Vodacom's submission in response to the Department of Telecommunications and Postal Service's invitation to provide written comments on the Electronic Communications Amendment Bill [Government Gazette Number: 41261 of 17 November 2017]

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1. Introduction

Vodacom Pty Ltd ("**Vodacom**") wishes to thank the Department of Telecommunications and Postal Services for the opportunity to provide written comments on the Electronic Communications Amendment Bill as published in Government Gazette number: 41261 of 17 November 2017.

Vodacom has been a committed investor in South Africa and understands the centrality of communications to achieving the Government's goals for South Africans in terms of creating jobs, supporting growth of the economy, furthering healthcare and education. The opportunities for South Africans presented by widespread, affordable access to broadband are significant and exciting. It is clear to Vodacom that, subject to a supportive investment environment, these opportunities will be realised first and foremost through mobile technology.

Furthermore, Vodacom embraces the Government's goals for social and economic transformation. In 2017 Vodacom enrolled 128 graduates and spent ZAR 277 million on skills development. During the same period Vodacom placed 838 black youths on leadership programmes.

Last year Vodacom spent ZAR 149 million to develop suppliers. Vodacom procured goods and services totalling ZAR 23 billion from suppliers with BEE level 4 and above, of which ZAR 7 billion was spent with suppliers with greater than 51% black ownership, and ZAR 5.7 billion with suppliers with greater than 30% black woman ownership.

In 2016 Vodacom was recognised as the most empowered company on the JSE. Vodacom was the top black managed company on the JSE in 2017.

Vodacom's comments are structured as follows:

Section 2: Executive Summary

Section 3: Previous engagement with the Government

Section 4: The new Chapter 3A - the WOAN

Section 5: Amendments to Chapter 5 – radio spectrum

Section 6: Amendments to Chapter 8 – open access

Section 7: Other changes

Section 8: Constitutionality of the Bill

There are four appendices to our submissions.

In **Appendix A**, we attach a report prepared by Frontier Economics (which is split into two parts).

In **Appendix B**, we attach a report prepared by Professor Martin Cave.

In **Appendix C**, we attach a technical report prepared by Northstream.

In **Appendix D**, we set out the text of the Bill, with our proposed changes and related comment[1].

[1] Without prejudice to Vodacom's rights in respect of the Bill and without acknowledging that any amendments to the Act are required, Vodacom includes herewith as Appendix D, its proposed amendments to the Act in an attempt to assist the Department of Telecommunications and Postal Services to achieve the objectives set out in the White Paper

Glossary

Act (or ECA)	The Electronic Communications Act, No. 36 of 2005
Authority (or ICASA)	The Independent Communications Authority of South Africa
Bill	The Electronic Communications Amendment Bill as published in Government Gazette number: 41261 of 17 November 2017
competitive WOAN	A WOAN that operates in a competitive environment with MNOs under the regulatory framework in the Act and that is assigned sufficient high demand spectrum to compete
Constitution	the Constitution of the Republic of South Africa, 1996
Department (or DTPS)	Department of Telecommunications and Postal Services
DG	Director General of the Department
dominant WOAN	A WOAN that is assigned all or substantially all of the unassigned high demand spectrum
EMF	Electro-magnetic frequency
ICASA Act	The Independent Communications Authority of South Africa Act, 2000 (Act No. 13 of 2000)
IMT	An ITU standard for 4G radio technologies
ITA	Invitation to apply, a process followed by the Authority in assigning radio spectrum
ITU	International Telecommunications Union
LTE	Long Term Evolution, a 4G wireless broadband technology developed by the Third Generation Partnership Project (3GPP)
MNO	Mobile network operator
MVNO	Mobile virtual network operator
SMME	A small enterprise defined in section 1 of the National Small Enterprise Act, 1996 (Act No. 102 of 1996)
TVWS	Television white spaces
White Paper	The National Integrated ICT Policy White Paper of 3 October 2016

WOAN	Wireless open access network

2. Executive Summary

2.1 Introduction

The Government's overall objectives for the telecommunications sector, as generally expressed over a number of years from the 2012 National Development Plan right through to the 2016 White Paper and most recently in the Memorandum on the objects of the Bill, include the promotion of broadband coverage in rural areas and underserviced areas, ensuring that as many users as possible can benefit from affordable broadband, promotion of innovation that addresses national developmental challenges and goals and transformation of the sector through enforcement of broad-based black economic empowerment.

The Government believes that the achievement of these objectives is held back by the current market structure and regulatory framework and has proposed far-reaching interventions in the Bill.

With the greatest of respect, Vodacom does not accept the interventions in the Bill.

The interventions in the Bill are a major departure from international practice in ways that dispose with the fundamental market principle of competition and undermine investment incentives.

Vodacom supports the Government's objectives to increase broadband coverage, promote affordable broadband and innovation and transform the sector. But in our view these objectives can and should be achieved through promoting investment and network competition within the best practice regulatory framework in the current Act.

The Bill suffers from flaws which render it susceptible to constitutional challenge, should it be enacted by Parliament as it presently stands. These include violations of the rule of law and the doctrine of legality, through impermissibly vague language and irrational provisions that will not achieve the Government's objectives; inroads into the constitutionally entrenched independence of the Authority; and unjustifiable violations of Vodacom's constitutionally-protected rights to property.

Vodacom's Proposal: A competitive WOAN

Although Vodacom does not believe a WOAN is necessary to meet the Government's objectives, we can envisage a competitive WOAN that still preserves the fundamental principles of market-based competition, innovation and investment operating within the regulatory framework in the current Act, while also contributing meaningfully to the transformation of the ICT sector.

A competitive WOAN would have the following features:

(a) be **sustainable**; able to achieve sufficient scale and scope to become a viable business

(b) be an **efficient wholesale provider**; it must be disciplined, innovative and customer-focused, using assigned spectrum in the most efficient way and deploying the latest technologies

(c) be capable of **succeeding on its own merits** in the medium term; not unduly, unfairly or unreasonably benefitted by spectrum and other incentives

(d) **operating in a competitive environment** with MNOs

(e) be an additional **vehicle for broad-based black economic empowerment**, through investment opportunities in the competitive WOAN and in MVNOs and resellers facilitated by the WOAN

There are two ***essential requirements*** to achieve this competitive WOAN.

First is the assignment of sufficient unassigned high demand spectrum to the WOAN and sufficient unassigned high demand spectrum to other operators, which will allow the parties to compete at the wholesale level with certainty of tenure, for at least 15 years without the risk of early termination.

Second is the retention of the current settings for facilities leasing under Chapter 8 and pro-competitive measures under Chapter 10. Vodacom opposes the changes in the Bill to Chapters 8 and 10 that distort the carefully balanced powers, obligations and incentives provided under the Act. We believe that these changes will result in reduced investment by the operators that are at risk of regulatory intervention in their networks, to the detriment of consumer welfare.

If operators can have sustainable business models, so they can exist and prosper alongside the competitive WOAN, then those operators will be able to make long-term commitments to acquire capacity in the competitive WOAN to enable its financing. Furthermore, competition at the infrastructure level will continue to facilitate rural coverage.

2.2 Adverse impact of a dominant provider of wholesale mobile broadband services

If the WOAN is assigned all or most of the unassigned high demand spectrum, together with the return of spectrum, non-exclusive rights, cost-oriented network access and the incentives granted to the WOAN under the Bill, then it would result in competing mobile networks being replaced, over time, with a dominant network provider.

This will remove competition at the wholesale level, reducing incentives for innovation and efficient investment and operations, reducing supplier choice for resellers, increasing their wholesale costs and may ultimately weaken competitive intensity at the retail level to the detriment of consumer welfare.

Vodacom asked Frontier Economics to provide an empirical analysis to quantify the effects on consumer welfare of a dominant WOAN, as compared with a more conventional scenario in which network competition continues to drive mobile market outcomes in South Africa in the long term.

The overall impact of a dominant provider of wholesale mobile broadband services on South Africa, after taking into account any static and dynamic benefits of a dominant WOAN, is sobering:

> *"Therefore, on balance we conclude that, whilst it could be argued that there are potential benefits in SA from the establishment of a dominant WOAN in the form of lower network duplication and/or spectrum aggregation, the detrimental impacts from the chilling of investment in SA and the slower transition to new/more efficient technologies are likely to significantly outweigh any such possible benefits"*[2].

In the report from Frontier Economics, they quantify the net negative impact on consumer surplus is in the region of **ZAR107 to153bn**[3].

These adverse impacts will be damaging for South African consumers, for jobs and for taxation revenue.

[2] Page 13, Frontier Economics report, Part 1
[3] Page 11, Frontier Economics report, Part 2

2.3 Spectrum issues

The changes in the Bill dealing with radio spectrum introduce a new regime for the assignment of unassigned high demand spectrum and for the return of assigned high demand spectrum, among other things.

The release of high demand spectrum is critical to achieving the Government's objectives. In 2012, the National Development Plan discussed the importance of high demand spectrum, and its early market release:[4]

> *"Spectrum allocation is perhaps the biggest regulatory bottleneck in the proliferation of rapidly deployable wireless technologies to meet the diverse needs of the society and economy. The spectrum that will become available with the shift from analogue terrestrial broadcasting to digital should be swiftly allocated to ensure services expand with emerging technologies in this band."*

Vodacom agreed with the Government on this issue in 2012 and we continue to agree.

Vodacom's Proposal: A way forward for assignment of high demand spectrum

Vodacom proposes a way forward to achieving the goals in the 2012 National Development Plan.

The Authority should either continue the July 2016 ITA or commence a new ITA process. In either case, the Authority needs to conduct a rigorous and transparent inquiry of the key requirements for assignment of the high demand spectrum to the competitive WOAN and the operators.

This should be done as soon as possible. It does not require changes to the legislation and should not be held up by the progress of the Bill.

The key issues that the Authority will need to determine in its inquiry are the spectrum to be assigned to the competitive WOAN and the operators, the competitive WOAN's coverage commitments and the WOAN capacity pre-commitments and rollout commitments to be given by operators that wish to acquire high demand spectrum. If the Authority continues with the July 2016 ITA, some of these issues will already have been addressed. The inquiry should be completed within a tight timeframe.

Following its inquiry, the Authority should then proceed to assign the high demand spectrum to the competitive WOAN and the operators, based on the results of this spectrum inquiry. Timing of deployment is related to the availability of the spectrum.

The 2.6GHz spectrum is available for deployment now and should be promptly assigned, whereas the 700MHz and 800MHz spectrum is currently in the migration process. Nevertheless, there needs to be an "end-stop" date for deployment of this spectrum and Vodacom proposes January 2020.

This will allow the competitive WOAN, and all operators, to put in place the necessary technical, infrastructure and commercial arrangements to make use of this spectrum by that date.

The competitive WOAN should be established as soon as possible and should have made substantial progress to be in a position to commence business by January 2020.

Importantly, there should be no risk of early return of high demand spectrum by the operators. The possibility of early return of high demand spectrum will mean that operators will stop investing in

[4] National Development Plan, page 174

assets when they know they may not be able to use them for their full life if they have to return their spectrum. It would amount to an interference with Vodacom's existing property rights and should be removed from the Bill. We discuss this further in section 8.3 below.

Finally on spectrum, the potential of the non-exclusive assignment of spectrum poses significant risk for mobile operators in terms of service quality and customer experience. Network operators can only ensure high quality, efficient and high capacity networks, and a reliable customer service experience, if they are permitted to make full exclusive use of assigned frequencies on every radio site installation and manage the interference between neighbouring sites.

2.4 Open access

The Bill introduces changes to Chapter 8 that we regard as disproportionate, arbitrary and intrusive. We do not agree that licensees need to provide open access to their networks, systems and facilities, whether or not it's reasonable to do so and whether or not they have market power.

The requirement in the Bill to provide open access to potentially the entire communications network, systems and services of a mobile operator is nearly the most intrusive intervention possible. While an intervention of this nature may have been the unlikely outcome under Chapter 10, this would have required a process of defining a relevant market and testing whether the market is competitive and, if the market is found to be uncompetitive, analysing that licensee's market power and its potential to behave in an anticompetitive manner. That process is not required under the changes to Chapter 8.

The balanced regulatory framework in Chapter 10 should not be by-passed by the changes to Chapter 8.

It is unusual for regulators internationally to mandate national roaming, MVNO access or other forms of active infrastructure sharing in the mobile sector, and when they do, they are remedies to identified market failures in specific wholesale markets, not methods of general open access.

In the attached report from Frontier Economics, they find that:

> *"... by extending the scope of access obligations to essentially cover communication providers' entire networks, systems and services without first identifying the relevant bottlenecks that would justify such a wide-ranging intervention, the Bill diverges from a core principle of regulatory best practice. In reality, the fact that mobile operators in markets around the world compete at all levels of the supply chain and that network access regulation is not widely observed internationally, indicates that genuine bottlenecks (that would justify such an intervention) are rare in mobile networks"*[5].

In his attached report, Professor Cave comments in relation to the interventions in the Bill:

> *"Operators are likely to factor regulatory risks of the kind described here into the 'hurdle rate' they use to justify future investments in any jurisdiction. These chilling effects are not likely to be very conspicuous, since they merely generate a void in investment plans, but as they apply to all operators they can have a very large cumulative effect on the sector and indirectly on economic prosperity in general"*[6].

Licensees will be disinclined to invest in infrastructure when they may be forced to provide quite extreme cost-based access to that infrastructure to their competitors for the simple reason that they made that investment, not because they possessed any market power.

[5] Page 23, Frontier Economics report, Part 2
[6] Page 9, Professor Cave report

As Frontier Economics puts it in the attached paper:

> *"Requiring such [deemed entities] to provide access at "cost-based" pricing would impact on their ability to recover the costs associated with major new investments, particularly those based on next generation technologies that carry considerable risks. This is because standard cost-based regulation would reduce the potential returns that operators can make from these investments if they are successful, but may not compensate them for the risk of failure (i.e. if demand turns out to be lower than expected or costs higher than expected)"[7].*

Vodacom considers that the Authority already has the tools available to it to achieve the Government's objectives and that it should use those tools instead of the changes in the Bill to Chapter 8. Vodacom proposes the retention of the current settings for facilities leasing under Chapter 8 and pro-competitive measures under Chapter 10.

2.5 Constitutional challenges

There are three respects in which the Bill falls short of the requirements of the Constitution of the Republic of South Africa, 1996 (the "**Constitution**"). This makes the Bill susceptible to a potential challenge.

The first respect relates to violations of the rule of law and the doctrine of legality. The rule of law is a foundational principle in our constitutional democracy, which prescribes that that a state must be governed by law and not by Ministerial dictation. It also prescribes that law (legislation) must be clear and certain, not be arbitrary or irrational, and that it must operate prospectively and not extinguish existing rights. The Bill infringes the rule of law in three respects, namely:

- that it is **irrational and arbitrary** in a number of important respects (principally, that the measures included in the Bill will not achieve the Bill's stated aims and will, perversely, result in decreased efficiency, less investment into infrastructure and technological innovation, increased costs, and poorer service to the end user);

- that the Bill is **vague** in a number of material respects and it is not clear how it is to be implemented, or what its effect will be on licensees such as Vodacom; and

- that the Bill purports to **incorporate the White Paper** and thereby seeks to elevate the White Paper to the status of legislation. In addition to raising rule of law issues, this is a breach of the doctrine of separation of powers.

The second respect in which the Bill is unconstitutional relates to the Bill's infringement of the constitutionality guaranteed independence of the Authority. Section 192 of the Constitution provides that there must be an independent regulator to regulate "*broadcasting*" in the public interest. "*Broadcasting*" is defined broadly to include unidirectional electronic communication to the public by means of any electronic communications. There is no specific technology which is prescribed (in the Constitution or through legislation) through which broadcasting takes place. Traditionally, broadcasting occurs through television and radio, but increasingly, broadcasting takes place using mobile technology. Moreover, the Bill encroaches even on a more narrowly-defined conception of broadcasting, as it empowers the Minister to control spectrum to such an extent that it materially affects traditional broadcasters.

