHz and 800 MHz bands that are currently occupied by television broadcasters. Having already missed a 2015 deadline for migration, the previous Minister for Communications and Digital Technologies stated in September 2020 that government was “committed” to a deadline of 2021,¹⁰³ but this target has already been missed. In October 2021, the current Minister committed to completing the migration by no later than March 2022. However, e.tv has initiated legal action to halt the proposed switch off of analogue signals and has stated that the shortest possible time in which the migration can be completed, without causing harm to the broadcasting sector, is fifteen months.¹⁰⁴ The sequence of events and announcements in regard to the availability of this spectrum only serves to highlight the uncertainties about the migration date and the very real possibilities of even more delays.

B. Using spectrum in coordination with broadcasters is not a substitute for completing the digital migration process

137. It may seem obvious that winners of spectrum in the 700 MHz and 800 MHz bands will not be able to make full use of it until the migration is complete. However, in submissions before the High Court, ICASA made the argument that, in fact, this “digital dividend”

¹⁰³ Simnikiwe Mzekandaba, (2020), “Ndabeni-Abrahams says digital migration target still within reach”, *ITWeb*, 16 September 2020, available at <https://www.itweb.co.za/content/WnpNgq2Km9LvVrGd>.

¹⁰⁴ Duncan McLeod, (2021), “Digital migration in disarray: E.tv heads to court over minister’s deadline”, *Tech Central*, 6 October 2021, available at <https://techcentral.co.za/digital-migration-in-disarray-e-tv-heads-to-court-over-ministers-deadline/203141/>

spectrum would effectively be available to successful bidders. The basis for this claim was that Telkom was assigned 700 MHz and 800 MHz spectrum on a temporary basis as part of the response to the Covid emergency in South Africa. ICASA claimed that Telkom was able to use this spectrum without significant interference from broadcasters (i.e., SABC and e.tv) who also use these frequencies. Telkom informs us that this claim is incorrect and that in fact it has experienced and reported interference to ICASA. Even more importantly, the reason that reported interference has been limited is because Telkom is obliged to test for interference before it deploys its temporarily assigned low-band spectrum. On sites where Telkom detects possible interference, it is not permitted to deploy mobile services. To the extent that reported interference has not been more significant, this reflects the fact that Telkom has been unable to rollout many sites because it anticipated interference problems at these sites.

138. In submissions that Telkom made to ICASA in September 2020, it noted that access to sub-1GHz spectrum had dramatically improved coverage, indoor penetration, customer experience and dependence on roaming services on the 277 sites where Telkom was able to deploy the spectrum.¹⁰⁵ This is evidence of the economic value of the sub-1GHz spectrum and also evidence of the pro-competitive potential of such spectrum, were it to be made available to challenger operators such as Telkom. Conversely, Telkom also noted that the ongoing use of this spectrum by broadcasters as well as for point-to-point studio-to-transmitter (“STL”) links made it impossible to fully utilise this spectrum—Telkom identified a fallout of 35-40% of sites that could not be used as initially planned due to interference issues.¹⁰⁶ In short, Telkom’s experience with temporary spectrum clearly indicates that shared usage is not a sustainable solution to the lack of progress on the digital migration issue. Likewise, the broadcaster e.tv (through its expert) concluded that sharing spectrum between MNOs and broadcasters is not possible in any meaningful manner.¹⁰⁷
139. The distinction between using spectrum on a shared basis with broadcasters and assigning spectrum on an exclusive usage rights basis is a critical one from the perspective of economic theory. First, shared spectrum can at best be a complement to exclusively held spectrum, not a full-fledged substitute for it. As the GSMA noted:

“Exclusive licensing has been central to the success of mobile services and must continue...”

“Spectrum sharing presents a complementary approach to exclusive licensing... sharing does not replace the need to clear bands and assign

¹⁰⁵ Telkom, “TELKOM’S WRITTEN SUBMISSION ON THE IMPACT OF THE COVID-19 PANDEMIC ON THE MARKET AND ANY SPECIFIC FACTORS EMANATING THEREFROM”, letter dated September 16th, 2020, at paragraph 2.13.

¹⁰⁶ Telkom, “TELKOM’S WRITTEN SUBMISSION ON THE IMPACT OF THE COVID-19 PANDEMIC ON THE MARKET AND ANY SPECIFIC FACTORS EMANATING THEREFROM”, letter dated September 16th, 2020, at paragraph 2.19.

¹⁰⁷ e.tv Heads of Argument, paragraph 17.3.

them for mobile use – and is not always a better option. For example, clearing some UHF TV spectrum and exclusively licensing it for 4G services has connected far more people to affordable broadband than the use of TV whitespaces.”¹⁰⁸

140. For wide-area networks (such as national mobile networks) that require extensive investment, secure long-term usage rights are required to underpin this investment, and exclusive usage rights are much closer to providing such property rights than is a shared spectrum solution. Simply put, Telkom and other operators will pay much less to access spectrum over which there is uncertainty as to whether and when they can obtain full exclusive usage rights. Spectrum used on a coordinated basis with broadcasters will not support a full-fledged investment case, and by equating shared spectrum with licensed spectrum and exclusive usage rights, ICASA threatens to undermine the confidence that investors have in the migration process. Delaere (2007) states that:

“Many – although not all – authors agree, however, that an exclusive usage right will remain essential for services that require very high investments and therefore demand guaranteed capacity as well as protection from interference... market forces should be the guiding principle for the assignment of usage rights.”¹⁰⁹

141. ICASA’s suggestion that interference can be managed through administrative means is contrary to now-standard economic perspectives on management of spectrum, which were developed more than six decades ago. Ronald Coase won a Nobel prize for his work in the late 1950s on the management of the problem of interference between radio signals. Coase recognised that a more durable solution to problems of managing interference lay in providing the correct economic incentives to spectrum users, via the reassignment of property rights. There is an inherent problem present in an environment where broadcasters and mobile operators do not internalise the costs of any interference that they impose on others, and thus they have no economic incentive to manage the interference they impose on others.
142. Rather than rely on the cooperation of the parties and the diligence and flexibility of the regulatory regime (including any system of penalties), which is more problematic in today’s highly dynamic technological environment featuring ever-evolving use cases and ever-increasing data demand than in Coase’s time, Coase suggested that a more robust solution lay in allowing the parties with the highest willingness to pay to avoid interference to buy out interfering signals from other users of the spectrum. It is Coase’s

¹⁰⁸ GSMA, (2019), “Spectrum Sharing: GSMA Public Policy Position”, pg. 5, available online at <https://www.gsma.com/spectrum/wp-content/uploads/2019/09/Spectrum-Sharing-PPP.pdf>

¹⁰⁹ Delaere, S. (2007), “European Policy Trends Towards Flexible Spectrum Management”, Southern African Journal of information and Communications, Issue 8, pg. 13, available online at https://journals.co.za/doi/pdf/10.10520/AJA20777213_18

insight that underpins the case for spectrum auctions today. Coase's insight also has underpinned innovative efforts to achieve and accelerate broadcasters' migration away from spectrum that could be used to support wireless data services—the “incentive auctions” held by the Federal Communications Commission (FCC) in the United States are a particular illustration of this economic approach to spectrum management. At least from the economist's perspective, an auction conferring usage rights on mobile wireless operators while compensating broadcasters represents the economically optimal approach to spectrum management and digital migration. This is not the approach South Africa is pursuing, however.

143. ICASA should instead have strenuously sought alternative possibilities, e.g., potentially reviewing Cell C's status with a view to reassigning some of its spectrum, to urgently address the competition issues arising from these asymmetries. If it turns out that, in fact, MTN will come to use Cell C's spectrum, including its holdings in the 900 MHz band, then the case for reassigning this spectrum—on an exclusive usage rights basis—to smaller players would appear to be strong.

C. Discounted reserve or auction prices do not mean uncertainty around the digital migration is irrelevant

144. Prior to arguing that licensees could fully benefit from 700 MHz and 800 MHz spectrum because they could use it on a shared basis alongside broadcaster, ICASA had previously made the proposition that uncertainty around the digital migration was mitigated because it was offering discounted reserve prices and longer license terms for the spectrum that was subject to the digital migration process. There is some superficial appeal in the proposition—uncertainty effectively increases the return that investors will demand to invest in a project—although it is far too simplistic. If the investment is in spectrum, investors will “discount” the anticipated stream of profits at a higher rate, thus reducing its present value and reducing the price that they will be prepared to pay for it.
145. However, uncertainty is not the same as risk. Economists make a distinction between what is sometimes called “Knightian Uncertainty” and mere risk. While risk might be considered a form of uncertainty, it can be quantified. Uncertainty, however, applies to situations “where we cannot know all the information we need to set accurate odds in the first place.”¹¹⁰ For example, the financial crisis of 2008 was an event in which the risk perceptions embedded in financial models were invalidated, and as a result there was a major market panic. Likewise, “an airline...might forecast the risk of an accident involving one of its planes”, but the “economic outlook for airlines 30 years from now” might be “incalculable.”¹¹¹

¹¹⁰ Peter Dizikes (2010), “Explained: Knightian Uncertainty”, available at <http://news.mit.edu/2010/explained-knightian-0602>.

¹¹¹ *Ibid*

146. The delays to the digital migration process arguably mean that it is very difficult for firms to “calculate the odds” and respond accordingly. Further, in the presence of uncertainty, firms will be especially worried about costly mistakes and their consequences, and therefore will attach a high value to the “option” to delay making decisions and investments until the uncertainty is resolved. In the case of investing in spectrum beset by uncertainty around the digital migration process, the likely result is both that firms will be more reluctant to commit to the spectrum in the first place and that they will tend to reduce or delay the investments they make in network assets required to operate that spectrum. Uncertainty around the digital migration also creates uncertainties for firms in terms of how much and how far they should commit to alternatives to acquiring low-band spectrum. The obvious (if unattractive) alternative is for Telkom and similarly situated firms to invest in network densification. But the timing and magnitude of such alternative investments will depend on expectations around when and to what extent the relevant spectrum will or will not be available. For example, committing to an extensive densification programme would be highly wasteful if the relevant spectrum were made available in sufficient quality and quantity at a relatively immediate date, and firms in Telkom’s position would be reluctant to commit to such investment.
147. A critical factor here is the asymmetric impact of the uncertainty on different mobile operators. Telkom’s lack of sub-1GHz spectrum could result in it incurring higher costs than the incumbents in providing high-quality indoor service and widespread coverage of its data network. Incumbent firms have access to 900 MHz spectrum, and this spectrum is certainly potentially valuable for the provision of LTE services, with good coverage and indoor penetration.¹¹² Uncertainty around the availability of sub-1GHz spectrum—created by the many delays to the digital migration process—increases the risks to (and thus reduces the willingness of) Telkom to commit to investments in either the relevant spectrum or densification alternatives. The end result is that uncertainty related to digital migration is likely to have a greater depressive impact on Telkom’s ability and willingness to make the investments required to overcome the inherent quality and cost disadvantage it suffers relative to these better-endowed rivals. The likely impact on competition is likely to be durable and adverse.

D. ICASA’s aggregate caps do not take account of asymmetries in low-band spectrum holdings

148. ICASA’s proposed spectrum cap of 184 MHz of spectrum per operator suffers from a flaw related to the current asymmetry in holdings of sub-1GHz spectrum. This cap, along with a cap on Sub-1 GHz holdings of 42 MHz, limits Telkom’s ability to develop a spectrum portfolio that matches those of Vodacom and MTN. This is significant in light of the fact

¹¹² In India, for example, Airtel is using 900 MHz spectrum to offer LTE services. See <https://www.airtel.in/press-release/01-2019/airtel-boosts-4g-network-coverage-with-lte-900-technology-in-andhra-pradesh-and-telangana>. Airtel appears to have expressly re-farmed 2G spectrum to provide better LTE coverage indoors. See https://www.business-standard.com/article/pti-stories/airtel-starts-refarming-2g-spectrum-for-4g-services-to-enhance-indoor-coverage-120111700835_1.html

that Telkom is, as things currently stand, the only infrastructure-based competitor with the potential to strongly challenge Vodacom and MTN independently and exert effective competitive pressure on a national basis. Cell C is currently exiting the market as an infrastructure-based competitor, and Rain accounts for a tiny share of the retail market.¹¹³ The limitations that the supposedly “symmetric” caps impose on Telkom (and hence, as explained above, on the broader competitive picture) can be understood as follows:

- In the calculations ICASA used in the IMT ITA, Telkom currently possesses 142 MHz of spectrum in total (not accounting for the fact that some of this spectrum cannot feasibly be used to support Telkom’s competitive challenge in the mobile broadband market due to Telkom’s FWA business). The maximum amount of spectrum it could acquire at auction would therefore be 42 MHz. Vodacom and MTN currently each possess 81 MHz and 86 MHz in total. Vodacom could, in theory, acquire as much as 103 MHz at auction, and MTN could acquire as much as 98 MHz.
- Vodacom and MTN are likely to target acquisitions in the sub-1 GHz bands as well as the 3500 MHz bands. The latter is important for 5G and the former primarily for cost-effective coverage and in-building penetration but is also useful for 5G.¹¹⁴ The 2600 MHz band is also a critical band for both 4G and 5G services going forward. Vodacom and MTN can take their sub-1 GHz holdings to the sub-1 GHz cap of 42 MHz and still have plenty of ‘headroom’ to acquire spectrum in the 3500 MHz band, as well as the 2600 MHz band. If Telkom tried to match MTN and Vodacom in sub-1 GHz holdings, it would not be able to bid on any other spectrum and would be left with its existing holdings above 1 GHz. If Telkom elected to instead expand its holdings in bands above 1 GHz, it would not be able to match the sub-1 GHz holdings of Vodacom and MTN.