[7] Page 23, Frontier Economics report, Part 2

The third respect in which the Bill is unconstitutional relates to violations of Vodacom's property rights. Again, there are three respects in which this is so:

- the Bill empowers the Authority to require the return of high demand spectrum by licensees, even before the expiry of the current spectrum licences, for acquisition by the WOAN. In addition, the Bill contemplates the loss of exclusive rights in and to the spectrum and the obligation to share the spectrum on an "open access" basis. Both of these amount to an unjustifiable and **arbitrary deprivation of Vodacom's existing rights to spectrum**;

- in addition to being an arbitrary deprivation of Vodacom's rights to spectrum, the same powers also amount to an **expropriation of Vodacom's rights to spectrum**; and

- finally, the extensive obligations in the Bill on licensees to provide wholesale open access to their electronic communications networks and facilities amount to an **arbitrary deprivation of Vodacom's existing rights to property in its facilities**.

3. Previous engagement with the Government

The Minister of Telecommunications and Postal Services, Dr Siyabonga Cwele published the National Integrated ICT Policy White Paper on 03 October 2016. The White Paper was published as a final document, meaning that it was not circulated to the public through publication in the government Gazette as envisaged in section 3(5) of the Act. As such, Vodacom and those more generally affected by the White Paper were not afforded an opportunity to make representations or comments on the text proposed as the White Paper.

Between December 2016 and February 2017, the Ministry and the Department made requests in meetings with industry associations for operators in particular to provide recommendations on the implementation of the White Paper on a without prejudice basis.

In preparing for this, six operators[8], including Vodacom, appointed Deloitte (a professional services consultancy company) to facilitate dialogue amongst these operators.

Thereafter, Deloitte was requested to facilitate and co-ordinate the creation of a Submission Document. The Submission Document contained an expanded view of the presentation made at the Ministerial Engagement session with a focus on key principles where the operators supported, in principle, the establishment of a sustainable wholesale WOAN taking into consideration the transformation objectives outlined in the White Paper.

An extensive process of engagement between the Government and the participating operators ensued. Following on from a presentation shared at the Ministerial Engagement session held on 17 February 2017, and a subsequent meeting held with the Director General (DG) of the Department of Telecommunications and Postal Services (DTPS) on 24 February 2017, the DG invited a submission from the participating operators.

In developing the content for the submission, the participating operators considered the strategic goals of Government, economic sustainability of the ICT industry within the South African market and to some extent international best practice before formulating statements of intention/ support and/or policy implementation recommendations.

The Submission Document contained the collective recommendations made by the participating operators toward a mechanism or model for implementation of the National Integrated ICT Policy where these recommendations were primarily focused on the implementation of a sustainable WOAN.

The model for implementing the WOAN as proposed by the operators contained both commitments (e.g. buying capacity from WOAN) and conditions (e.g. assigning sufficient spectrum to existing operators).

On 24 May 2017, the Minister of Post and Telecommunications released a media statement as part of his Budget Vote speech in which he stated there will be no urgency to return the current high demand spectrum from licensees until the end of current license period to ensure investment certainty and, in return, the licensees would commit to buy at least 30% of the existing capacity of WOAN to enable its financing.

This previous engagement forms the backdrop of where we are today with the proposed Bill.

[8] Cell C Limited, MTN Proprietary Limited, Multisource Telecom Proprietary Limited, Neotel Proprietary Limited, Telkom SA Limited and Vodacom Group Limited

4. Chapter 3A

Part A Introduction

4.1 Introduction

The Bill introduces a new Chapter 3A dealing with the licensing of a WOAN.

In Part B of this section 4, we discuss the WOAN and the risk and adverse impact that arise under the Bill of the WOAN as a dominant wholesale mobile broadband services provider. The creation of a dominant provider of wholesale mobile broadband services will reverse previous Government policy favouring network competition and take South Africa outside the bounds of international best practice.

The stakes are too high to experiment with new and untested approaches. Vodacom considers that the Government's objectives will be met most effectively through the promotion of competition at all levels of the value chain, and supporting the current best practice regulatory environment in addressing any inefficiencies that may exist in the market, in an effective and sustainable way. Competition in the mobile sector is achievable right throughout the value chain, with multiple network providers and an array of retail service providers.

Instead of a single, dominant provider of wholesale mobile broadband services, there can be a number of providers at the wholesale level, some providing facilities, others providing electronic communications network infrastructure and network services, and many more at the retail level, including service providers in the form of MVNOs and resellers.

While Vodacom considers that the Government can meet its objectives through network competition, with the tools already available in the current Act and the processes that are underway, Vodacom can envisage a competitive WOAN as part of a regime that still preserves the fundamental principles of market-based competition, innovation and investment.

We discuss this competitive WOAN in our proposal in Part C.

Part B Critique of the Bill

Our key critique of the Bill

Our key concerns with the new Chapter 3A are that the prospect of a dominant WOAN must be avoided, otherwise it will cause considerable consumer detriment. A competitive WOAN is the only viable WOAN option.

4.2 Prospect of a dominant provider of wholesale mobile broadband services

The 2012 National Development Plan provided that[9]:

> *"Spectrum policy should favour competition, but incumbents should not be excluded from gaining access to bands they need to build networks using new technologies"*

Vodacom supports this policy. However, while it may not be the Government's intention, the necessary outcome of the Bill as drafted is that all or substantially all of the unassigned high demand spectrum could be allocated to the WOAN and none or a limited amount to the operators.

[9] National Development Plan, page 174

If this occurs, together with the return of spectrum, non-exclusive rights, cost-oriented network access and the incentives granted to the WOAN under the Bill, it would result in the creation of an effective dominant provider of wholesale mobile broadband services, tending towards a monopoly.

4.3 A dominant provider of wholesale mobile broadband services will be detrimental to consumers

An effective dominant provider of wholesale mobile broadband services will remove competition at the wholesale level, reducing incentives for innovation and efficient investment and operations, reducing supplier choice for resellers, increasing their wholesale costs and may ultimately weaken competitive intensity at the retail level, to the detriment of consumers.

Professor Cave comments on this in his attached report:

> *"However, I believe it would be very risky to use spectrum assignments to focus incremental capacity from 2018 on the WOAN alone, by granting it priority access to new bands, and possibly in addition by transferring to it bands currently held by existing mobile networks. That would effectively leave almost all network investment decisions in the hands of a single gate-keeper - the WOAN, which would have little incentive to take timely and well-thought out decisions, and – in considering network up-grades - would be influenced by the knowledge that households and firms would have nowhere else to go for new services. A possible by-product of this would be the elimination of the 'races' currently observed between two or more rival network operators to bring new network services to the South African market place"*[10].

In the attached report from Frontier Economics, they conclude on this point that:

> *"... when assessing therefore the whole package of the Bill proposals, even if not intended, we consider it is very likely to result in the competitive dynamic that currently exists in SA being replaced by a highly asymmetric market structure with a single dominant mobile network – the WOAN. In other words, even if some of the existing MNOs were able to maintain some of their own network infrastructure in the longer run, the competitive constraint that they would exert on the WOAN under the package of Bill amendments would be very limited*[11]*"*

4.3.1 Damaging impact of a dominant WOAN

The current regulatory environment in South Africa uses competition at the network level to incentivise operators to differentiate and use the latest technologies to improve their network capability. This maximises the level of network investment each year and the level of employment to drive improved levels of customer service. In contrast, a dominant single wholesale provider will mean no effective competitive pressure, less innovation, and overall much less investment in infrastructure, with fewer jobs and fewer opportunities for SMMEs.

Mobile networks are different from utilities networks such as electricity, gas or water. Utilities offer little or no scope for innovation or differentiation at the "network layer". Once a cable or pipeline has been laid, there is no further enhancement or upgrade to be considered in the future and no scope for one player to cause another player to match investments. In contrast, mobile communications networks, in all markets around the world, require constant innovation and investment. Competition provides a very positive stimulus for ongoing innovation and investment.

The emergence of a dominant WOAN and the weakening of electronic communications network facilities and service competition would result in the digital communications sector transforming into

[10] Page 10, Professor Cave report
[11] Page 26, Frontier Economics report, Part 1

a static dominant or monopoly public utility. This may require substantial Government involvement and financial support.

A dominant WOAN would be a radical step towards re-establishment of the kind of telecommunications monopoly that predated the licensing of the mobile operators and gradual introduction of competition in the fixed market. This would undo the gains achieved towards liberalisation, with its corresponding benefits for growth and investment.

4.3.2 Infrastructure requirements for a single network with all the spectrum will be significant

If the WOAN is assigned all or substantially all of the unassigned high demand spectrum, then it will have significant network service infrastructure and facilities requirements if it is going to use all of this spectrum efficiently.

There are practical and economic limitations to the number of mobile radio carriers that can be accommodated on towers when deploying all of the unassigned high demand spectrum in the 700MHz, 800MHz and 2.6GHz bands . Limitations include the number of radio transceiver units that can be installed (often in limited space, either in the base station shelter on ground or on the tower), the amount of vertical space available for antennas on the tower, and the power losses and interference and intermodulation effects when multiple frequency signals are combined in one physical location. A further concern is the elevated levels of EMF emissions that could result when all of the unassigned spectrum in 700MHz, 800MHz and 2.6GHz bands is deployed on all of the towers. In practice, these combined effects highly constrain the theoretical economies of scale that may be expected if all available frequencies were to be provisioned on all mobile towers.

To understand this better, Vodacom asked network equipment vendor, Nokia South Africa, and reputable telecommunications structural experts, RBI Tech International (RBI), to assist with a viability exercise of a WOAN that is assigned all of the unassigned high demand spectrum.

Nokia South Africa assisted by providing a bill of materials for the radio access network, assuming the WOAN was assigned all of the spectrum in the unassigned high demand spectrum bands, while providing a coverage, quality and throughput network comparable to the existing operators and assuming efficient use of spectrum.

The cost implications are staggering. The bill of materials for the radio access network alone would cost up to three times what it would cost at today's prices for a typical mobile operator operating up to three spectrum bands.[12]

RBI was then requested to conduct a detailed infrastructure impact analysis using Nokia South Africa's bill of materials. RBI concluded that the number of remote radio units (RRU's) and additional mast loading to support the WOAN, and which is typically installed on the mast, will be approximately four times that of a single existing operator's current requirements.[13]

A suitable site that could accommodate this equipment would require more than double the current norm of mast space, even after optimisation of the mast space, as well as an additional container and fibre backhaul. Most existing sites will not meet these requirements. This means that the opportunities for the dominant WOAN to share with existing operators will be limited if it is going to use all of the unassigned high demand spectrum efficiently.

[12] Excluding the cost of batteries, containers, air-conditioning and transmission, as well as mast infrastructure
[13] Excluding any current and additional WOAN antennas, combiners and transmission dishes

Because sharing opportunities will be limited in these circumstances, this means that new site infrastructure would be required by the dominant WOAN. This in turn means the WOAN would need to secure permissions to build new sites and to complete the civil works. This will take time, and cost, and will therefore constrain the speed at which the WOAN can roll out its network.

Accordingly, the cost of the equipment required by a WOAN that is assigned all or a substantial amount of high demand spectrum in order to use it efficiently will be very expensive, the opportunities for sharing with other operators will be few and far between and the cost and time implications of planning permissions and civil works for new infrastructure to make efficient use of all of the spectrum assigned will, when all taken together, be very time consuming and adversely impact on the effectiveness of the WOAN.

If the WOAN was a competitive WOAN, as we propose, then these infrastructure requirements would be less necessary to achieve efficient use of spectrum and sharing opportunities would increase.

4.3.3 A single network with all the spectrum cannot use that spectrum efficiently

Spectrum is a scarce resource that must be occupied and used efficiently. As expressed by the International Telecommunications Union:[14]

> *"In a globalizing world with rapid technological innovation and increasing demand for radio frequencies, effective spectrum policy should promote the roll-out of services, reduce barriers of entry, and promote innovation. … Technically, the efficient use of spectrum, at a basic level, implies the fullest possible use of all available spectrum."*

However, even if the WOAN received an assignment of all or substantially all of the unassigned high demand spectrum, it would not be able to occupy and use it efficiently. The key reason for this is that user equipment does not allow the full capacity in the high demand bands to be used efficiently.

Carrier aggregation of certain spectrum bands and band combinations is currently limited on the user equipment side[15]. Even if the WOAN were able to secure and build the required infrastructure to utilise all the spectrum in the unassigned high demand spectrum bands, the mass market user equipment is unlikely to be able to utilise the full capacity of these bands in the foreseeable future. In due course, this may change as the IMT700 and IMT800 ecosystem matures.

In LTE, the maximum amount of bandwidth that can be used in any single component carrier is 20 MHz and, if any more is to be used, it needs to be aggregated with other carriers. Using the July 2016 ITA spectrum bands as a guideline, and assuming that the WOAN was to be assigned all or substantially all of the unassigned high demand spectrum, this would translate to a total bandwidth of 2x30 (700 MHz – BAND 28) + 2x30 (800 MHz – BAND20) + 2x70 (2600 MHz – BAND 7) + 1x20 (2600 MHz – BAND 38) = 280 MHz.

[15] There are two types of carrier aggregation, intra and inter band carrier aggregation. Intra band carrier aggregation combines spectrum within the same band whilst intra band carrier aggregation combines spectrum from different bands.

Based on the relevant 3GPP standard[16], the maximum amount of bandwidth that can physically be aggregated in these spectrum bands is 2x60 MHz, which equals 120 MHz[17]. The dominant WOAN would therefore only utilise **42%** of all its assigned spectrum for the purpose of carrier aggregation, if it received all of the unassigned high demand spectrum.

It is clear that the technical standards and current user equipment (UE) are not designed for a single entity having all of the unassigned high demand spectrum in the 700MHz, 800MHz and 2.6GHz bands .

4.3.4 A single network with all the spectrum would receive marginal and transient economy of scale benefits, which would be outweighed by the dynamic costs

If the WOAN receives all or substantially all of the unassigned high demand spectrum, it may realise static economies of scale benefits because they will require fewer towers than other operators. The Government may see the static benefits of fewer towers as an attractive feature of assigning all that spectrum to the WOAN.

However, any economies of scale benefits would be marginal. There are two reasons for this.

First is that, as Vodacom has mentioned in other sections of these submissions (see section 4.3.2), the towers occupied by the WOAN will need to be large and expensive. This means that the dominant WOAN would have higher costs per site, as compared to where there is network competition.

Second is that the level of duplication is limited in South Africa. Approximately 75% of the sites are shared currently. Frontier Economics has found that any cost saving is likely to be small in South Africa for this reason. They state:

> *"Existing roaming agreements limit the extent of duplication. In South Africa the two smaller operators use national roaming, hence the geographic coverage of their networks is much lower than the geographic coverage of the two larger operators;*
>
> *There is already extensive facility sharing for sites and towers in South Africa. Infrastructure sharing in the mobile sector is taking place through commercial agreements, such as electronic communications facilities leasing agreements. … Vodacom has been sharing an increasing number of sites over time"[18].*

They also state that:

> *"With the "competitive WOAN", implemented without the Bill, there would likely be an opportunity for reduction of duplication in rural areas. Some of the benefits from avoiding duplication are likely to be achieved by the "competitive WOAN" focused on more rural areas. Given this, the additional benefits from avoiding duplication under a dominant WOAN in the "Bill scenario" may be limited"[19].*

Further, any static efficiency gain would also be transient. Any static efficiencies available to a dominant WOAN would eventually dissipate because such a WOAN would not, due to its dominant position, have sufficient incentives to invest in new technology, as compared to where there is network

[16] 3GPP Rel 15, V15.1.0 standard which is currently still work in progress and due to be completed at the end of Q3 2018

[17] This also assumes that the devices above support equal capability for uplink and downlink carrier aggregation, unlike today, where there is a significant difference between uplink and downlink with uplink not as mature as downlink carrier aggregation.