149. While it is true that robust competition does not require perfectly symmetric spectrum holdings, there is a distinction between a circumstance in which firms choose to make their own decisions about which spectrum to acquire, at what price and when, and a situation in which a regulatory intervention restricts their flexibility to make such commercial decisions. In this case, the spectrum cap serves as a relatively rigid barrier to how firms can organise their spectrum portfolios, particularly in the context of there being no secondary market in which firms can trade spectrum with each other. In this context, a spectrum cap that does not adequately account for the competitive consequences of an

¹¹³ Rain also does not offer voice services. As discussed earlier, Rain relies primarily on selling network capacity to Vodacom for its revenues, and not on selling its own retail services. Thus, as yet, it does not appear to be directly challenging the two leading operators.

¹¹⁴ Vodacom has confirmed that it will be using sub-1 GHz spectrum for its 5G services. See Telegeography CommsUpdate, (2020), “Nokia to deploy its 5G solutions across Vodacom’s network,” 28 October 2020, available at <https://www.commsupdate.com/articles/2020/10/28/nokia-to-deploy-its-5g-solutions-across-vodacom-network/>.

asymmetry in “prime” sub-1GHz spectrum is destined to perpetuate existing competitive asymmetries. In the context of South Africa’s entrenched duopoly, this would be particularly unfortunate.

150. In this context, it is again worth noting ICASA’s attempted reliance on Ofcom in brushing aside the consequences of sustained asymmetry in low-band spectrum holdings. In the United Kingdom, however, it is the leading operator by market share, EE, that has historically lacked large amounts of low-band spectrum (as recently as 2018 it had only 10 MHz of such spectrum). In South Africa, it is a challenger operator, Telkom, that lacks any (permanent, licensed) low-band spectrum. The situations are different—Telkom is not only more lacking in low-band spectrum than EE, but it also lacks the advantages that a larger operator such as EE might have. For example, EE may own more infrastructure and sites, and may be less capex-constrained than Telkom, meaning that network densification is a much more viable alternative for EE than for Telkom¹¹⁵
151. ICASA’s failure to consider the very prominent use of some “mobile” spectrum for FWA services (by Telkom) also reflects its broader failure to consider South African circumstances that Ofcom never had to consider.
152. Penultimately, in the Second IM, ICASA suggests that it might not put 700 MHz or 800 MHz spectrum into the next auction until the digital migration process is concluded.¹¹⁶ This proposal points to an overall failure to understand spectrum as an input to the market and does not resolve the fundamental uncertainty around when the digital migration process will be completed. Moreover, it does not identify what—if any—interim solutions might bridge the gap in sub-1GHz holdings that we have identified above. Instead, we think that ICASA would have more effectively met its remit to address competition issues if (a) it had considered whether Cell C’s spectrum in the 900 MHz band could be reassigned; (b) whether its stated 184 MHz cap allows for balanced spectrum portfolios (assuming that 700 and 800 MHz spectrum does eventually become available); or (c) innovative processes such as incentive auctions or payments made to broadcasters to incentivise them to migrate away from the spectrum they currently occupy. While not all the many shortcomings of South Africa’s process for achieving digital migration and allocating the relevant spectrum to mobile broadband services are traceable to ICASA, ICASA’s efforts to justify its auction plans with recourse to rationales such as shared spectrum are not consonant with a regulator that is striving to achieve optimally competitive outcomes.

¹¹⁵ See paragraphs 5.63 to 5.66 of Telkom’s Response to ICASA’s MBSI Findings Document, discussing the inappropriate nature of any comparison between EE and Telkom. As noted, EE was formed by a merger between the UK operations of T-Mobile and Orange and was the leading operator in the market (with any and all the implied advantages of such a status)—with access to the combined resources of its component entities—from its very inception.

¹¹⁶ Second IM at paragraph 1.1.7.

153. Lastly, ICASA does not explain why the very same proposals with respect to auctioning off of spectrum that broadcasters currently occupy would be acceptable to broadcasters now, when they were not acceptable this past year when these broadcasters were challenging ICASA in the High Court.

VII. WEAK OUTCOMES FROM THE MBSI PROCESS UNDERSCORE IMPORTANCE OF STRONGLY PRO-COMPETITIVE SPECTRUM LICENSING PROCESS

154. As mentioned in section III.B.2, the MBSI has produced Draft Regulations that would fail to have any meaningful pro-competitive impacts. They are largely limited to new information reporting requirements applicable to Vodacom and MTN, which are aimed at facilitating ICASA’s ability to monitor wholesale pricing for potential margin squeeze activity in site access, national roaming, and wholesale MVNO and APN services; or non-price exclusionary conduct by MTN or Vodacom in site access. ICASA did not explain how this information will be used other than stating that the Competition Commission would prosecute if ICASA found evidence that wholesale rates (for national roaming or APN and MVNO services) were above effective retail rates. Relying on *ex post* competition law enforcement is appropriate in some circumstances but should not fully replace *ex ante* powers available to a sector regulator like ICASA.
155. ICASA’s decisions to divorce the spectrum licensing process from the MBSI and publish the ITAs before completing the MBSI were major contributors to this outcome. The site access market provides a good example.
- Before the ITAs, ICASA was considering, through the MBSI, a range of pro-competitive remedies for the site access market. These included a revision of existing facilities leasing regulations; the imposition of accounting separation on dominant operators with respect to their sites operations; preventing dominant operators from indefinitely reserving space on their masts for their own future deployments; and requirements to publish site information online and to commit to timeframes for considering access requests from other parties. In the background, the Competition Commission’s DSMI had called for the introduction of cost-oriented access price regulation.
 - The IMT ITA ignored all of this and imposed a “reference offer” condition on Vodacom and MTN that, in ICASA’s view, would remedy site access market competition problems. The Competition Assessment stated as follows:

*In order to ensure that Tier-2 national wholesalers and any sub-national operators are able to compete effectively post-auction, the Authority provides for measures to ensure that Tier-1 operators provide reference offers for site access. This will address anti-competitive behaviour in relation to facilities and spectrum sharing.*¹¹⁷
 - The MBSI Findings Document then proceeded to agree with the view stated above. It stated that the reference offer condition in the IMT ITA reduces the need for ICASA to use the MBSI to regulate competition in the site access market. The

¹¹⁷ ICASA, Reasons Document, Government Gazette, 4 December 2020, page 105.

MBSI Findings Document offered no analysis to support this conclusion including no analysis of the potential effectiveness of a reference offer condition. That analysis was also absent from the Competition Assessment. There had also been no scope for industry to comment on the reference offer remedy in the context of the ITA process or the MBSI.

156. The example above applies more generally to the view taken in the MBSI Findings Document on the role that ICASA assumed the ITAs would play in promoting competition. As mentioned earlier, ICASA took the view in the MBSI Findings Document that the coverage obligations; spectrum caps and floors; requirements to offer open access to MVNOs; and off-take requirements in respect of the WOAN in the ITAs would have impacts on the market that could be relied upon and could replace pro-competitive measures that ICASA might otherwise have sought to introduce via the MBSI.
157. Finally, ICASA stated in the MBSI Findings Document that the WOAN itself, and in general the licensing of additional spectrum would likely have only limited impacts on competition in the short term.
158. The MBSI was, thus, unambitious in its recommendations because it was predicated on the incorrect assumption that the ITAs adequately addressed competition problems. Now that the High Court has set aside ICASA's decision to publish the ITAs, ICASA has an opportunity to address competition issues anew. In fact, the limited and weak nature of the Draft Regulations in the MBSI only increase the urgency and importance of using the spectrum auction process as a means to boost competition.

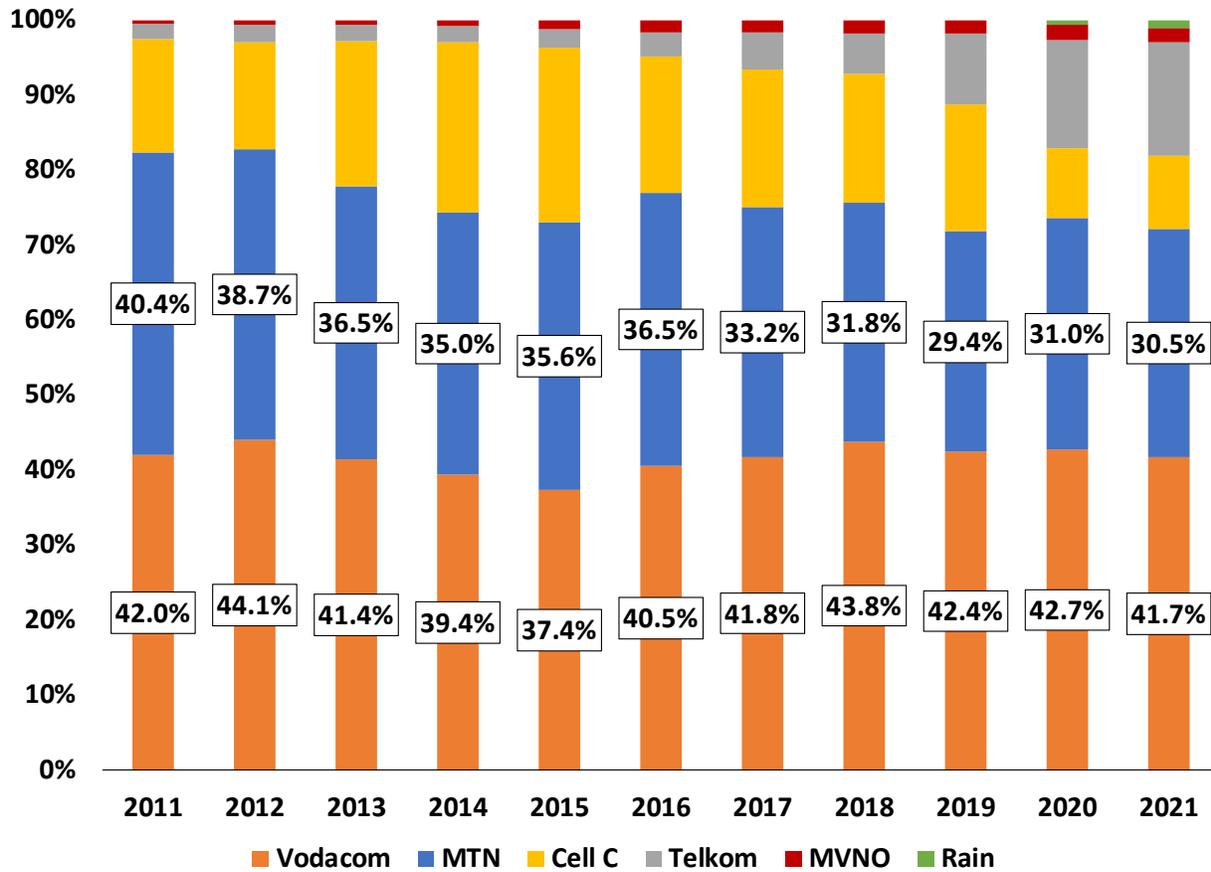
VIII. CONCLUSIONS

159. The flaws in the ITAs—whether in the details of the competition assessment or in the lack of regard to integrating a holistic competition assessment (e.g., in relation to the MBSI)—persist in ICASA’s most recent proposal. Further, the flawed ITAs were used as inputs into the MBSI, resulting in the MBSI also failing to deliver the pro-competitive impetus that the South African mobile sector needs. Even though ICASA had an opportunity to reconsider the premises of the ITAs, the Second IM strongly indicates that ICASA intends to repeat the very same process, with the very same mistakes.
160. In a concentrated market in which scale is highly relevant to firms’ competitive prospects, neglecting competition concerns will not merely entrench the status quo, but exacerbate the status quo. There is no such thing as “benign neglect” in this context. An entrenched and enhanced duopoly will make it more difficult for the smaller challenger firms to attract repeated rounds of large-scale network investment. As a result, there is no such thing as a “neutral” policy stance towards the entrenched duopoly—mistakenly believing otherwise will contribute to long-run outcomes where competition is reduced to even lower levels, rather than just preserving the status quo.
161. All the available indicators are that ICASA has chosen to prioritise the auctioning off of spectrum instead of prioritising competition. The Competition Assessment for the IMT ITA was flawed and incomplete; the MBSI Findings Document compounded those errors. ICASA’s stances with respect to (a) the credibility of the WOAN; (b) the status of Cell C; (c) the role of the network sharing deals; and (d) the digital migration process, suffer either from irrationality—e.g., its half-hearted commitment to the WOAN elevates the risk of the WOAN failing—or from a failure or even refusal to address facts that would require a wholesale retailing of the auction. If these stances are not re-examined, we think that the result predictably will be to entrench and thus exacerbate the current duopoly.
162. Contrarily, there are creative ways in which ICASA could still act—the opportunity still exists—to bolster competition. Among other things:
- ICASA could still revisit the issue of Cell C’s status as a national wholesaler;
 - ICASA could revisit the WOAN’s role in promoting competition;
 - ICASA could consider making some or all of Cell C’s spectrum available to challenger operators. There is little rationale, in our view, for Cell C to retain all the spectrum it currently has when, in effect, it is roaming on MTN and Vodacom’s networks. ICASA could also consider requiring the re-farming of the 900 MHz alongside the reassignment of Cell C’s spectrum, so as to make this spectrum band available to all operators in a contiguous format that supports mobile broadband offerings, and which allows competitor operators such as Telkom to acquire at least some holdings of such spectrum (this also provides a further hedge against the uncertainties associated with the digital migration process)