[18] Page 42, Frontier Economics report, Part 1

[19] Page 41, Frontier Economics report, Part 1

competition. Investment in new technologies is the greatest driver of cost efficiencies in telecommunications networks, as discussed by Frontier Economics in their attached report.

As we discuss further in sections 4.5.1 and 5.11.1, these static benefits (as compared to where there is network competition) must be weighed against the dynamic costs of other operators that are spectrum constrained having a higher unit cost and, therefore, adversely impacting on the operators' ability to compete with the WOAN.

In the attached report from Frontier Economics, they find that the static benefits are outweighed by the dynamic costs.

4.3.5 Reliance on a single network will adversely affect national resiliency and security

In the case of a dominant WOAN, South Africa will be critically reliant on the performance and resiliency of this single mobile network. A network outage in that network will impact all users (consumers, businesses, public authorities, emergency and security services) that are left without communications and will have a catastrophic effect on the country. An essential attribute of network competition is that there are multiple, electronically independent, networks that can provide resiliency if one network fails for whatever reason.

Unplanned outages can occur for prosaic reasons, such as unavoidable weather-related events, right through to malicious attack.

Vodacom has experienced wide scale unplanned network outages for several hours at a time, as have all mobile operators at some point in time over the past several years and more recently as late last year due to "technical glitches" on the network.

4.3.6 Environmental and public safety issues with a single network with all the spectrum

Vodacom's internal modelling suggests that sites utilising all the spectrum in the unassigned high demand spectrum bands, at regulated power levels optimal for Quality of Service and coverage, would require EMF exclusion zones to be twice the current norms.

This risk will prevail at all sites where the WOAN deploys all of the unassigned high demand spectrum in the 700MHz, 800MHz and 2.6GHz bands, thus increasing the overall emissions.

4.3.7 There is no compelling international precedent for a single network with all the spectrum

In the vast majority of countries around the world, governments and regulators have deliberately encouraged private sector investment in competing mobile networks. Whereas fixed telecommunications networks historically arose as state monopolies, and governments and regulators have generally failed to introduce strong fixed network competition, mobile networks are different and have normally been competitive from the outset. Governments and regulators have generally seen enormous benefits in encouraging three to four competing network players per market.

In contrast, there are only a handful of examples where governments have sought to introduce wholesale mobile networks, and none have yet delivered the proposed benefits and none provide a compelling template for the dominant WOAN. Indeed, there is a clear opportunity cost for consumers that results when existing operators are prevented from gaining access to additional spectrum and pushing forward with rapid investments in 4G, under the incentive of competition.

Vodacom also notes that the interventions in these markets in other countries are far less extreme than what is being proposed under the Bill. They don't contemplate dominant WOANs with all or a

substantial amount of the high demand spectrum, with the forced return of spectrum by other operators or ideas such as non-exclusive use. They still have operators competing with the WOAN entities, using their own exclusive spectrum rights. In some respects, they are closer to our proposed competitive WOAN.

In the attached report from Frontier Economics[20], they discuss and contrast these examples where governments have sought to introduce wholesale mobile networks.

4.3.8 Sophisticated regulatory oversight will be required

A dominant wholesale mobile broadband network, envisaged to be the only likely network services provider over the long term, will require intensive ongoing regulation, together with high levels of monitoring and enforcement. Without suitable and effective regulation of the dominant WOAN, the risks include inefficient operations, higher costs, inflated wholesale pricing, coverage gaps, capacity constraints and quality issues.

Every aspect of the WOAN's service will need to be regulated in perpetuity, including price, quality, coverage, investment, efficiency and even innovation as new technologies emerge. In a competitive environment, all this is resolved through trial and error, which is why competitive environments lead to more optimal outcomes. Except where its need is imperative, such as in the case of natural monopolies, regulation will not be an effective substitute for competitive markets to achieve efficient use and access. As such, it is a substantial task for the Authority to regulate the WOAN and errors will be very costly for the industry and consumers.

To make matters worse, whether regulation is effective or not may be largely invisible to the Government and the Authority. Neither the Government nor the Authority will be certain what a competitive environment would have delivered in terms of price and quality.

A competitive WOAN would not require this regulation as it would be operating in a competitive market with other wholesale operators. Indeed, ensuring that the WOAN operates independently within a healthy competitive environment is the best guarantee that it will be fit to survive over the long term.

This is further discussed by Frontier Economics in its attached report[21]. They say that, although regulation can mitigate some of the potential harm caused by a dominant WOAN, regulation is generally considered to be an imperfect substitute for competition. Regulators typically do not have the information necessary to mimic competition, which is an even bigger problem in the telecommunications industry than in many other industries.

4.4 Incentives that may be granted to the WOAN

Under the new section 19A(4), the Minister may propose incentives for the competitive WOAN, including reduced or waived spectrum fees, access to rights of way and allocation of funds to construct or extend a network in under-serviced areas.

Vodacom proposes that these matters be determined by the Authority, taking into account the impact on competition in the market.

While we can envisage the competitive WOAN benefiting from incentives in its establishment phase, the incentives should not be extensive, so that the WOAN would be unduly advantaged over its competitors. However, beyond this establishment phase (perhaps a year or two), the WOAN should not enjoy any special privileges over its competitors.

[20] Annex A, Frontier Economics report, Part 1
[21] Page 41, Frontier Economics report, Part 1

4.5 Impact of these changes

4.5.1 Damaging impact of a dominant WOAN

Vodacom has asked Frontier Economics to provide an empirical analysis to quantify the adverse effects on consumer welfare of a dominant WOAN, as compared with a more conventional scenario in which network competition continues to drive mobile market outcomes in South Africa in the long term.

In conducting this analysis, Frontier Economics considered the limited static and dynamic benefits from a dominant WOAN and found that the dynamic costs more than outweighed any such benefits.

They highlight the damaging impact on investment and innovation of a dominant entity:

> *"Economists and policymakers recognise that the incentives to invest and innovate are much weaker in markets where there is a single dominant firm with an unassailable advantage. This is because the incentives for the dominant firm to introduce and develop innovative improvements to their products are limited, as the new innovation will often displace the previous technology or product. This is often referred to as the "replacement effect."*[22]

Their empirical analysis suggests that:

> *"... the available empirical evidence supports the hypothesis that monopolists are slower to innovate and migrate to new mobile technologies. ... markets with network monopolies have been markedly slower than competitive markets to transition to new technologies. For example, HSDPA (3G) was typically launched over two years later in single network countries."*[23]

> *"This slower transition to new technologies also contributes to lower take-up of new services. In fact, markets with monopolistic provision of mobile services were estimated to lead to, on average, a 17 percentage points lower 3G take up than under network competition, after controlling for other factors driving 3G take up."*[24]

The overall impact on South Africa, after taking into account the benefits referred to above, is sobering:

> *"Therefore, on balance we conclude that, whilst it could be argued there are potential benefits in SA from the establishment of a dominant WOAN in the form of lower network duplication and/or spectrum aggregation, the detrimental impacts from the chilling of investment in SA and the slower transition to new/more efficient technologies are likely to significantly outweigh any such possible benefits".*[25]

In the report from Frontier Economics, they quantify the net negative impact on consumer surplus is in the region of **ZAR107 to153bn**[26].

These adverse impacts will be damaging for South African consumers, for jobs and for taxation revenue.

4.5.2 A single network cannot use all the currently unassigned spectrum efficiently

[22] Page 34, Frontier Economics report, Part 1
[23] Page 35, Frontier Economics report, Part 1
[24] Page 36, Frontier Economics report, Part 1
[25] Page 13, Frontier Economics report, Part 1
[26] Page 11, Frontier Economics report, Part 2

If the WOAN is unable to use all the unassigned high demand spectrum efficiently, then there will be a waste of this scarce resource, as compared to the alternative scenario where efficient usage is maximised by the WOAN and the other operators receiving sufficient spectrum to meet demand from their active customers. We discuss this sufficiency principle in greater detail in section 5.11.1 below.

Spectrum efficiency is measured in terms of the key metrics of users per Hz and Mbps per MHz. Currently, the three largest operators in South Africa have had to become highly spectrum efficient.[27] As the metrics of users per Hz and Mbps per MHz drop, the licensee becomes less spectrum efficient. This shows that a dominant WOAN would not be spectrum efficient unless it carried the vast majority of nationwide mobile traffic.

4.5.3 Reliance on a single network will adversely affect national resiliency and security

With diminished resiliency of a single mobile network, a failure or interruption in the network could have a damaging effect for consumers and throughout the economy. This heightens risks for the country around emergency services and national security, which generally require fall-back access to multiple networks as a pre-requisite.

Part C Proposals

4.6 Vodacom envisions a competitive WOAN

While Vodacom considers that the Government can meet its objectives through network competition, with the tools already available in the current Act and the processes that are underway, we can envisage a competitive WOAN as part of a regime that still preserves the fundamental principles of market-based competition, innovation and investment.

This competitive WOAN would avoid the substantial risks of a dominant provider of wholesale mobile broadband services described in Part B and would have the following features:

- be **sustainable**; able to achieve sufficient scale and scope to become a viable business
- be an **efficient wholesale provider**; it must be disciplined, innovative and customer-focussed, using assigned spectrum in the most efficient way and deploying the latest technologies
- be capable of **succeeding on its own merits** in the medium term; not unduly, unfairly or unreasonably benefitted by spectrum and other incentives
- **operating in a competitive environment** with MNOs
- be an additional **vehicle for broad-based black economic empowerment**, through investment opportunities in the competitive WOAN and in MVNOs and resellers facilitated by the WOAN

This WOAN would compete on equal terms with Vodacom and with other operators for wholesale customers. It would be able to build a competitive LTE network over a reasonable period of time and would contribute towards enhancing the competitiveness of the ICT sector, without distorting its efficiency and welfare creating capability. It will be an attractive business for investors and for customers.

It will attract MNOs as customers, to use the wholesale services as a means of addressing their capacity requirements and to provide another way to extend their coverage. There will be opportunities for the competitive WOAN to assist in extending coverage into rural areas where the MNOs may have roll out obligations.

Smaller MNOs may benefit more than larger MNOs. Smaller MNOs may be capital constrained and not able to invest in further high demand spectrum and additional infrastructure, so the competitive WOAN provides an alternative for them to investing further in their own networks, while still addressing a nationwide retail customer base.

MVNOs will become customers, to use the wholesale services as a platform to provide a range of mobile services to their retail customers. Niche entrants will also look to combine the wholesale services with new solutions and technologies to target specific subscriber segments.

The Black Industrialist programme in the ICT Sector and a general economic empowerment objective can also be realised through investment opportunities in the competitive WOAN and in MVNOs or resellers, which could be facilitated by access to the competitive WOAN's network.

As a key player in the ICT Sector, a competitive WOAN could be primed to contribute meaningfully to the furtherance and sustainability of transformation of the sector across all the BBBEE elements and if properly positioned within a competitive industry and with appropriate spectrum assignment and exploitation within such industry, the competitive WOAN could be employed as an opportunity to boost empowerment and as such should be BBBEE level 4 accredited and 51% black owned. Indeed, if network operators were to make commitments to purchase capacity from a competitive WOAN, the WOAN must be at least 51% black owned to ensure that network operators' transformation programmes are not negatively impacted.

As Frontier Economics notes in its attached report:

> "*By competing on an equal footing with other operators, this form of WOAN could improve consumer outcomes by enhancing infrastructure-based competition. It should also make it easier for MVNOs and smaller MNOs that rely on other operators' networks to compete at the retail level, by serving as an alternative, wholesale only, provider of upstream services*"[28].

Professor Cave has a similar positive view of a competitive WOAN in his attached report:

> *"…I welcome the introduction of a WOAN, to enhance both service and network competition and to achieve equity objective such as increased participation in the sector and wider access to mobile services. However, the introduction of a WOAN should not be allowed to allow the emergence of a new dominant firm, which - by virtue of its privileged access to spectrum - would become first the monopoly provider of incremental capacity, and then – as other firms left – an overall monopolist. This would have a very adverse effect on the South African mobile sector, and on the whole economy"*[29].

[28] Page 22, Frontier Economics report, Part 1
[29] Page 12, Professor Cave report

4.7 Essential requirements for a competitive WOAN

A competitive WOAN is achievable under the Act as it currently stands, but it is not achievable with the interventions made in the Bill that lead to a dominant WOAN and that obstruct or even prevent the achievement of a competitive WOAN. This should be remedied if this WOAN is to be achievable.

There are two ***essential requirements*** to achieve a competitive WOAN. First is the assignment of sufficient unassigned high demand spectrum to the WOAN and sufficient unassigned high demand spectrum to other operators. Second is the retention of the current settings for facilities leasing under Chapter 8 and pro-competitive measures under Chapter 10.

4.7.1 Assignment of sufficient high demand spectrum

The first essential requirement is the assignment of sufficient unassigned high demand spectrum to the WOAN and sufficient unassigned high demand spectrum to other operators to allow the parties to compete in providing equivalent services.

The Authority should either continue with the July 2016 ITA or commence a new ITA process. Either way, the Authority should promptly conduct an inquiry of the spectrum to be assigned so that the competitive WOAN and operators will achieve certainty of spectrum availability. We discuss this further, including how much spectrum would be sufficient, in Part C of section 5.

If operators can acquire sufficient high demand spectrum with certainty of tenure, for at least 15 years without the risk of early termination, then this would enable them to maintain a sustainable business and commit the investment needed to develop and extend their own networks and commit to acquiring capacity in the competitive WOAN and so enable its financing.

4.7.2 Retention of current settings

The second essential requirement is the retention of the current settings for facilities leasing under Chapter 8 and pro-competitive measures under Chapter 10, which we discuss further and make proposals on in section 6. These existing tools under the Act enable a firm, proportionate and expeditious response by the Authority to market power problems.

Under the existing Chapter 8, operators would provide facilities leasing to the WOAN, on non-discriminatory terms, so that the WOAN can quickly establish coverage in those areas where there are facilities. Vodacom and other MNOs provide facilities leasing to other operators over thousands of sites all around the country. There are standard industry terms for this service and it is a commonplace, every day arrangement. Vodacom will welcome the WOAN as a customer of our facilities leasing services.

A WOAN that is enabled through facilities leasing under fair and due process under the existing Chapter 8, and supported by capacity pre-commitments from the operators, will be an important vehicle for promoting services-based competition. This can be achieved under the existing legislation.

However, the changes in the Bill to Chapter 8, and to Chapter 10 to a lesser extent, distort the carefully balanced powers, obligations and incentives provided under the Act. Vodacom is concerned about these arbitrary and unprincipled changes, discussed in Part B of section 6. In our view, the consequence of the changes in the Bill will be reduced investment by the operators that are at risk of regulatory intervention in their networks, to the detriment of consumer welfare.

If operators are expected to make long-term commitments to buy WOAN capacity, their own business models must be sustainable so that they can all exist and prosper in the future alongside the WOAN. This in turn depends on the operators also being able to receive sufficient high demand spectrum to meet their own network investment needs to participate in a healthy market for mobile services at both the wholesale network services and retail levels. If operators cannot acquire additional spectrum, then there will be no incentive for them to pre-commit to capacity on the WOAN with the result that the Government's ambition to strengthen the sector overall will not succeed.

5. Amendments to Chapter 5

Part A Introduction

5.1 Introduction

The Bill makes several far-reaching changes to Chapter 5, dealing with radio spectrum. The changes introduce a new regime for the assignment of unassigned high demand spectrum and for the return of assigned high demand spectrum, among other things.