- ICASA should reconsider its approach to caps. In light of the increase in access to spectrum that Vodacom and MTN gain by virtue of the sharing deals, and the fact that Telkom uniquely supports a large amount of both mobile and FWA traffic on its existing spectrum, it is clear that ICASA’s approach will ensure that from the perspective of competition in the mobile broadband market, Vodacom and MTN will be greatly advantaged relative to Telkom. In assigning spectrum, ICASA needs to take a forward-looking view, in particular it needs to consider the competitive consequences of allowing Vodacom and MTN much more headroom for spectrum acquisition than Telkom.
- ICASA could consider whether a symmetrical overall spectrum cap makes sense in the face of persistent asymmetries in the type of spectrum (e.g., sub-1GHz) held by different operators;
- ICASA could extract commitments from Rain and Liquid that limit the extent to which Rain and Liquid are able to use any newly acquired spectrum (particularly spectrum acquired as part of an MSP) to offer capacity roaming to the two incumbents;
- ICASA could also require Rain and Liquid to provide standardised wholesale reference offers to all comers as a condition for allowing Rain and Liquid to benefit from the MSPs;
- ICASA could consider strengthening the current rules around site access, particularly for the WOAN, and should consider increasing operators’ required offtake from the WOAN or perhaps making the WOAN an exclusive provider of access for MVNO services for at least an initial period of a few years;
- ICASA could take the initiative to propose innovative solutions to the digital migration dilemma—for example, it could consider an “incentive auction” in which mobile operators pay broadcasters to migrate away from currently held spectrum, or a similar type of economic incentive scheme. This is the solution that has been used in the United States by the Federal Communications Commission. While we appreciate that the legal and institutional context is different in South Africa, it is nonetheless striking that instead of thinking in these economic terms, ICASA is still invoking the management of interference as a potential solution to the digital migration dilemma.

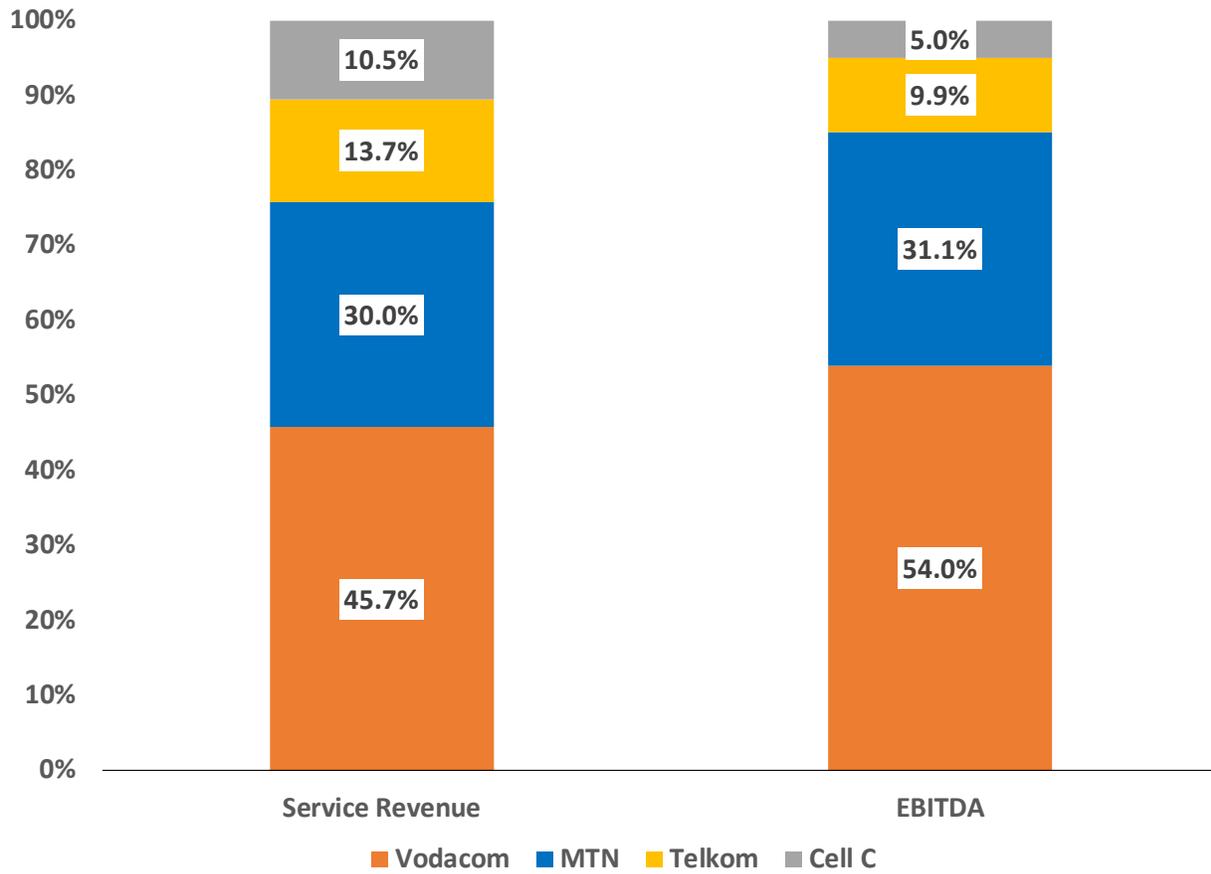
ANNEXURE A

**MTN and Vodacom Shares of Mobile Network Subscribers
2011 – 2021**



Source: Reconstructed from data in BusinessTech, “Mobile market share 2019: Vodacom vs MTN vs Cell C vs Telkom”, 28 May 2019, available at <https://businesstech.co.za/news/mobile/319378/mobile-market-share-2019-vodacom-vs-mtn-vs-cell-c-vs-telkom/>. Data for 2020 and 2021 sourced from operator reports, press reports, and own estimates for Rain based on press report.

**Shares of Service Revenue and EBITDA
2020 – 2021**



Source: Operator year-end reporting: the year ending March 2021 for Vodacom and Telkom; the year ending December 2020 for MTN and Cell C.

AUTHORS' QUALIFICATIONS

A. Kalyan Dasgupta

163. Mr. Dasgupta is an economist with 20 years of international experience in antitrust and competition policy, matters at the intersection of competition and intellectual property, telecommunications, and energy. He is an affiliate Director at BRG and also undertakes independent economic consulting assignments. He has extensive experience in regulated industries, especially telecommunications. He has submitted expert evidence and provided oral evidence in regulatory proceedings and has been retained as an expert in litigations before the UK High Court and before the Competition Tribunal in South Africa. He has substantial experience with regards to issues such as market definition, regulated pricing and costing, vertical foreclosure, two-sided and platform markets, and monopsony and buyer power. His industry experience includes matters concerning credit cards, air cargo, oil pipelines, natural gas liquids and petrochemicals, real estate, and metals manufacturing, in addition to telecommunications and electricity. He also has substantial experience conducting econometric analysis and has in recent years applied cutting-edge models of demand estimation to issues such as merger simulation, market definition, and valuation of patented technologies. Mr. Dasgupta's experience spans Australia, Canada, the European Union, the U.K., and the U.S., as well as South Africa. He has also worked at NERA Economic Consulting and LECG. A copy of his C.V. is provided as Attachment 1.