The importance of high demand spectrum, and its early market release, was recognised in the 2012 National Development Plan[30]:

> *"Spectrum allocation is perhaps the biggest regulatory bottleneck in the proliferation of rapidly deployable wireless technologies to meet the diverse needs of the society and economy. The spectrum that will become available with the shift from analogue terrestrial broadcasting to digital should be swiftly allocated to ensure services expand with emerging technologies in this band."*

Our proposals involve the WOAN and operators being assigned the 2.6GHz and 700MHz and 800MHz spectrum promptly, with the WOAN and operators receiving the 700MHz and 800MHz spectrum by not later than January 2020. This should be enough time to allow the competitive WOAN, and all operators, to put in place the necessary technical, infrastructure and commercial arrangements to make use of this spectrum by that date.

The competitive WOAN should be established as soon as possible and should have made substantial progress to be in a position to commence business by January 2020.

In Part B of this section, we discuss our critique of the Bill in relation to radio spectrum. Vodacom has concerns over the Minister's role in assignment of high demand spectrum and the processes for assigning high demand spectrum under the Bill, as well as issues related to open access and non-exclusive use of spectrum and return of assigned high demand spectrum. The constitutional challenges which these aspects of the Bill give rise to are discussed in section 8 below.

In Part C, we set out our proposals for addressing the assignment of high demand spectrum to the competitive WOAN and to operators.

Part B Critique of the Bill

Our key critique of the Bill

Our key concerns with the changes to Chapter 5 are that the processes for assigning high demand spectrum should be undertaken by the Authority, the provisions related to open access and non-exclusive use of spectrum are not feasible and that return of assigned high demand spectrum will stop investment and ultimately lead to operators ceasing business.

In addition, Chapter 5 of the Bill raises concerns regarding the constitutionally-protected independence of the Authority, as well as infringements of Vodacom's constitutionally-protected rights to property.

[30] National Development Plan, page 174

5.2 The Authority should be responsible for the assignment of high demand spectrum

Under section 31E in the new Bill, the Minister will determine what constitutes high demand spectrum and which unassigned high demand spectrum must be assigned to the WOAN and so how much is available to other licensees.

While Vodacom accepts the Government has a role in setting general spectrum policy direction, we do not support an outcome where the planning and allocation of spectrum is controlled by the Minister, and the Authority's role is limited to the administration and management the assigned spectrum. The changes in the Bill that give the Minister authority over assignment decisions undermine the Authority's independence in controlling, planning, administering and managing the use and licensing of the radio frequency spectrum as contemplated under the Act (section 30(1)).[31] These are operational matters, which require proper market analysis and independence from any interference.

As expressed by the ITU:[32]

> "*Good governance involves transparent arrangements for accountability and fairness. While decisions on spectrum allocation (among uses) and assignment (to individual users) inevitably reflect public policy objectives, government or political interference in detailed decisions, such as which firm should receive a particular license, should be avoided. The reward for such forbearance is enhanced investor confidence and, ultimately, more and better services for end-users*".

As Professor Cave states in his attached report:

> *"... it is likely that the technical means by which the objectives are achieved are better off left to a technical agency operating within a clear legislative framework which prescribes agency's objectives, duties, and (in outline) its processes. Such an agency is separated from the hurly-burly of political strife; it can follow clear and internationally recognisable processes and procedures; and it can be made subject to a specified appeal process to a court. This equips it to make technical firm-specific decisions"*[33].

Professor Cave goes on to say:

> *"The assignment of high value spectrum licences to individual firms, often within an overall framework of spectrum allocation to different broad uses based on government policy, is highly technical matter which requires expertise which government departments may not possess. Access to such a valuable resource is often very contentious, and the assignment is often better done by a technical implementing body than by a government department, which is inevitably subject to pressure from applicants and other interested parties"*[34].

5.3 The conditions and commitments on operators should not be hard-wired into the legislation

The new section 31E(5) in the Bill sets out certain conditions, and that licensees should make certain commitments, associated with the assignment of high demand spectrum:

[31] The Authority's role under section 30(1) is limited under the changes in the Bill to "administers and manages the assignment, licensing, monitoring and enforcement" of spectrum use. The Authority will no longer have responsibilities for controlling or planning spectrum use

[32] International Telecommunications Union and World Bank, Telecommunications Regulation Handbook 2011, page 97, https://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-TRH.1-2011-PDF-E.pdf

[33] Page 3, Professor Cave report

[34] Page 4, Professor Cave report

"(5) The Authority may issue radio frequency spectrum licences for unassigned high demand spectrum not assigned to the Wireless Open Access Network as contemplated in subsection (4), on condition that—
(a) the Wireless Open Access Network is functional;
(b) the licensee procures a minimum of 30% capacity or such higher capacity as determined by the Authority, in the Wireless Open Access Network for a period determined by the Authority; and
(c) universal access and universal service obligations contemplated in section 31A are imposed on the licensee, and such obligations are complied with in rural and under-serviced areas before the assigned spectrum may be used in other areas by the licensee".

5.3.1 Condition that the WOAN is functional

Paragraph (a) imposes a condition that "*the Wireless Open Access Network is functional*"; "Functionality" is undefined, uncertain and ambiguous in meaning.

Although the meaning of functionality is unclear, the purpose of the condition appears to be that operators should receive an assignment of high demand spectrum no earlier than the WOAN. If the WOAN is functional, then it will be in a position to use the spectrum that is assigned to it and so the WOAN will be able to use that spectrum at the same time as the operators.

There are several issues that flow from this.

First, the point at which the WOAN becomes functional is largely determined by its shareholders, who are in control of how the entity prepares for its operation. The WOAN may well require facilities leasing from existing mobile operators and well-established processes and principles are in place for reaching agreement on these matters. The inverse of this is that the point at which the WOAN becomes functional is largely outside of the control of the operators. It may also be outside of the control of the Government.

This means there is not a strong incentive for the WOAN to become operationally functional if the condition in paragraph (a) is in place. The selected WOAN will not be under significant competitive pressure, as all other operators would have to wait until the WOAN is functional before they receive their assignment of high demand spectrum.

Second, even if the operators receive their assignment of high demand spectrum before the WOAN, this will not necessarily impede the WOAN in any material way. The operators can be expected to have ambitious rural rollout obligations imposed on them as part of the licensing process. This will be a major preoccupation of the operators to meet the relevant milestones. Although, as we suggest, the operators should still be able to use the assigned high demand spectrum in urban areas, while meeting their rural rollout obligations, the operators will not be able to focus all their attention on urban areas.

This gives the WOAN further time, if it is required, to establish themselves, while the operators are concentrating on meeting their rural rollout obligations.

Third, even if the operators do build their position in urban areas before the WOAN is fully functional, the retail market is being developed which will benefit all retail service providers, including potential future customers of the WOAN. This will deepen the market of retail service providers that will be available for the WOAN to attract across to its network.

Fourth, if, as we suggest, the operators will have capacity pre-commitments imposed as part of the licensing process, then this should enable its financing and it should not matter whether the operators receive their assignment of high demand spectrum before the WOAN. The WOAN will benefit from this committed demand regardless of the relative timing of the deployment of new spectrum by all parties.

Our conclusion on this point is that the functionality condition is ambiguous, but it is also unnecessary on several dimensions and may be counter-productive for the WOAN itself. Delaying access to spectrum artificially delays investment and reduces benefits to South African customers.

Frontier Economics, in their attached report[35], points to the uncertainty that will prevail if the unassigned high demand spectrum is not able to be assigned until the WOAN is functional. They say that, when combined with other measures in the Bill (such as cost-based open access and return of spectrum), there will be a "chilling effect" on the investment incentives of operators, which will run right throughout the period leading up to the operational commencement of the WOAN.

5.3.2 Commitment to acquire WOAN capacity

Paragraph (b) requires that "*the licensee procures a minimum of 30% capacity or such higher capacity as determined by the Authority, in the Wireless Open Access Network for a period determined by the Authority".*

As we read paragraph (b), this means that, if there were three operators receiving an assignment of high demand spectrum, each of the three would need to commit at least 30% of the capacity in the WOAN[36]. It could be higher, if determined by the Authority. The Authority also determines the period of the commitment.

Vodacom accepts there should be capacity pre-commitments by operators that receive an assignment of high demand spectrum. Vodacom proposes, in Part C of this section, that the Authority determine these commitments following an inquiry that considers the capacity requirements of the WOAN and other related matters.

Vodacom doesn't support, however, hard-wiring a minimum commitment into the legislation. There are too many factors at play in working out what an appropriate capacity pre-commitment should be that mean it is preferable to allow the Authority to consider and weigh up these factors in determining the necessary commitments. Importantly, for these purposes, the Authority may decide that it is appropriate for the commitment to be less than 30% for each licensee.

We can see at least one good reason why the commitment may be less than 30%. If there were three operators acquiring high demand spectrum, then that leaves only 10% of the WOAN's capacity available for other operators (as there could only be three), MVNOs and entrants. This would defeat the objective of promoting services-based competition and so unimplementable. It also risks setting the commitment level so high that it becomes commercially impractical for any operator to accept it, which means they will not acquire the high demand spectrum to avoid being subject to that commitment.

If the Authority determines the capacity pre-commitments, this will provide no particular advantage for the operators, as they will be subject to any commitment that the Authority determines if it wishes to acquire high demand spectrum. However, operators can be confident that, in an inquiry, the Authority will conduct a proper and reasoned review of the factors that go into determining the commitments and will have the chance to have a say if asked for their views.

[35] Page 8, Frontier Economics report, Part 1

[36] Another possible interpretation is that the 30% capacity commitment refers to the operator's capacity. That would create still further problems for operators such as Vodacom. We would like to reserve the right to make further comment if this is the Government's intention.

The 30% figure was raised by the operators in the discussions with the Government referred to in section 3 above, but in relation to the collective capacity commitment of the operators, not each individually. To apply a 30% pre-commitment figure on each licensee that acquires spectrum is arbitrary, in that it would defeat the objective of promoting services-based competition, as referred to above, but also that it fails to take into account the range of factors at play in determining an appropriate capacity pre-commitment. It is accordingly irrational.

5.3.3 Commitment to rollout in rural areas first

Paragraph (c) provides that "*universal access and universal service obligations contemplated in section 31A are imposed on the licensee, and such obligations are complied with in rural and under-serviced areas before the assigned spectrum may be used in other areas by the licensee*".

Vodacom accepts that operators that receive an assignment of high demand spectrum should have rural rollout obligations (including milestones, etc). In Part C of this section, we provide further detail of our proposals on how this issue should best be dealt with.

Vodacom doesn't think "outside-in" is the appropriate approach and we have proposed instead rural rollout obligations, which still allow an operator to use the spectrum in urban areas to alleviate serious spectrum shortages.

5.4 Open access and non-exclusive assignment of high demand spectrum is not feasible

Under the new section 31E(2) in the Bill:

> "*The assignment of high demand spectrum is— (a) subject to the principles of open access as contemplated in Chapter 8; and (b) in line with the principle of non-exclusivity, subject to the provisions of the national radio frequency plan*"

In relation to open access high demand spectrum, it is not clear what "*assignment of high demand spectrum … subject to the principles of open access*" is intended to mean. We generally discuss the changes in the Bill to Chapter 8 and open access in section 6 below.

A key policy priority should be to maximise the provision of efficient digital services to consumers in South Africa. Given the limited availability of harmonised spectrum, it is important that this is used as efficiently as possible, and that inefficient use or underuse is avoided.

In this section 5.4, we focus on the non-exclusive assignment of high demand spectrum. Until there are global standards that enable interference management and spectrum efficient optimisation under conditions of non-exclusive assignment, and widespread adoption of the technology, non-exclusive assignment of spectrum will create technical problems for any licensee, including the WOAN. This is apart from the debilitating effect it will have on investment incentives on the part of any licensee.

5.4.1 Discussion of inefficient spectrum use and sharing opportunities

For some spectrum applications, the assigned spectrum band is used very inefficiently. A good example is the current analogue terrestrial television network, where transmitters avoid using any of the frequencies used on any neighbour transmitters, meaning that in any location, only about 20% of total spectrum is in active use.

Techniques have been explored to see whether this wasted capacity could somehow be reused, to increase efficiency. TV White Space has been proposed in some countries, although there has yet to be any scalable commercial exploitation.

With mobile networks operating 3G or 4G technology, the case is the complete opposite to TVWS.

The key to effective sharing is that there is spare capacity of some sort in the primary radio configuration and that any sharing application has a demand characteristic that is complementary to the primary use (in terms of the demand occurring in different times or different locations to the primary use, and therefore being able to exploit unused capacity).

Given the inherent scarcity (and generally high cost) of mobile spectrum, international mobile standards bodies have worked hard to ensure that mobile network operators are able to achieve the maximum possible utility from every MHz of spectrum they have been assigned. This includes using complex "code division multiple access" techniques that allow the same frequency to be used fully in all adjacent mobile cells, without interference. A well-designed modern mobile network will therefore achieve very high use of its assigned spectrum, and the opportunity to realise any further gains through sharing would be very limited.

Furthermore, in considering the nature of demand from any potential other mobile network sharer, it is extremely likely that the demand would be virtually coincident with the primary use. In other words, there would be no spare capacity in the locations or times of day where there may be potential additional demand. There may be scope for sharing in remote locations, or between say 01:00 and 05:00 every morning, but there will be very little complementary demand on these occasions, and certainly no scarcity of spectrum.

In markets where there are examples of sharing by mobile operators, regulators are focusing on bands with low occupancy by primary occupants, such as isolated radar installations in the 2.3GHz band, where sharing allows mobile operators to access the band for over 90% of the landmass.

5.4.2 Why spectrum assignment is exclusive

Spectrum should be assigned on an exclusive basis to avoid interference, achieve effective use and allow for proper network planning and setup of device and radio equipment.

Mobile networks are designed to be run efficiently where one operator is operating one frequency band and manages inter-site interference. When one operator is running one network, they can optimise the co-channel interference between adjacent cells and hence deliver the maximum efficiency.

5.4.3 OFCOM approach to spectrum sharing and non-exclusivity

Should the Government nevertheless decide to proceed with implementation of non-exclusive assignment of high demand spectrum, Vodacom considers that this is a complex set of issues that requires a detailed consultation process, with the objective of determining appropriate guidelines and assurances for the current primary users of spectrum to avoid the adverse impacts of harmful interference.

We draw the Government's attention to the highly consultative OFCOM approach and draw parallel lessons in relation to its process, objectives, and assessment of the opportunities in terms of costs and benefits.

A key objective for OFCOM is[37]:

[37] Section 4.17 of OFCOM Spectrum Management Strategy – April 2014, page 31

"…to increase the potential future value of spectrum use through its work in support of international harmonisation and favouring non-mandatory, non-exclusive harmonisation so as to enable industry-led changes whilst reducing the risks of regulatory failure that could arise from mandatory, exclusive harmonisation".

OFCOM has sought to develop and consult on the conditions of use of non-exclusive spectrum by nationally harmonised multiple mobile licensees to manage the risk of harmful interference, while introducing technology and usage restrictions that are proportionate and necessary for spectrum management reasons, to manage the risk of harmful interference and to ensure compliance with its statutory duties and international obligations.

It is important to distinguish clearly between two aspects of OFCOM policy. First is a desire to explore and facilitate the benefits of sharing in bands, and under special circumstances, where this could lead to benefits and has no adverse implications. Second is a general long-standing principle for OFCOM that all issued licences are strictly non-exclusive, with OFCOM reserving the right in extreme circumstances to issue additional licences without requiring an existing licence to be revoked, with associated protracted legal implications.

OFCOM works hard to hold the joint objectives of investment, innovation and competition in careful balance, and the acceptability of this arrangement for investors hinges on a strongly guarded level of trust that OFCOM would only enforce the non-exclusivity clause in extreme circumstances.

Under the OFCOM model addressing multiple mobile licensees, the regulator reserves the right to introduce additional licensing into the same band, however in reality there is no plan to actually do this. This should be contrasted with OFCOM's programme for considering sharing mechanisms, which is more applicable to TVWS, satellite and military installations. We discuss this further in section 5.4.4 below.

In October 2013, OFCOM first published its Spectrum Management "Consultation" document.[38] In April 2014, OFCOM published its "Spectrum Management Strategy"[39] highlighting its intention to consider new opportunities and tools for spectrum sharing to extend sharing to meet growing and competing demand for spectrum from stakeholders. In July 2015, OFCOM published a "Consultation Document"[40] setting out their thinking about a new framework for assessing opportunities for shared access to spectrum. In April 2016, OFCOM published a "Framework for Spectrum Sharing"[41] considering the responses to the consultation document and set out its decision to apply the sharing framework to future spectrum authorisation decisions to assess spectrum sharing opportunities. The framework also specifically reflected on the need to consider carefully the circumstances of each potential opportunity, covering its costs and benefits.

5.4.4 Comparison with spectrum trading and spectrum sharing

Vodacom believes there should be an exclusive assignment of spectrum, but that spectrum should be able to be traded or shared, which we further discuss in section 5.7 below.

Spectrum trading offers a private route for spectrum rights to flow to higher-value users, and gives the freedom to private parties to explore opportunities, and to negotiate spectrum access deals, with limited or no regulatory involvement. Spectrum sharing should be voluntary, driven by market forces.

[38] https://www.ofcom.org.uk/__data/assets/pdf_file/0025/81394/spectrum_management_strategy.pdf
[39] https://www.ofcom.org.uk/__data/assets/pdf_file/0021/71436/statement.pdf
[40] https://www.ofcom.org.uk/__data/assets/pdf_file/0032/79385/spectrum-sharing-framework.pdf
[41] https://www.ofcom.org.uk/__data/assets/pdf_file/0028/68239/statement.pdf

If some portion of spectrum is under-utilised, for example in remote areas, and there is an additional party who has complimentary demand by space and time (as discussed above), then those parties may reach agreement to spectrum share. In that case, spectrum sharing works, provided there is a complementarity of demand.

We also discuss related issues concerning the establishment of a real-time spectrum database in section 5.8.3 below.

5.5 Early return of high demand spectrum

Spectrum licensees have been granted exclusive rights to use the assigned spectrum for a defined period of time. There are limited grounds to suspend or cancel an individual licence under section 14 of the Act or to suspend or cancel a radio licence under section 31(8) of the Act. Except in these instances, the grant of existing licences did not contemplate a licensee losing its rights to the spectrum before the end of the term.

Under the changes proposed in the Bill, a licensee may lose its existing rights to its high demand spectrum in two different ways.

The first is if the Authority declines to renew a spectrum licence. Section 31(3A)(a) provides that "*Radio frequency spectrum licences are renewable annually, despite the duration of the licence*."

Implicitly, this means that the licences may not be renewed by the Authority. There are no limitations on matters the Authority must consider when renewing (or not) spectrum licences, except they must consider compliance with USO obligations and a reporting obligation.

The second is if the Authority makes recommendations to the Minister on terms on which assigned high demand spectrum must be returned to the Authority.

Section 31E(6) provides as follows:

> *"The Authority must, within 24 months of the commencement of the Electronic Communications Amendment Act, … conduct an inquiry as contemplated in section 4B of the ICASA Act and make recommendations to the Minister on the terms and conditions, as well as the time frame, under which the exclusively/individually assigned high demand spectrum, excluding the high demand spectrum assigned to the Wireless Open Access Network, must be returned to the Authority, taking into account policy, market developments and extent of availability of open access networks.".*

The White Paper is unequivocal when it comes to the return of spectrum; this "*currently exclusively/individually assigned high demand spectrum will be returned…*".[42] The timing is determined by the Authority, but the outcome is clear.

There should be no power for the Authority to either decline to renew a spectrum licence before expiry of its term or require its return to the Authority, except in the limited situations already set out in the Act.

The policy reason behind a requirement to return high demand spectrum is unclear. There is substantial unassigned high value spectrum and a portion of that unassigned spectrum will be assigned to the WOAN, which will be sufficient spectrum for the WOAN to carry on its business if the sufficiency principle that we describe in section 5.11.1 is followed. In that context, any requirement for licensees to return already assigned high demand spectrum is unnecessary.

[42] White Paper, section 9.2.5.4, page 91

Early return of high demand should only be considered in very limited circumstances. It should be confined to where early return is a proportionate action and as an extreme sanction in response to a repeated gross failure to meet licence obligations or payment of licence fees. Any discussion of return of spectrum should also take account of the impact on current users and services if services were to be discontinued. In general, where there is a justified basis to consider premature spectrum return, all other less disruptive means should first be exhausted.

We discuss the constitutionality of this inroad into Vodacom's property rights in section 8.3 below.

5.6 National Radio Frequency Plan should be developed by the Authority

We have referred in section 5.2 to the need to preserve the Authority's independence in the assignment of radio spectrum and that the separation of authority between the Minister and the Authority in the current Act should be preserved. The Minister should maintain his/her responsibilities to represent South Africa in international fora and to approve the national radio frequency plan developed by the Authority, but not go further into the development of the National Radio Frequency Plan. We discuss the constitutionality of this undermining of the Regulator's independence in section 8.2 below.

5.6.1 Development of the National Radio Frequency Plan

Under the new section 29A(d) in the Bill, "*... The Minister of Telecommunications and Postal Services is responsible for— ... the development and approval of the National Radio Frequency Plan...*"

Under the current Act, the Authority is responsible for the development of the plan, with a right for the Minister to approve the Authority's plan under section 34(2). Under the new Bill, the Authority will be required simply to implement the National Radio Frequency Plan developed and approved by the Minister.

To preserve the independence of the Authority and avoid interference with radio spectrum matters, the power to develop the National Radio Frequency Plan should be returned to the Authority.

5.6.2 Divergence from WRC decisions

Under the new section 34(6)(g), the National Radio Frequency Plan, determined by the Minister if section 29A(d) remains in the Bill, shall:

> *"(g) determine the service allocation to be made in the national table of frequency allocations in cases where there are competing services in a particular radio frequency spectrum band, and where the decisions of an ITU World Radiocommunication Conference create divergent interests nationally."*

This ability to deviate from WRC decisions could cause other unintended consequences of deviating from the positions taken by the SADC and the ATU, with challenges for cross border interference and ultimately the regional harmonisation of spectrum bands. These should be taken into account.

5.7 Spectrum trading, sharing and re-farming should be permitted

5.7.1 Spectrum trading

Under the new section 31B(e)(4), "*No high demand spectrum may be traded*".

High demand spectrum should be capable of being traded.

Spectrum trading enables the most efficient use of spectrum to provide the highest performance to end-users at the most affordable cost. Examples where spectrum trading is used include trading of sub 1 GHz "coverage" bands (e.g. 900 MHz) in exchange for "high capacity" bands (e.g. 2.3GHz, 3.5GHz) and contiguous spectrum assignments to facilitate cost effective carrier aggregation.

If there are coverage and other commitments contained in spectrum licences granted for the assignment of high demand spectrum, then the Authority can ensure that those commitments transfer to the acquirer of that spectrum. There is no reason to treat high demand spectrum any differently to non-high demand spectrum in this regard.

Where an authority may have a concern that spectrum trading may lead to an inappropriate degree of concentration of spectrum in the hands of one or more licensees, it may use spectrum caps to set expectations to the market and act as a back-stop in the event of excessive trading.

Otherwise, licensees should not be restricted from spectrum trading.

5.7.2 Spectrum sharing

Under the new section 31C, "*Radio frequency spectrum licensees may share licenced spectrum subject to approval from the Authority*".

Further, the Authority may not approve spectrum sharing if it will "*(a) have a negative impact on competition; (b) amount to spectrum trading; or (c) compromise emergency services and other services that meet public interest goals*".

Vodacom supports spectrum sharing in principle where it is both technically and commercially feasible. Spectrum sharing should be permitted on a mutually agreed basis that promotes market competition and efficient use of scarce spectrum resources. It should not be restricted in the manner set out in section 31C.

5.7.3 Spectrum re-farming

Under the new section 31D, "*Radio frequency spectrum licensees may refarm licenced spectrum subject to approval from the Authority*".

While mobile operators seek to introduce the latest and most efficient mobile radio technologies such as 4G, they also have a responsibility to support a wide range of legacy customer devices, including 2G and 3G. Optimising the services that can be delivered to all users requires constant rebalancing of network capacity between all supported radio technologies, in line with the changing mix of handset types used by customers.

Consistent with the principle of technology neutral licensing, there are no restrictions on spectrum refarming in the current regulatory environment. It has become an almost daily necessity for mobile operators trying to manage network capacity requirements and becomes even more complex where there is a critical shortage of high demand spectrum.

To impose a system of approvals from the Authority for such *ad hoc* activity is onerous and impractical in these circumstances, for no apparent benefit. It will create barriers to introducing the most spectrum efficient technology available and delays caused by these barriers will impact on the quality of experience for customers.

Vodacom generally considers that operators, and the WOAN, should be free to use the spectrum assigned to them for any combination of mobile radio technology standards that it considers will maximise its efficient use. Refarming is an example of what operators have to do all the time.

5.8 Other changes to Chapter 5

5.8.1 Mandated universal access and universal service obligations

Under the new section 31A, "*(1) In addition to any universal access and universal service obligations contemplated in section 8, the Authority must impose universal access and universal service obligations on existing and new radio frequency spectrum licensees*".

Under subsection (5), "*Universal access and universal service obligations should be specific, attainable and measurable and compliance should be evaluated by the Authority on an annual basis, as a condition of renewal of the radio frequency spectrum licence*".

It is unreasonable to impose universal service obligations, after the fact, on an existing spectrum licensee. A spectrum licensee agrees to acquire a spectrum licence on the terms and conditions of that licence. It may be completely acceptable that "specific, attainable and measurable" obligations are included in the spectrum licence, but the spectrum licensee takes those obligations into account when they decide whether to acquire the licence. In addition to being unreasonable, it is also unconstitutional: we discuss the constitutionality of this infringement of Vodacom's property rights in section 8.3 below.

The qualifiers of "specific, attainable and measurable" don't really help for existing licensees. They can still impose obligations which will require potentially significant expenditure or significant risks to meet. There may be no, or marginal, business case for deployment and there's no assurance of return. This creates great uncertainty, whether a licensee will be subject to new obligations and on what terms.

It is different for new licensees, who can factor in universal service obligations that may be included in the licence at the time they acquire it. The provisions of section 31A only work in the context of new radio frequency spectrum licences where the universal service obligation is in the licence.

We note in this regard the approach taken in France, where the French government wanted to see the benefit of improved coverage in the current Presidential term, yet licences generally run beyond that date. In that instance, the solution was to reach agreement with the mobile operators early to (a) a renewal of future expiring licences, free of charge, in return for (b) commitments to invest collectively €3-4bn in an additional 5,000 towers, both of which will be reflected in modified current licences[43]. This agreement is widely accepted as a "win-win" outcome and did not involve imposing new coverage obligations on the licensees.

5.8.2 Use it or lose it

Section 31(8) is amended in the Bill to allow the Authority to withdraw any spectrum license where the licensee "*... fails to use the assigned radio frequency spectrum for a period of one year, referred to as the 'use it or lose it' principle*".

As we have emphasised throughout this submission, the efficient use of all available mobile spectrum should be a primary policy objective. There are two main options: market-based assignment (which involve a combination of auction fees and annual fees) or a "use it or lose it" or "use it or lease it"

[43] See, in French, https://www.lesechos.fr/tech-medias/hightech/0301162343643-sebastien-soriano-nous-navons-pas-fait-de-cadeau-aux-operateurs-2145616.php#xtor=EPR-12-%5Btech_medias%5D-20180117-%5BProv_%5D-2026167

obligation. If the market-based approach is exercised correctly, a spectrum licence holder that is not making efficient use of the spectrum will have a financial incentive to return or trade the spectrum (and save annual fees and/or recover some of its auction fees from the sale). In this scenario, a "use it or lose it" or "lose it or lease it" obligation complicates an otherwise commercial decision. In the absence of a market-based approach (auction fees and/or annual fees), there may be a need to ensure assigned spectrum does not lie idle, and therefore a "use it or lose it" or "lose it or lease it" condition should be considered.

We prefer "use it or lease it" as an alternative to "use it or lose it". This places an obligation on a licensee, at the appropriate trigger point, to lease the unused spectrum to other licensees, on a commercial basis. This allows the licensee that owns the "unused" spectrum to earn some revenue by leasing the spectrum. It is preferable to "losing it" because this does not allow any return, when that licensee may have invested significant amounts in acquiring the spectrum.

Vodacom doesn't believe SMMEs or new entrants, which would include the WOAN, should be exempted from this requirement under section 31(8A)(b). The WOAN is the most prominent policy initiative and we expect it to be motivated to get started with providing wholesale services using the high demand spectrum that has been assigned to it. Should a use it or lose it or use it or lease it principle be incorporated into the Act despite its undesirability, then it should apply to the WOAN: if in fact the WOAN is not using the high demand spectrum assigned to it (especially on a privileged and apparently unique basis), then that would be damaging for the overall efficiency of the mobile sector and it should be required to lease or share that spectrum in favour of other operators who are willing to make a commitment to put it to use.

Indeed, in a scenario where mobile operators pay an annual licence fee for licences and the WOAN does not pay for spectrum, it could even be argued that the WOAN should be subject to a "use it or lose it" or "use it or lease it" obligation and the mobile operators should not.

There would in any event need to be clarity on what constitutes the "use" of spectrum. For example, putting up one base station every year could mean an operator has used the spectrum. Vodacom suggests that, when the Authority issues a spectrum licence, it clarifies as part of the ITA process what constitutes "use" for the purposes of that spectrum. This should apply to new spectrum that is assigned, but not applied retrospectively, as that would create uncertainty for existing spectrum licensees.

5.8.3 Real-time spectrum database

Under the new section 34B(3):

> *"The Authority will be required to develop a database with real-time updates including that such database enables real-time updating by the corresponding databases of sector-specific agencies."*

The database referred to is contemplated by the new section 30(2)(g), which requires the Authority to:

> *"...maintain a high quality and appropriately accessible real-time database of radio frequency spectrum assignments, excluding assignments to security services, that includes real-time updates from sector-specific agency databases as contemplated in section 34B"*

The purpose of this database was explained in the White Paper[44]:

[44] White Paper, page 93

"Sharing of sector-specific spectrum and spectrum used for services that meet clearly defined public interest goals may be approved where practically possible and provided that such sharing does not compromise the functions for which the spectrum was intended."

The reference to "real-time" is not practical for mobile operator radio frequency spectrum updates.

Spectrum databases are beginning to be considered in some highly developed markets in the world, primarily as a way to facilitate access by multiple users to spectrum that is highly underused – i.e. where there is a lot of white space. UHF TV broadcasting bands are the most common example[45]. As discussed above, TV broadcast networks typically use only one quarter of the total spectrum in any one locality. Other users with ad-hoc needs (such as programme makers and special events using wireless microphones) are able to use particular frequencies in particular locations at particular times, under the management of a spectrum database. In contrast, where spectrum is assigned to mobile networks (and particularly where it has been auctioned, and there is an opportunity cost to underuse), there is typically no spare capacity in areas of competing demand, and no practical purpose or benefit to introducing spectrum databases.

It is not clear how sharing of "sector specific" spectrum will be managed, i.e. real-time assignment, configuration and re-assignment of spectrum resources and interference management. For example, mobile networks have static network configurations for maintaining spectral efficiencies, reducing interference between neighbouring sites and cells, and having standardised and/or optimised site-specific parameters and features, which in several cases are linked specifically to an individual site and/or cell's frequency assignment.