B. Justin Tonkin

164. Mr. Tonkin is an economist with 14 years of international experience in competition economics, intellectual property valuation, litigation and telecommunications regulation. He began his career with LECG in London and is now an affiliate of BRG and also undertakes independent consulting assignments. He has prepared expert evidence on matters before the U.K. Copyright Tribunal, the Directorate-General for Competition of the European Commission, the Competition Bureau of Canada, the Canadian Competition Tribunal, the Ontario Energy Board, the Bundeskartellamt (Germany), the Competition Commission of South Africa and International Centre for Settlement of Investment Disputes. His recent experience includes economic advice on follow-on damages for cartel infringements, margin squeeze, mobile mergers and copyright licensing in relation to internet platforms. A copy of his C.V. is provided as Attachment 2.

C. Phil Alves

165. Mr. Alves is a competition and regulatory economist with 13 years of experience in competition law, sector regulation, litigation, and international trade. He spent four years working for the South African competition authority before transitioning to private consulting in 2012. He is now an Associate Director at BRG. He has advised on a wide array of competition matters in South Africa and the southern African region including mergers

in several sectors, pricing abuses in telecommunications and other industries, market inquiries before the competition authorities and the communications regulator in South Africa, restrictive horizontal agreements, and the competition aspects of licensing matters in the gaming industry and, more recently, postal and courier services. He has also been engaged in preparing economic analyses of the impact of tariffs and international trade policies. A copy of his C.V. is provided as Attachment 3.

ATTACHMENT 1: C.V. OF KALYAN DASGUPTA

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SUMMARY

Mr. Dasgupta is an economist with 20 years of international experience in antitrust/competition policy, matters at the intersection of competition and intellectual property, telecommunications and energy. He is an affiliate Director at Berkeley Research Group, but also undertake independent economic consulting assignments. In addition to providing lead support for testifying experts in major litigation cases, he has extensive experience in regulated industries, especially telecommunications. He has submitted expert evidence and oral evidence in regulatory proceedings and has filed expert reports or been retained as a testifying expert in several litigation matters involving competition issues or issues at the intersection of competition policy and intellectual property.

He has substantial experience with issues such as market definition, regulated pricing and costing, vertical foreclosure, two-sided and platform markets and monopsony and buyer power. He also has substantial experience of econometric analysis and has in recent years applied cutting-edge models of demand estimation to issues such as merger simulation, market definition and valuation of patented technologies.

In the last several years, his specific case experience has included:

- (2020) Expert reports on competition matters and network sharing arrangements between mobile operators in the South African mobile market.
- (2019-20) Retained expert in litigation involving FRAND (standard-essential patents) and competition issues before High Court in England and Wales.
- (2019-20) Analysis of FRAND issues in several litigations before the High Court in England and Wales.
- (2019-20) Analysis of competitive issues stemming from alleged merchant restraints in a matter involving credit card interchange fees.
- (2018-19) Analysis of competitive issues arising from a merger in the aluminium industry.
- (2017-18) Analysis of FRAND, competition and economic efficiency issues in a major global litigation in the smartphone industry.
- (2018) Analysis of market structure and market power issues in a merger between two leading wireless/mobile operators in the United States.
- (2017) Written expert evidence regarding market power and tolling principles for an NGL pipeline in Ontario.
- (2016-17) Analysis of mergers in a diverse set of industries including “big data”, fuel distribution, and gasoline retailing in Canada, the EU and the U.S.
- (2017) Analysis of the antitrust implications of “network sharing” and “co-investment” arrangements in the telecommunications industry in the EU.
- (2016) Analysis of whether a proposed clause in a long-term shipping contract for

liquefied natural gas had potential anti-competitive effects in the EU.

- (2016) Written and oral expert evidence before the Ontario Energy Board on proposals to expand natural gas distribution systems by cross-subsidy mechanisms.
- (2016) Econometric estimation of consumer surplus in the wireless industry in Bahrain.
- (2015-16) Evaluating efficient royalty rates for re-transmitted distant signals in Canada. These rates are payable by ILEC, satellite and cable companies.
- (2015) Econometric evaluation of market boundaries, and analysis of foreclosure issues, in the hot beverage market.
- (2013-2015) Analysis of monopsony power and other competitive issues created by the hypothetical implementation of a clause in a joint venture agreement governing a petrochemicals facility.
- (2014) Analysis of market definition issues, and “essential facilities” tests in fixed telecommunications and in the use of electric utility infrastructure for mobile telecommunications.
- (2012-13) Evaluating whether a crude oil pipeline was likely to have had market power when it conducted an open season to allocate firm capacity on a new expansion.
- (2012) Analysis of competitive issues arising from interchange fees and merchant restraints in the credit card industry in Canada.
- (2011-12 and 2015) Evaluating whether restrictions on the display of certain fields of information from a proprietary database of real estate listings constituted an abuse of dominance by the Toronto Real Estate Board.
- (2011-12) Analysis of (a) whether proposed royalty rates for standards-essential technology used in 3G mobile telecommunications were consistent with the licensor’s obligation to license technology on FRAND terms; (b) whether the licensor had monopoly power and had unlawfully acquired that monopoly power in the context of an antitrust claim brought in the Northern District of California; (c) whether the licensor’s proposed licensing rates and other practices would have substantially lessened competition in the downstream market for handsets, in relation to competition claims brought before the Federal Court of Australia.
- (2011-13) Analysis of geographic market definition and the effects of agreements to share certain types of information on fuel surcharges in the air cargo industry. This was as part of a litigation in the Federal Court of Australia between the Australian Competition and Consumer Commission and numerous airline defendants.
- (2011) Study of the economic impact of accelerated deployment of LTE network technology on regional economies in the United States in the context of a proposed combination of mobile wireless networks.
- (2010-11) Several studies looking at market structure in mobile/wireless telecommunications, in the context of spectrum licensing policies such as set-asides of spectrum for new entrants.
- (2011) Critical analysis of international comparisons and other metrics used to address the performance of wireless and broadband markets in a cross-country context (for a major wireless operator).
- (2010-11) Study using growth accounting and input-output methods of the value contributed by ICT to the Saudi Arabian economy.

Prior to June 2010, he was a senior managing consultant at LECG Limited. During his time at LECG, he worked on three major disputes involving licensing in the mobile telecommunications industry. A significant amount of his work centred around telecommunications and the regulation—particularly, policies of network unbundling and

functional separation—of access to fixed-line networks. However, his assignments also included providing advice to the British Horseracing Authority on the setting of the “levy” paid by bookmakers to the racing industry and a merger case in the petroleum industry. Until 2011, he was a co-author of the “Connectivity Scorecard”, a composite index that ranked countries according to the potential contribution of telecom and IT to their economic productivity.

He also worked as a researcher at London Business School, where he researched both telecommunications regulation and the impact of telecommunications deployment on productivity in the wider economy. The core of the work involved the estimation of a hedonic production function. From 1998 to 2001, he was an analyst at NERA Economic Consulting in the telecommunications practice based in Cambridge, Massachusetts. During that period, he worked on several cases involving the unbundling of network elements, price cap regulation, and mergers between local exchange carriers in the wake of the 1996 Telecommunications Act in the United States.