We, therefore, do not consider it practical to dynamically assign and manage spectrum to other licensees on a real-time basis, given these dedicated network configurations.

Further, the re-configuration of cellular network parameters may require the base station, radio or traffic channel to be reset for new network parameters and/frequencies to take effect. This could take a few seconds to several minutes depending on the extent of the changes, which can be either at a traffic channel, cell, site, base station controller (BSC) or radio network controller (RNC) level. The re-configuration will also have a negative impact on existing customers utilising the network resources at that point in time, either though dropped calls or interrupted data services.

Consequently, apart from the fact that real-time database updating and auto-reconfiguration of cellular frequency assignments is currently not supported between mobile operators and other third-party networks, the resulting network outages and QoS complexities in implementing such a solution would be detrimental to the end user experience.

5.8.4 Spectrum fees

In the new section 4(1A), *"...[a]ny regulations prescribed by the Authority on radio frequency spectrum fees must be in accordance with any policy or policy directions issued by the Minister..."*

The Minister should have a role in setting the policy objectives for spectrum fees, which should primarily be to ensure efficient assignment and use, and recovery of efficiently incurred spectrum administration costs. The Authority should have responsibility to set the specific charging mechanisms.

[45] We note that the Authority has produced draft regulations for the use of TVWS (Notice 283 of 2017). Among other things, these draft regulations contemplate establishing standard terms and conditions applicable to the operation of geo-location spectrum databases (GLSDs) in the frequency band 470 MHz to 694 MHz, which is obviously outside of the unassigned high demand spectrum bands. The draft regulations also include guidelines and specifications related to TVWS devices, authorisations, interference, operational parameters and so on.

5.9 Impact of these changes

5.9.1 The conditions and commitments on operators should not be hard-wired into the legislation

If the functional condition is retained in the Bill, then this will result in a chilling effect on investment. As Frontier Economics explains it in their attached report:

> *"Through this period* [i.e., until the WOAN is functional], *... the Bill proposals will have a significant chilling effect on MNOs' incentives to invest, leading to a delay in the deployment of new mobile technologies, until a ... WOAN is fully functional"*[46].

5.9.2 Why spectrum is not assigned on a non-exclusive basis

To introduce a non-exclusivity obligation into mobile cellular licences and to permit the shared use of the one frequency assignment by multiple parties in any give location would prevent mobile operators from offering top quality service and customer experience. Network operators can only ensure high quality, efficient and high capacity networks, and a reliable customer service experience, if they are permitted to make full reuse of assigned frequencies on every radio site installation and manage the interference between neighbouring sites.

Mandated spectrum sharing for well-designed mobile networks will yield no efficiency gains or benefits. On the contrary, any attempt to introduce multi-party sharing of a harmonised mobile band is more likely to lead to unplanned network interference.

Even for a wholesale-only entity such as the WOAN, any non-exclusive assignment of high demand spectrum will cause the same interference problems if other parties are able to transmit on the spectrum assigned to the WOAN.

5.9.3 Early return of high demand spectrum

The potential early return of high demand spectrum by operators will mean that operators will stop investing in assets when they know they may not be able to use those assets for their full life if they have to return their spectrum. If early return actually happens, then they will be unlikely to be able to continue to carry on business as a mobile operator. Operators will not be able to provide the same coverage, quality and cost of services using spectrum that is not high demand spectrum.

As Frontier Economics points out in their attached report, the potential early return of spectrum:

> "*...will dis-incentivise [operators] from making significant investments in their networks , particularly given that the terms and conditions and timeframe for the return of such spectrum will not be known until the ICASA study is complete. This would reduce the incentive of MNOs to compete with a WOAN possessing significant amounts of HD spectrum."*[47].

Professor Cave also comments on this aspect of the Bill:

> *"This falls into the category of a retrospective regulatory change, which in this case carries a particularly high risk of stranding an operator's collateral assets and chilling investment incentives in the future.*

[46] Page 8, Frontier Economics report, Part 1
[47] Page 25, Frontier Economics report, Part 1

The Draft Bill does not specify to what degree the withdrawal would be compensated. But since the operators have made network investment decisions which rely upon licensed access to spectrum, compensating the operators' full economic losses (even after mitigation by the sale of stranded assets) might be large.

If compensation were not paid, then the potential effect on investors' willingness to commit funds would be considerable"[48].

5.9.4 Spectrum trading, sharing and re-farming

If operators cannot trade, or share or re-farm, spectrum, this would represent a foregone opportunity to use the spectrum efficiently and obtain the benefits of the best technology available.

Part C Proposals

5.10 Achievement of the Government's objectives through the ITA process

The current Act contains the tools, and processes already underway, to rapidly achieve the Government's objectives, including for coverage, affordability and increasing services-based competition, in a targeted and proportionate way. The changes proposed in the Bill are not required and, as shown in Part B above, will give rise to adverse impacts.

Section 31(3) of the Act provides that "*[t]he Authority may, taking into account the objects of the Act, prescribe procedures and criteria for awarding radio frequency spectrum licences for competing applications or instances where there is insufficient spectrum available to accommodate demand*". Regulations 6 and 7 of the Radio Frequency Spectrum Regulations 2015[49] set out a process for awarding licences for such high demand spectrum, including publication of an ITA.

The Authority issued an ITA in July 2016, contemplating the assignment of four lots of high demand IMT spectrum to mobile operators through a well-designed auction process.

The July 2016 ITA, although subject to legal proceedings, would have delivered commitments from licensees on population coverage and minimum speeds, as well as the introduction of further services-based competition through a requirement to host MVNOs. The July 2016 ITA contemplated a further lot of IMT spectrum being made available for a WOAN.

It could be argued that, had the July 2016 ITA process been allowed to continue, the industry would by now have achieved certainty of assignment of the high demand spectrum, parties interested in participating in the WOAN would have had visibility of the spectrum available and new services-based competition would have been enabled.

This should be resolved immediately to prevent further consumer detriment caused by any further delay. The Authority should kick-start the ITA process straight away, leading to the assignment of high demand spectrum to the competitive WOAN and to operators.

The Government has two options to achieve this under the existing Act, without any further changes to the legislation. First, it could support the Authority in its efforts to continue with the July 2016 ITA. Second, the Authority could commence a new ITA process.

[48] Page 8, Professor Cave report
[49] See also section 31(3)(a) of the Act

Either way, Vodacom expects that the Authority will need to conduct a rigorous and transparent inquiry of the key requirements for assignment of the high demand spectrum to the competitive WOAN and the operators, most likely under section 4B of the ICASA Act 2000[50].

If the Authority continues with the July 2016 ITA, then the inquiry would focus on the competitive WOAN's coverage commitments and the WOAN capacity pre-commitments by the operators. The Authority may also re-consider the reserve prices and the method of spectrum assignment. If the Authority commences a new ITA process, then the scope of inquiry would be wider.

If the Authority is to continue with the July 2016 ITA, the Government should withdraw the Minister's legal challenge to the ITA and the Authority's intention to proceed with the ITA should be supported in the litigation.

In this Part C, we discuss how we propose this inquiry should be conducted and the assignment of the high demand spectrum. Whether the July 2016 ITA continues or a new ITA process begins, we propose that this inquiry and assignment start straight away.

If the Authority is to continue with the July 2016 ITA, then the key issues for the Authority to determine in its inquiry are the competitive WOAN's coverage commitments and the WOAN capacity pre-commitments, as well as the method of assignment.

If the Authority is to commence a new ITA process, then the scope of its inquiry will be wider, with the key issues for the Authority to determine being the spectrum to be assigned to the competitive WOAN and the operators, the competitive WOAN's coverage commitments and the WOAN capacity pre-commitments and rollout commitments to be given by operators that wish to acquire high demand spectrum, as well as the method of assignment.

The inquiry should be completed within a tight timeframe.

It will be essential for investors in the competitive WOAN to know these key parameters in advance of finalising arrangements for the establishment of the WOAN. It is also necessary that this inquiry is concluded promptly to provide certainty for other operators.

The Authority should then proceed to assign the high demand spectrum to the competitive WOAN and operators, based on the results of this spectrum inquiry. Timing of deployment is related to the availability of the spectrum.

The 2.6GHz spectrum is available for deployment now and should be promptly assigned, whereas the 700MHz and 800MHz spectrum is currently in the migration process. Nevertheless, there needs to be an "end-stop" date for deployment of this spectrum which Vodacom proposes should be January 2020.

This will allow the competitive WOAN, and all operators, to put in place the necessary technical, infrastructure and commercial arrangements to make use of this spectrum by that date.

The competitive WOAN should be established as soon as possible and should have made substantial progress to be in a position to commence business by January 2020.

5.11 The Authority's spectrum inquiry: assignment of sufficient high demand spectrum

[50] Section 4B provides for a process which sets out the Authority's obligations with regard to the purpose of an inquiry, the procedure for consultation and the publication of findings within a specific period of time

In its spectrum inquiry, if the Authority commences a new ITA process, then the Authority needs to consider the high demand spectrum to be assigned to the competitive WOAN and to the operators. If the July 2016 ITA continues, then there will be no need to consider this step, as the Authority has already determined the spectrum to be assigned to a WOAN (which fits our criteria of a competitive WOAN). However, if a new ITA process commences then Vodacom proposes that the Authority should apply the sufficiency principle that we discuss below.

5.11.1 The sufficiency principle

The competitive WOAN, and the operators, should be assigned sufficient high demand spectrum in the 700MHz, 800MHz and 2.6GHz bands to allow sustainable investment, market participation and innovation in the provision of LTE-based services, while at the same time ensuring comparable unit costs.

To express this in the form of a principle (the **sufficiency principle**), Vodacom believes that the competitive WOAN, or an operator, should be assigned sufficient high demand spectrum to compete with other operators in providing national LTE coverage and capacity over a reasonable period (roughly between seven and ten years) and at a cost, if it deployed its network efficiently, that can compete with other 4G (LTE) providers.

There are two factors when we consider sufficiency.

First, the WOAN, and the operators, should be assigned sufficient unassigned high demand spectrum that will enable them to remain competitive and be equally efficient. They should be able to compete on capacity (download and upload speeds), and the latest technology and type of services (related to the specific spectrum assigned), assuming they deploy latest technology efficiently.

Second, the WOAN, and the operators, should be assigned spectrum that enables them to offer competitive wholesale LTE services at comparable unit costs to the corresponding costs of the average efficient 4G/LTE operator[51]. This assessment should take into account any coverage obligations on the WOAN and the operators in their licences, the benefit to the WOAN of any capacity pre-commitments and any support and incentives given to the WOAN which would reduce its unit costs relative to other licensees.

This way, all operators, including the WOAN, can sell their services into the same market on a competitive basis.

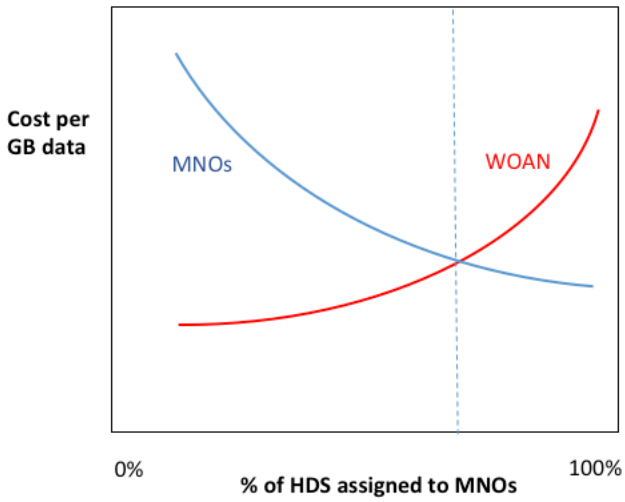
If one party is assigned too much high demand spectrum, then this will provide it with a unit cost advantage that will impact on the other parties' ability to compete. To put it another way, other parties would be deprived of spectrum that would make them more efficient, meaning there would be an opportunity cost.

There is a notional equilibrium point, in assigning new spectrum between the competitive WOAN and the operators, that allows all players to compete profitably and sustainably in the market. If this equilibrium point is achieved, then all players will have broadly comparable unit costs for delivering a similar or equivalent type of service, considering that in the case of the competitive WOAN, it will be likely be LTE/LTE-A services[52].

[51] An average efficient operator is consistent with the approach taken to the setting of average cost oriented mobile termination rates.

[52] In most markets, regulators seek to achieve this equilibrium point by awarding new spectrum through an auction and setting "caps" or "floors" that ensure all players can secure some new spectrum and prevent uneconomic hoarding by any one player.

This is shown in the following graph, which illustrates how the cost per GB of data varies for players depending on the amount of spectrum they are assigned. Increasing the amount of spectrum assigned to one operator helps to reduce costs, but the effect becomes increasingly marginal. At the same time, reducing the amount of spectrum for others has the effect of increasing their costs, but increasingly steeply.



In other words, in moving away from this notional equilibrium point, the benefit of one player getting more spectrum is more than offset by the disadvantage for the other players, resulting in higher average industry costs and higher average prices for customers.

Sufficiency also involves consideration of the relative assignments of lower and higher frequencies within the unassigned high demand spectrum bands. Again, in our view, the allocation of lower and higher frequency high demand spectrum should be relatively symmetrical between the WOAN and the operators to enable them to compete profitably and sustainably in the market.

5.11.2 Spectrum duration

In Vodacom's experience, a minimum 15-year spectrum licence term is required for the competitive WOAN and for operators.

This is because, as Frontier Economics notes in its attached report[53], it is essential that licences for both the competitive WOAN and the operators are of sufficient duration to ensure that they are confident that they will be able to recover the costs of associated network investments, which are likely to have long payback periods. In our experience, 15 years is the normal period internationally for spectrum licences.

[53] Page 38, Frontier Economics report, Part 1

5.12 The Authority's spectrum inquiry: the competitive WOAN's commitments

The Authority needs to consider, in the spectrum inquiry, whether the competitive WOAN should have coverage commitments. This issue was not addressed in the July 2016 ITA. Whichever ITA process is followed, the Authority will need to examine this issue.

In our view, the competitive WOAN need not be subject to extensive coverage commitments, if any at all. The WOAN should have the opportunity to grow however fast it chooses, in its own best commercial interests.

The better approach is for the operators to have the coverage obligations, imposed through licence commitments (see section 5.13.4 below). The competitive WOAN may want to work with operators to assist them to achieve their commitments, but that should be a commercial decision for the WOAN to make. Other operators, that currently use roaming arrangements to enable them to cover rural areas, could find this particularly attractive.

5.13 The Authority's spectrum inquiry: the operators' commitments

The Authority needs to consider, among other things, the commitments required by the operators that receive an assignment of high demand spectrum.

Vodacom notes that, in section 31E(5) in the Bill, the Government envisaged operators that receive an assignment of high demand spectrum giving capacity pre-commitments. In section 5.3.2 above, we objected to these capacity pre-commitments being hard-wired in the legislation, but we can see that they may be imposed on licensees, through the licence terms, by the Authority as part of its inquiry. Capacity pre-commitments were not a feature of the July 2016 ITA, so whether the Authority continues with the July 2016 ITA or commences a new ITA process, the Authority should examine this issue.

When the Authority considers capacity pre-commitments in the competitive WOAN, it should also consider where that capacity is to be acquired and the duration of the commitments. When the Authority considers coverage obligations, it should also consider where that coverage is required.

The spectrum inquiry should also consider commitments that may be made by the operators to provide MVNO access.

5.13.1 WOAN's capacity requirements calculations

Before determining the capacity pre-commitment that may be required from operators, the Authority should form a view of the competitive WOAN's own capacity requirements.