PRESENT EMPLOYMENT

Principal/Director (Independent Contractor), Berkeley Research Group (UK), 2010-present.
Independent economic consulting work, 2011-

PREVIOUS POSITIONS

Senior Consultant to Senior Managing Consultant, LECG, London, UK, 2006-2010
Consultant and Senior Consultant (affiliate), LECG, London, UK, 2005-06
Researcher, London Business School, 2004-2006
Analyst, NERA Economic Consulting, Cambridge, MA, USA, 1998-2001
Research Analyst, Brattle Group, Washington DC, USA, 1997-98.

EDUCATION

B.A., Economics and Government (*Magna cum Laude*), Franklin and Marshall College, USA.

M.Sc. Economics (Merit), London School of Economics.

Ph.D.-level coursework in econometrics, economics and operations research, University of Pennsylvania.

CONFERENCE AND WORKSHOP PRESENTATIONS

- 2020: International Telecommunications Society 2020 Online Conference.
- 2011: Georgetown University (Connectivity Scorecard), and Manning Centre, Ottawa.
- 2010: University of California-Berkeley, Georgetown University, International

- Telecommunications Union (ITU).
- 2009: London Business School, Nokia Siemens Networks Transformations Forum, London.
 - 2008: ETNO Regulatory Economics Workshop (Brussels), Nokia Siemens Networks Transformations Forum (Paris & London).
 - 2007: European Telecommunications Network Operators (ETNO) General Assembly (Copenhagen), ETNO Workshop (Brussels).
 - 2006: Digital Transformations Conference, Geneva, Switzerland, 2006.

RECENT PUBLISHED ARTICLES

Dasgupta, K., M. Williams and T. Gibson (2021), “Technological and Geographic Heterogeneity in Broadband Markets: The Challenges for Regulation”, Telecommunications Policy, Volume 45.

Dasgupta, K., M. Williams and L. Waverman (2020), “The Huawei Question: Managing the Competitive Consequences”, Competition Policy International, September 9th, 2020.

Dasgupta, K., and David Teece (2021), “The U.K.’s Role as a Venue for FRAND Litigation: Have the British Courts Gone Far Enough”, forthcoming, Competition Policy International, January 2021

ATTACHMENT 2: C.V. OF JUSTIN TONKIN

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SUMMARY

Mr. Tonkin is an economist with over fourteen years of consulting experience across a broad spectrum of industries. His work is split between competition engagements and valuation assignments as part of commercial litigation, international arbitration and licensing disputes. He has particularly deep experience of the valuation and licensing of intellectual property. He also has extensive experience of the telecommunications, media and technology sectors, including sector regulation and competition policy issues in the mobile sector.

He has worked on matters before the UK Copyright Tribunal, the Directorate-General for Competition of the European Commission, the Competition Bureau of Canada, the Canadian Competition Tribunal, the Ontario Energy Board, the Bundeskartellamt, the Competition Commission of South Africa and International Centre for Settlement of Investment Disputes.

PRESENT EMPLOYMENT

March 2011 to current: Senior Managing Consultant Berkeley Research Group

PREVIOUS POSITIONS

April 2005 – February 2011: Consultant, LECG, London

EDUCATION

B.A. (Hons), PPE, University of Cape Town, 2002
ICAEW Certificate in Finance, Accounting and Business

REPRESENTATIVE EXPERIENCE

Competition analysis

Prepared a margin squeeze analysis and expert report for Bundeskartellamt in relation to online ticketing.

Prepared several expert reports rebutting follow-on damages claims in the European truck market.

Assisted in the production of a report for the European Commission on the competitive effects of a proposed merger in the German cable television sector.

Provided analytical and modelling input to margin squeeze investigations relating to the UK and Canadian wholesale television markets

Prepared an assessment of the state of competition in the Canadian mobile industry as part of US merger proceedings.

Prepared a market assessment of the South African community newspaper sector.

Prepared evidence and conducted a market analysis on behalf of a European mobile network operator as part of a European Commission merger review.

Contributed to an expert report rebutting claims of the illegal monopolisation of standards essential patents in the mobile handset sector.

Prepared expert evidence in a case centred on anti-competitive conduct by a professional association in the Canadian Real Estate sector.

Helped develop a series of papers putting forward public interest arguments in favour of the potential merger of two US mobile phone providers.

Provided analytical and modelling input in matters relating to regulation of the UK and Saudi Arabian mobile telephone markets.

Intellectual Property and Media

Prepared expert evidence in relation to music licensing for a major video-based social media platform.

Prepared expert evidence for the Copyright Tribunal and provided advice to a major broadcaster on a reasonable licence fee for the use of music in broadcasting.

Provided advice and analysis to a major UK broadcaster in advance of licensing negotiations with a UK collecting society.

Assisted with the production of an expert report regarding the appropriate mechanical royalty rates for online music as part of a reference to the Copyright Tribunal.

Prepared a lost profits analysis for a major manufacturer of generic medication arising out of a wrongfully obtained injunction.

Produced an expert report as part of an international arbitration dispute in relation to the exploitation of the IP associated with a well-known reality television singing competition format.

Prepared a review of the distribution mechanism used to allocate certain licensing income amongst various classes of rights holders in the UK publishing sector.

Assisted with an expert report outlining the significance of a Copyright Tribunal reference and subsequent commercial settlement to a similar reference in the United States.

Prepared an expert report on damages for the Jimi Hendrix estate in relation to the unauthorised use of Hendrix recordings on a newspaper cover mount CD.

Provided advice to a UK collecting society in relation to the value of rights for the use of music in nightclubs and late-night bars.

Provided advice to the British Horseracing Authority on the appropriate licensing rate in a hypothetical fully commercialised negotiation between the racing industry and the UK licensed bookmakers.

Provided advice to a UK national collecting rights organisation in relation to pricing structures and levels for the copying and licensing of news content.

Technology

Prepared expert evidence for several multi territory disputes relating to FRAND royalties for standards-essential 3G and 4G technology in the mobile handset sector, between two large smartphone manufacturers.

Prepared an expert report for a confidential arbitration concerning ASIC chip royalties in the mobile sector.

Assisted in the preparation of an expert report arising from a complex dispute between an IT and management consultancy and a major rental business. The work involved a major review of several business case models, 'but for' and sensitivity analyses and the creation of a revised business case model and settled favourably.

Other

Prepared a lost profits analysis for a manufacturer of generic pharmaceuticals that had been wrongfully enjoined from the UK market.

Prepared expert evidence arising from a bilateral investment treaty dispute between an international construction company and a Central Asian government.

Assessed the brand extension potential for a well-known legacy photographic brand within the context of an international arbitration.

Assisted a South African telecoms operator with regulatory submissions in relation to call termination rates, prioritisation of markets for regulation and a Competition Commission inquiry into the cost of data.