Here are some matters that the Authority may wish to take into account in forming this view:

- the time frame for its estimate of the projected LTE subscribers in South Africa, which may be a period where there are less uncertainties in terms of the assumptions that would have to be made in relation to an all-LTE WOAN. This could be up to 2025 and/or beyond;

- the projections for LTE subscribers in South Africa over the estimated timeframe. The Authority may consider GSMA market data, which is considered to be a common source of information in the telecommunications industry[54];

[54] The GSMA market data already forecasts this up until 2021. For periods beyond this, the Authority may choose to apply additional forecast to the GSMA market data.

- the average LTE data usage per subscriber per month. Since this information is mostly internal to mobile operators, historical information can be requested from the operators. The Authority may apply a forecast to the desired timeframe; and

- the split of LTE data usage and 4G sites across urban, suburban and rural areas should enable a reasonable degree of granularity for the model, as both subscribers' usage patterns and operators' network grids commonly vary significantly depending on the population density of a particular geographic area. Since this information is mostly internal to mobile operators, this can be requested from the operators.

By combining the LTE subscriber projection and LTE data usage per subscriber projection, one can determine the capacity requirement for the WOAN.

5.13.2 WOAN spectrum requirements – sufficiency calculation

The capacity requirements can also then be used to determine the sufficient amount of spectrum the competitive WOAN would require.

Since there is a relationship between capacity required (Mbps), spectrum (MHz) and sites, and since the Authority already determined the WOAN's required capacity in 5.13.1 above, any value can be determined provided at least two are known. The Authority would have developed a view of the WOAN capacity requirements above (which is the demand in Mbps), therefore to calculate the sufficient spectrum for the competitive WOAN, the Authority needs to determine the available site infrastructure.

Since this is mostly internal to mobile operators, the Authority can request a forecasted site plan up until the desired timeframe from the operators. Once the Authority has an estimate of the WOAN capacity requirements and the sites, the sufficient spectrum required for the competitive WOAN can be calculated.

5.13.3 Capacity pre-commitments

Once the Authority has determined the capacity requirements of the competitive WOAN, it may then determine the operators' capacity pre-commitments.

The operators' capacity pre-commitments are likely to relate to the geographic areas to be covered by the competitive WOAN. Although we believe this should be a commercial decision of the WOAN, it will be important to relate the capacity pre-commitments to particular areas.

For example, in the urban areas, there may not be the need for very much capacity pre-commitments to support rollout, as the WOAN will likely attract a number of MVNOs and other entities that wish to target customers located in these areas.

The capacity pre-commitments should be time bound (e.g., 5 years), after which point operators should have the opportunity to freeze the volumes they commit to and where they may reduce their volumes where there is additional offsetting demand from other customers. If any one customer reaches a point of taking, say, 40% or more of the total capacity, or if the WOAN acquires an existing mobile network or is controlled by an existing operator, then other customers should have the option to be relieved of their obligation.

As an alternative for the Authority determining the operators' capacity pre-commitments, the Authority may negotiate any such pre-commitments with operators. This may be appropriate in the period before the competitive WOAN is established. If agreement is not reached, then the pre-commitments may be imposed on the operators through the licence terms.

Further, we also consider that the WOAN should not be constrained in negotiating capacity commitments from any MNO on commercial terms, without being linked to any area. If the WOAN and an operator agree commercial terms for capacity, then the Authority should be prepared to amend any capacity pre-commitments imposed under the licence terms, or any earlier agreement reached with the Authority, to reflect (by reducing or removing the capacity pre-commitments) those commercial arrangements.

5.13.4 Coverage obligations for high demand spectrum licensees

The Authority needs to consider the coverage obligations for licensees that acquire high demand spectrum. If the July 2016 ITA continues, then there will be no need to consider this step, as the Authority has already determined those obligations.

If the Authority reviews this area, then Vodacom believes any obligations on operators to meet roll-out requirements in underserved areas should be a self-contained requirement to rollout in those areas under the terms of their spectrum licence. This obligation should be disconnected from commercial decisions to roll-out in urban areas. While licensees can meet the obligations to rollout in underserved areas, they should be free to choose how to expand coverage in urban areas. Accordingly, Vodacom does not favour an "outside-in" rollout obligation, but we do favour appropriate rollout obligations in underserved areas.

Any additional investment in urban areas will improve overall connectivity and have benefits for customers overall. Arguably, customers from underserved areas often commute into urban areas, and would feel underserved if the services they can enjoy at home are not also available where they work.

In considering obligations to rollout in underserved areas, it is not possible to ignore the fact that there is a lack of affordable, competitive rural backhaul products. The current price of backhaul leased circuits increases the cost of rural services beyond the point that can be afforded by the average customer.

Imposing a rollout obligation in underserved areas without addressing the issues inherent in rural backhaul will make it very challenging to technically and economically rollout in many rural areas. This negates the whole purpose of the commitment, which is to encourage operators to deploy LTE networks in these areas.

5.13.5 MVNO access

MVNOs were included in the July 2016 ITA. MVNOs can be an effective means to allow competition without the need to assign spectrum, which we have indicated as inefficient, as a means to enable access to the market. In the July 2016 ITA, MNOs and MVNOs were able to enter into commercial agreements, which would have satisfied the ITA requirements.

MVNOs benefit from being able to select the best MNO offer. When MNOs are competing for MVNOs business, competition is increased at both the wholesale and retail levels of the value chain.

We anticipate that MVNOs may procure LTE from WOAN (which will likely be its main focus) and services from operators based on 2G and 3G spectrum to provide a full suite of network services. MVNOs may require services via 2G and 3G for some time, considering that it will take a period of years for consumers to convert or replace handsets to LTE handsets.

If the July 2016 ITA is continued, then the Authority may decide to retain the MVNO requirements in that ITA.

5.14 The Authority's spectrum inquiry: method of assignment

Finally, the Authority needs to determine in the spectrum inquiry the method of assignment of the spectrum to the operators. In the July 2016 ITA, an auction was the method of assignment. If a new ITA process begins, then this issue will need to be considered.

Vodacom proposes auctions as the optimal method of assignment, which has been standard practice around the world for the last 20 years. This is because auctions require applicants to bid in response to their actual needs, or their commitment to invest to create the need. The outcome is generally accepted to be reasonably strong alignment of spectrum supply to spectrum demand.

Regulators often use "caps" to give operators some flexibility in the amount of spectrum they seek, while acting as a backstop to prevent hoarding and preventing others with a genuine demand from also securing spectrum. The spectrum packaging proposed in the July 2016 ITA would achieve a similar result (although it gives bidders a bit less flexibility to fine-tune demand and ensure the best possible assignment outcome).

In its attached report, Frontier Economics states that "*[o]ur analysis of the ITA indicates that the proposed auction can be expected to lead to an efficient spectrum allocation, as it seeks to award the spectrum necessary to deliver high speed mobile broadband services in South Africa as quickly as possible*"[55].

However, Vodacom would support other mechanisms provided the mechanism preserves the main advantages and attributes of an auction-based award. The Authority may wish to consider this issue, even if it continues with the July 2016 ITA.

Caps or packages mean that new entrants or smaller operators, that may have limited capability to raise the capital ahead of an auction, still have an opportunity to bid for and secure a minimum amount of additional spectrum. Vodacom would be prepared to accept some reasonable period of time for these new entrants or smaller operators to fully pay the spectrum price.

To prevent opportunistic arbitrage by players entering the award process, it is good practice to ensure the following. First, there are clear licence fee payment and network build milestones, backed by penalties and secure deposits, such that the threat of default has real financial consequences for the licensee. Second, there is a moratorium on spectrum trading or M&A activities by the licensees for three years after the award.

Whatever method is chosen, the assignment should be for an exclusive right to the spectrum with certainty of tenure for the relevant period.

[55] Page 21, Frontier Economics report, Part 1

5.15 Assignment and deployment of high demand spectrum to the licensees

5.15.1 Assignment of high demand spectrum

We consider that the assignment of the 2.6GHz and the 700MHz and 800MHz spectrum, whether by way of auction or another mechanism, should occur at the same time, notwithstanding that actual deployment may take place subsequently at different times. See sections 5.15.2 and 5.15.3 below.

5.15.2 Deployment of the 2.6GHz spectrum

Following completion of its spectrum inquiry, the Authority should proceed with assignment and deployment of the 2.6GHz spectrum to the WOAN and to the operators. The 2.6GHz spectrum is available for deployment and, once the key parameters are determined by the Authority in the spectrum inquiry, should be assigned and able to be deployed. There is a pressing need for deployment of further high capacity spectrum, so the 2.6GHz spectrum can be used for more efficient rollout of mobile broadband networks.

5.15.3 Deployment of the 700MHz and 800MHz spectrum

The 700MHz and 800MHz spectrum should be deployed by the WOAN and operators by not later than January 2020. This should be enough time to allow the competitive WOAN, and all operators, to put in place the necessary technical, infrastructure and commercial arrangements to make use of this spectrum by that date.

This is a "hard-stop" date, but there must be such a date, enforced and committed to by the Government, by which digital migration is completed and the 700MHz and 800MHz spectrum is available for deployment. January 2020 may be an ambitious date, but it is achievable with concentrated effort by those involved. Having a committed date will allow consumers to plan in good time to upgrade television sets or buy set top boxes and for broadcasters to start to play their multi-channel offerings to make use of the additional capacity.

The competitive WOAN should be established as soon as possible and should have made substantial progress in being in a position to commence business by January 2020. If a successful licensee is to provide a capacity pre-commitment as a condition of receiving a spectrum licence, as determined by the Authority in its spectrum inquiry, then this is sufficient to support the viability of the WOAN and enable it to achieve the financing that it requires over that period.

The WOAN itself may prefer it if the deployment of the high demand spectrum to the operators occurs sooner rather than later, as it crystallises the operators' capacity pre-commitments. The WOAN may also prefer it if the operators took the lead in building demand for 4G services, enabling the WOAN to sell its wholesale services into an already primed market.

6. Amendments to Chapter 8

Part A Introduction

6.1 Introduction

The Bill makes several changes to Chapter 8 of the Act. Chapter 8 currently includes an obligation to provide facilities leasing in a fair manner and in accordance with due process. These requirements have been replaced with an obligation to provide open access to a licensee's networks, systems and facilities.

The changes to Chapter 8 overlap with the existing provisions of Chapter 10 of the Act. The Chapter 8 changes blur the clear demarcation between a specific facilities leasing regime, which provided for the sharing of electronic communications facilities where it was reasonable to do so, and the more stringent pro-competitive measures that may be imposed under Chapter 10 on licensees with significant market power to remedy that market failure.

The changes to Chapter 8 in the Bill mean that licensees will need to provide open access to their networks, systems and facilities, whether or not it's reasonable to do so and whether or not they have market power. The balanced regulatory framework in Chapter 10 will be effectively by-passed by these changes to Chapter 8.

The changes also run directly counter to the principles and intentions set out in the White Paper, which required[56] that "*any interventions must be proportionate, consistent and evidence-based and determined through public consultation*", that "*[t]he policy maker and regulator must consider the least intrusive mechanism to achieve the defined public interest goal/s*", that "*[t]he socio-economic and regulatory impacts of any action will be assessed and considered before imposing regulations, rules and/or conditions*" and that "*[t]he policy maker and regulator will act fairly and ensure regulatory parity in defining markets and deciding on interventions*".

The changes to Chapter 8 are not, in our view, "proportionate" or "evidence-based" or involve "assessment of socio-economic and regulatory impacts". The changes are counterintuitive in our view. It is difficult to reconcile the Government's desire for operators to invest, yet at the same time requiring operators to provide cost-based open access to their networks under Chapter 8. The Government also favours services-based competition, but recognises that new investment by operators is needed to meet Government policy objectives. There are opposing forces that create substantial tensions in the wording in the Bill.

Vodacom sees the changes to Chapter 8 as not enhancing the existing Chapters 8 and 10 in achieving the Government's objectives and instead will cause harm.

In this section 6, we start in Part B with describing the changes in the Bill to Chapters 8 and 10 and why they are likely to be disruptive and damaging, rather than achieving any pro-competitive outcomes. We then go on in Part C to propose that the Authority already has the tools available to it to achieve the Government's objectives[57] and that it should use those tools instead of the changes in the Bill to Chapter 8.

Part B Critique of the Bill

Our key critique of the Bill

[56] White Paper, section 2.2

[57] We discussed the tools available to the Authority with respect to spectrum in section 0 above

Our key concerns with the changes to Chapter 8 are that it introduces a new, intrusive and ambiguous regime that applies to licensees, whether or not they have market power, when a robust, best practice process is available under Chapter 10, to the extent there are market power problems.

6.2 Wholesale open access to networks and facilities

The new section 43(1) provides as follows:

> *"(1) All electronic communications network service licensees must provide wholesale open access to their electronic communications networks and facilities, upon request, to any other person licensed in terms of this Act and persons providing services pursuant to a licence exemption in accordance with the terms and conditions of a wholesale open access agreement entered into between the parties, in accordance with the general open access principles."*

6.2.1 Electronic communications networks and facilities

Section 43(1) previously only applied to "electronic communications facilities". The definition of "electronic communications networks" is unchanged by the Bill. It means "*any system of electronic communications facilities (excluding subscriber equipment)*" and includes specific systems listed in the definition. Accordingly, it may be argued, depending on the context, that a mobile operator's entire network is now subject to this clause.

This moves beyond the existing Chapter 8, which is confined to passive infrastructure. Electronic communications facilities are well defined in the Act and are easy to identify and understand. Networks, comprising electronic systems, are highly complex in comparison.

6.2.2 Wholesale open access

Section 43(1) previously required a licensee to "lease" electronic communications facilities. Now the requirement under the Bill is that they "*provide wholesale open access*". Wholesale open access is not defined in the Bill[58].

The concept of "leasing" is readily understandable, but it is unclear what "provide wholesale open access" is intended to mean. This tends to be a term used as a principle at a high level in discussions on regulatory topics, but it has no accepted meaning.

It is inherently vague and uncertain and without context. Our main concern is that it will require us, as a licensee, to expose and allow other parties to use any aspect of our network, which as we mention above is a highly complex set of electronic systems. And we would need to do this regardless of the practical, financial or competitive consequences for us. It would also need to be done on a "cost-based" basis, not on commercial terms.

6.2.3 General open access principles

These principles are defined in the Bill as follows: *""general open access principles" means providing wholesale open access to electronic communications networks on terms that are effective, transparent and non-discriminatory".* Although these are the most general of the obligations imposed on licensees under the changes to Chapter 8, these are still invasive obligations.

[58] Whilst a definition for 'general open access principles' has been added to the Bill, it does not provide clarity as to the meaning of 'wholesale open access'.

The reference to "effective" may mean that wholesale open access "works", but because it is not clear what "providing wholesale open access" might mean in relation to the entirety of our mobile network, it causes us concern.

"Transparency" obligations are problematic when extending to all aspects of one's network, as it would entail revealing commercially sensitive or confidential information. In those circumstances, transparency can cause substantial legal and competitive implications and, potentially, exposure to liability when it relates to third party confidential information.

Non-discrimination is already applied in relation to the current Chapter 8, but that concept, although vague, can be applied readily in the context of passive infrastructure. When applied to a complex network, with millions of internal interactions occurring daily, it cannot have any clear meaning.

We are left with a concerning set of uncertain principles, applied to an uncertain concept of wholesale open access, and this is disconcerting to us. It applies to Vodacom, as a licensee, and to every other licensee in South Africa.

6.3 No requirement for reasonableness

Sections 43(1) and (4) of the Act currently require that facilities leasing requests be reasonable (technically and economically feasible). This requirement has been deleted in the Bill.

The Memorandum shines some light on why this decision was made: "*Subsections 43(2) to (4) are deleted since the White Paper does not mention the reasonability test, though it provides in general that open access should be provided on reasonable terms. If reasonability is in dispute that will be defined and decided by the Authority, without diluting the open access principles, to avoid abuse of the reasonability test by incumbents*". But there is no ability for the Authority to consider reasonableness under the changes made to the Bill. The amendment therefore contradicts its stated premise.