ATTACHMENT 3: C.V. OF PHIL ALVES

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EDUCATION

M. Phil, Economics

University of Cape Town, 2006

B. Social Science, PPE

University of Cape Town, 2002

PROFESSIONAL CAREER

BRG, Associate Director, September 2020 –

BRG, Senior Managing Consultant, June 2018 – August 2020

Genesis Analytics, Senior Associate, Manager, Principal, 2012-2018

Competition Commission of South Africa, Senior Investigator, 2008-2012

South African Institute of International Affairs, Economist, 2005-2008

PROFESSIONAL PROFILE

Mr. Alves is a competition and regulatory economist with about 13 years of experience in competition law, sector regulation, litigation, and international trade. He spent four years working for the South African competition authority before transitioning to private consulting in 2012. He is now an Associate Director at BRG. He has advised on a wide array of competition matters in South Africa and the southern African region including mergers in several sectors, pricing abuses in telecommunications and other industries, market inquiries before the competition authorities and the communications regulator in South Africa, restrictive horizontal agreements, and the competition aspects of licensing matters in the gaming industry and, more recently, postal and courier services. He has also been engaged in preparing economic analyses of the impact of tariffs and international trade policies.

SELECTED PROJECTS (CONSULTING ONLY)

Competition law and policy

- **Telkom South Africa:** Advised client on excessive pricing investigation by the competition authority.
- **Barnes Fencing Industries:** Advising client on quantum and related economic evidence for client's cartel damages claim in the High Court.

- **Large merger (North America):** Advised clients on selected questions relating to spectrum, debt, and capital expenditure.
- **World Bank (Angola):** Contributed to the development of Angola's first policy and regulatory reform 'roadmap' for the telecommunications sector. Included advice on market interventions, policy development, and regulatory capacity building.
- **Telkom South Africa:** Advising client and compiling submissions for several rounds of engagement with a Competition Authority Market Inquiry into data services.
- **Bill and Melinda Gates Foundation:** Led project assessing competition problems in digital financial services in Kenya, Nigeria, Bangladesh, and India.
- **Siyazisiza Trust:** Advised client on its defence against bid-rigging and related restrictive horizontal practice allegations and findings made against it by the South African competition authority.
- **Cement merger (confidential):** Assisted two large South African cement producers to develop a deal structure that would be commercially acceptable and also obtain competition law approval.
- **Zambia Sugar:** Defence of an abuse of dominance case brought against Zambia Sugar by the Zambian Competition and Consumer Protection Commission (excessive pricing, price discrimination, unfair pricing).
- **Sun International:** Led analysis of relevant markets, competitive dynamics and competitive effects of proposed merger with Peermont in the South African casino industry.
- **Coca-Cola bottling mergers:** Led work on relevant markets, competition dynamics, and competitive effects of three-way merger involving the Coca-Cola Company, SABMiller (now ABInbev) and Gutsche Family Investments in South Africa and several other African jurisdictions.
- **Competition Commission South Africa:** Assisted preparation for trial against Telkom South Africa for abuse of dominance in managed data services markets.
- **Two mergers in the fast-moving consumer goods sector, one in dry goods, and one in canned food (both confidential).** Led the analysis of relevant markets, competition dynamics, and the likely competitive effects of these mergers.
- **Merger in the fertilizer industry (confidential).** Led the analysis of relevant markets, relevant regulatory constraints, and the likely competitive effects of this merger.
- **Merger involving two leading apparel and accessories, homeware and cosmetics retailers (confidential).** Led the analysis of the competitive effects of this merger in apparel retail, and supported the analysis of homeware and cosmetics retail.

Sector regulation

- **Telkom South Africa:** Contributions to client advice on selected issues concerning spectrum.
- **Telkom South Africa:** Advising client on several rounds of engagement with the sector regulator concerning a market inquiry into mobile broadband.
- **Telkom South Africa:** Contributions to client's engagements with telecommunications regulator on call termination rate regulation including preparation for litigation.
- **Telkom South Africa:** Contributions to various submissions to telecommunications regulator on process for deciding which telecommunications markets to prioritise for pro-competitive regulation.
- **Independent Communications Authority of South Africa:** Contributed to development of call termination rates for fixed and mobile in South Africa.

- **Independent Communications Authority of South Africa:** Contributed to defence of call termination rates for fixed and mobile in South Africa against legal challenge from an operator.
- **South African Post Office:** Advising client on competition-related aspects of a dispute with private couriers over reserved postal services
- **Client (financial services, South Africa):** Advised client on various price regulation issues in selected payment services as part of its engagement with the regulator
- **Casino Association of South Africa:** Opposing the Gauteng Provincial Government's proposed amendments to the Gauteng casino tax regime.
- **Sun International:** Led competition economics analysis to oppose proposed licensing of new casino and other gambling operations in South Africa and Botswana.
- **Legacy Hotels:** Led competition economics analysis to oppose licensing of new casino in Namibia.

Disputes

- **Investor-state dispute (South Sudan):** Contributed to the development of damages claim against South Sudanese government on behalf of a wireless operator formerly active in South Sudan.
- **Pick 'n Pay:** Exclusive lease agreement disputes for major South African supermarket chain.

International trade

- **Cement import tariff:** Contributed to calculation of cement import tariff level required to justify new investment into a processing plant in Lesotho by a major South African cement producer. Led the drafting of the report.
- **International Trade Administration Commission:** Devised and carried out an economic impact assessment of an export control policy that was applied to exports of scrap metal in 2013.
- **South African Poultry Association:**
 - Led work assessing the case for safeguards to be introduced on imports of specific poultry products from the EU, under the Trade, Development and Cooperation Agreement, and later the SADC-EU Economic Partnership Agreement.
 - Led work assessing the benefits of the African Growth and Opportunity Act to South Africa. Assisted on various anti-dumping disputes.
 - Led work assisting the South African Poultry Association in responding to various objections raised against its application to the International Trade Administration Commission to increase tariffs on most-favoured nation imports of certain poultry products.
- **Economic Development Department:** Led work responding to two rounds of objections in the High Court to the Economic Development Department's policy in respect of scrap metal exports.
- **South African Sugar Association:** Led work assisting the South African Sugar Association in responding to various objections raised against its application to the International Trade Administration Commission to increase tariffs on most-favoured nation imports of sugar.

Advisory

- **Telkom South Africa:** Advised client's wholesale fixed business on product costing and pricing including commercial, regulatory and strategy considerations.
- **Client (Uganda):** Assessed impacts of and possible alternatives to an excise tax on the usage of over-the-top messaging and social media services in Uganda.

JOURNAL ARTICLES

- (1) Alves, P (2007). "India and South Africa: Shifting Priorities?" South African Journal of International Affairs, vol. 14., no. 2.
- (2) Alves P., and L. Edwards (2006), "South Africa's export performance: determinants of export supply." South African Journal of Economics, Volume 74, Issue 3, pages 473–500, September 2006.

BOOKS AND MONOGRAPHS

- (1) Alves P., P. Draper, and R. Sally (eds.) (2009). *The Political Economy of Trade Reform in Emerging Markets: Crisis or Opportunity?* Cheltenham, Edward Elgar, 2009
- (2) Alves, P. and P. Draper (eds.) (2009). *Trade Reform in Southern Africa: Vision 2014?* Johannesburg, Jacana Media, 2009