It is irrational to remove the requirements for the Authority to determine reasonableness, feasibility and efficient use of networks and facilities. Otherwise, access requests could be unreasonable, they could be technically or economically unfeasible and they could promote the inefficient use of electronic communications networks and facilities, but will still have to be complied with by licensees[59].

In the attached report, Frontier Economics states:

> *"... the potential harm is exacerbated by the fact that the obligation is drafted in very broad terms. In particular, it appears to apply to all requests for access, regardless of whether these requests are reasonable, and removes the ability of operators to deny access where it is not technically or economically viable. This leaves operators open to the possibility of being forced to accommodate requests that are unreasonable, giving rise to inefficient investment. For example, an access seeker may request access where there is currently no capacity available. In this case, the operator would need to incur significant fixed costs to add capacity in order to accommodate the request. By removing the reasonableness requirement, the Bill creates the risk that the operator would have to fully bear these costs, whilst the incremental demand (and hence revenues) it receives from the access seeker may not be sufficient to justify the investment"*[60].

[59] While we are mainly concerned with the removal of the reasonableness requirement in Chapter 8, we have similar concerns in relation to the new section 20H(3), where *"(3) [a]n owner of a high site may not refuse access to an electronic communications network service licensee for the installation of electronic communications networks and facilities that promote broadband*". At least we would consider that the same reasonableness requirement should apply in this instance.

[60] Page 25, Frontier Economics report, Part 2

They further state:

> *"Removing a reasonableness clause also goes against regulatory best practice. For example, section 87(4) of the UK Communications Act sets out that the regulator (Ofcom) must take into account technical and economic viability when imposing access obligations. Similarly, paragraph 19 of the EU Access Directive sets out that requests may be refused "on the basis of objective criteria such as technical feasibility or the need to maintain network integrity"*[61].

6.4 Introduction of the deemed entity regime

In comparison to the best practice processes in the existing Act, the changes in the Bill introducing the deemed entity regime in Chapter 8 are inappropriate and inconsistent with international best practice.

The ethos in the National Development Plan was balanced, between incentivising sharing and encouraging investment[62]:

> *"Carefully applied open-access policies can incentivise sharing and common use of certain layers of the network, without discouraging private long-term investment"*

The wording of the Bill loses this balance. The deemed entity regime does not take into account that open access will discourage private long-term investment.

6.5 Vague and impractical definition of deemed entities

A new section 44(3A) has been added that instructs the Authority how to determine a deemed entity:

> "*(3A) For purposes of the determination of deemed entities as contemplated in subsection (3), the Authority must—*
>
> *(a) following the definition of markets as contemplated in section 67(3A), determine in respect of infrastructure markets, which electronic communications network service licensee, if any, has significant market power in such market or has an electronic communications network that constitutes more than twenty-five percent of the total electronic communication infrastructure in such market, following which such electronic communications network service licensee is regarded as a deemed entity;*
>
> (b) *determine which electronic communications network service licensee, if any, controls an essential facility or a scarce resource such as exclusively assigned radio frequency spectrum, following which such electronic communications network service licensee is regarded as a deemed entity*."

Open access principles, once properly refined and defined and confined to appropriate facilities, should only be applied to operators with significant market power in markets which are proven to fail, following a proper review process. This definition goes beyond operators with significant market power.

The infrastructure thresholds in the deemed entity definition are inconsistent with international best practice and competition law principles. In its attached report, Frontier Economics explains the process for a best practice approach to imposing *ex ante* regulatory obligations, following approaches commonly accepted in the EC and comparable middle-income countries[63].

[61] Page 25, Frontier Economics report, Part 2
[62] National Development Plan, page 172
[63] Annex A, Frontier Economics report, Part 2

6.5.1 Significant market power and control of infrastructure

The first half of section 44(3A)(a) is connected with recognised competition law principles. It requires the Authority, having conducted a market definition exercise, to determine whether any ECNS licensee has significant market power in an "infrastructure market".

It is unclear to us what an "infrastructure market" is. The intention may be to refer to a wholesale market for infrastructure access. Market definition requires a consideration of supply and demand side substitutes and there may, or may not, in fact be such a thing as an infrastructure market. The Authority will be in the difficult position of creating a market for the purposes of this definition, where it may consider this market does not exist.

There is no requirement for the Authority to follow accepted competition law principles in determining whether a licensee has significant market power under section 44(3A). And there is no requirement that there be ineffective competition in the market before imposing pro-competitive measures.

If this section is to be retained, Vodacom proposes that the Authority expressly be required to comply with section 67(4) and (5) of the Act in determining whether there is effective competition in those relevant markets and market segments and whether a licensee has significant market power for the purposes of section 44(3A) and expressly consider whether there is effective competition in those relevant markets as required by section 67(4)(b).

Under the second half of paragraph (a), the Authority must determine an ECNS licensee to be a deemed entity if it has greater than 25% infrastructure in the market. This is an arbitrary requirement.

Frontier Economics discusses this in the attached report:

> *"Whilst a substantive market share may in certain circumstances be indicative of market power, there is no basis for the 25% market-share threshold. Under the EU regulatory framework, access obligations may be required where telecommunications operators are found to be dominant, which typically requires a market share above 40-50%. In addition, the majority of mobile markets within the EU have three or four players (and hence MNOs with market shares of above - and in many cases well above - 25%,) yet wholesale access regulation is rarely observed in EU Member States.[64]"*

The definition refers to having 25% of "the total electronic communication infrastructure" in an infrastructure market and we referred above to the fact than an infrastructure market may not exist. If the Authority can conceptualise an "infrastructure market", then the next step is trying to measure what 25% of the total electronic communication infrastructure would be.

This requires a definition of what infrastructure is relevant (a very difficult thing to do in practice and possibly not implementable) and collecting data about who has what infrastructure that fits within that definition. Then a licensee, who controls that amount of infrastructure, will be a deemed entity, even if control of that infrastructure confers no market power.

6.5.2 Control of essential facilities and spectrum

Under the new section 44(3A)(b), the Authority must determine an ECNS licensee to be a deemed entity if it has control of an essential facility or exclusive spectrum. Whereas essential facilities, in the current Act, has some connection with competition law principles, these qualifiers are arbitrary.

[64] Page 7, Frontier Economics report, Part 2

First, the definition of "essential facilities" under the Act has a much narrower meaning than under the Bill. Essential facilities under the Act require that they "cannot feasibly (whether economically, environmentally or technically) be substituted or duplicated in order to provide a service in terms of this Act" and included those facilities in section 43(8).

Under the changes in the Bill, the definition of "essential facility" has been expanded to include "*broadband infrastructure in the International Standardisation Organisation Open Systems Interconnect model layer 2 or layer 3 as prescribed by the Authority*", without the standard and necessary qualifier under competition law principles of "not feasibly substituted or duplicated". This layer 2 or layer 3 infrastructure may be economically feasible to duplicate, but it is still considered "essential" and so justified to impose access to. Many licensees will control layer 2 or layer 3 infrastructure.

The concept of essential facilities has been further extended, through a deeming provision, in the new section 20M(2)(a) where there are "adequately served" premises, facilities are required to be provided on an open access basis and the facilities or elements are deemed essential facilities. The standard of feasible to duplicate does not apply here either. For the same reasons that we object to layer 2 or layer 3 infrastructure being deemed an essential facility, we also object to facilities in adequately served premises being deemed an essential facility[65].

As well as its relevance to Chapter 8, this change to the definition of essential facilities also flows through to Chapter 10, where control of an essential facility is one of the grounds on which a licensee may be found to have significant market power (section 67(5)).

The ownership or control of spectrum might confer market power, but not necessarily or even ordinarily. The prevailing market practice around the world is to make spectrum available to multiple operators to enable them to compete in the market. Sometimes there are spectrum caps, or other competition law controls, to prevent anti-competitive acquisition of spectrum. There are legitimate issues about monopolisation of LTE spectrum, as we discussed in section 4.3, monopolisation of LTE spectrum is avoided if the WOAN is assigned a sufficient share of the unassigned LTE spectrum and other operators are assigned a sufficient share.

6.6 Exemption for licensees without market power

Under section 44(5) and (6) of the Act, the ability for the Authority to exempt a licensee with less than 25% market share has been deleted in the Bill. The consequence is that Chapter 8 can apply to any licensee and, whether or not it has any market power, it will always be subject to Chapter 8. There is no apparent reason for introducing this inflexibility.

6.7 Criteria unrelated to a market

Under section 44(3A)(a), a deemed entity needs to have significant market power in an infrastructure market determined by the Authority or have greater than 25% infrastructure in that market. But this makes that licensee a deemed entity, not only for that market, but for all markets.

A similar issue arises with control of essential facilities and spectrum. A deemed entity may control such facilities or spectrum, but the open access requirements in the amended Chapter 8 will apply to it in unrelated markets. For example, a mobile operator may have some spectrum, but be required to comply with the deemed entity regime in relation to any fixed network that it may have.

[65] We generally object to the adequately served provisions in the Bill, the thrust of which is to introduce an open access regime in relation to this infrastructure. This should require a Chapter 10 process. It also prohibits infrastructure competition, which we also oppose.

The market in which the open access obligations apply may be perfectly competitive, yet the obligations in Chapter 8 will apply.

As a consequence, this is unprincipled and arbitrary. Even if it were considered that deemed entities were appropriate, contrary to what is submitted above, it should not be the case that any active infrastructure sharing obligations apply in markets where a licensee would not otherwise be a deemed entity.

6.8 Imposition of blanket remedies under the deemed entity regime

The new section 43(1A) sets out the obligations that apply to deemed entities, as follows:

> *"(1B) An electronic communications network service licensee that is determined a deemed entity by the Authority in the wholesale open access regulations must, in addition to the requirement in subsection (1), comply with the following open access principles on its electronic communications network:*
>
> *(a) Active infrastructure sharing that includes but not limited to national roaming, radio access network sharing and enabling mobile virtual network operators, for voice and data based on the latest generation of technologies;*
>
> *(b) cost-based pricing;*
>
> *(c) access to its electronic communications network or electronic communications facilities as prescribed by Authority; and*
>
> *(d) specific network and population coverage targets."*

6.8.1 Open access to communications networks, systems and services

The requirement under the new section 43(1A) to provide open access to potentially the entire communications network, systems and services of a mobile operator is nearly the most intrusive intervention possible.

While an intervention of this nature may have been the unlikely outcome under Chapter 10, this would have required a process of defining a relevant market and testing whether the market is competitive and, if the market is found to be uncompetitive, analysing that licensee's market power and its potential to behave in an anticompetitive manner. That process is not required under the changes to Chapter 8.

It is highly unlikely that a proper market review would ever recommend a uniform set of interventions applicable to facilities, networks, systems and services. Assuming that intrusion in all these layers is justified, the level of intrusiveness will likely differ. Uniform intervention is likely to be inappropriate.

Professor Cave, in his attached report, says on the questions of what remedies are required to prevent market power from being used:

> *"These too are technical, quasi-legal determinations which have important consequences for all firms in the market place. For the same reason as specified above, it is widely considered to be better done by a regulatory agency than by a Minister. By the same token, the legislation should not, under normal circumstances, try to pre-empt the regulator's technical choices in such matters,*

by (for example) limiting the discretion of the regulator to make decisions concerning how to rectify market failures"[66].

It is unusual for regulators internationally to mandate national roaming, MVNO access or other forms of active infrastructure sharing in the mobile sector. When regulators do mandate these services, they are remedies to identified market failures in specific wholesale markets, not methods of general open access.

Frontier Economics notes in their attached paper:

"... by extending the scope of access obligations to essentially cover communication providers' entire networks, systems and services without first identifying the relevant bottlenecks that would justify such a wide-ranging intervention, the Bill diverges from a core principle of regulatory best practice. In reality, the fact that mobile operators in markets around the world compete at all levels of the supply chain and that network access regulation is not widely observed internationally, indicates that genuine bottlenecks (that would justify such an intervention) are rare in mobile networks"[67].

Professor Cave comments further as follows:

"As noted in Section 2 above, in the case of networks with a market share of more than 25%, the Draft Bill proposes to mandate open access to mobile wholesale products via roaming and/or MVNOs. This involves sharing not just of the passive assets such as towers or spectrum itself. This amounts to full network sharing - offering access in effect to all the components (electronic and non-electronic) in the value chain, with the exception of the retailing activity itself. This raises significant incentive problems, especially in a rapidly changing sector like mobile communications. If access is mandated, then every investment an operator makes in a 4G or 5G is shared with its competitors. This means that the Draft Bill's objective "to promote service-based competition and avoid concentration and duplication of electronic communications infrastructure in urban areas," might suitably be qualified by a recognition that too much network sharing, particularly of network components which support differentiation and innovation, may harm end users' interests"[68].

6.8.2 Cost-based pricing

Under the changes to Chapter 8, deemed entities are required to provide open access on "cost-based pricing"[69].

South Africa is in dire need of further infrastructure investment, not only in mobile, but also in fixed networks where fibre needs to be driven deeper and further into the access and backhaul networks. Mobile and wireless networks rely on fixed backhaul and is a key component of the costs of these networks.

Because operators need to continue to invest large amounts in next generation networks, with considerable associated risks, they need to know that these risks will be given weight if their pricing is to be regulated, so that they can achieve a reasonable return on their investment. If weight is not given to these risks, or a reasonable return is not available, in the calculation of cost-based pricing, or if there's

[66] Page 4, Professor Cave report
[67] Page 23, Frontier Economics report, Part 2
[68] Page 7, Professor Cave report
[69] We note that "cost-based pricing" is used liberally throughout the Bill, nine times, including by reference to parties that are not deemed entities.

doubt, this will create a chilling effect on the investment incentives of those operators and adversely impact on competition in the market.

When all is said and done, cost-based pricing remains an extreme remedy, that is normally only applied in the most significant monopoly situations.

6.8.3 Proportionality and response to changing market conditions

Under Chapter 10, the Authority may modify pro-competitive conditions to ensure proportionality or revoke conditions if the market changes (section 67(8)). There is no such ability for the Authority in respect of open access under Chapter 8.

Necessarily, this means that, even where open access is no longer proportional or if market conditions changed rendering the obligation inappropriate, the Authority has no power to modify the terms that apply to the deemed entity. Yet, in the more stringent Chapter 10, where powerful pro-competitive terms may be applied to parties with significant market power, the Authority does have this ability.

6.9 Obligations to build excess capacity

The new section 20I(2)(c) allows the Authority to impose:

> *"(c) obligations on electronic communications network service licensees to include excess capacity in their deployment and to lease spare capacity to other licensees at reasonable rates or such rates as prescribed under the open access policy regulatory framework contemplated in Chapter 8, whichever is lower"*

This is an irrational requirement to impose on licensees. Under this provision, a licensee may be required to build infrastructure beyond its needs, on the basis that another licensee may require access to it. But there is no requirement for another licensee to seek access to that infrastructure if it doesn't want to. The licensee that is required to build that excess capacity will bear all the risk of that infrastructure.

This risk is compounded by the fact that, where the licensee is a deemed entity, the Bill requires that access to that infrastructure, constructed with excess capacity, should be cost-based.

6.10 Requirement for accounting separation

Under the changes to Chapter 8 (the new section 43(1A)), all ECNS licensees that are vertically-integrated operators, as determined by the Authority, must undertake accounting separation, as well as complying with the general open access requirements. Under Chapter 10 of the existing Act, accounting separation may have been imposed as a pro-competitive measure, but only where the licensee had significant market power.

There is no definition in the Bill of what is meant by a "vertically-integrated operator" and it is up to the Authority to determine the criteria under the new section 44(3)(c). Is the implication that a licensee has both a wholesale business and a retail business? What if it is a retailer, but doesn't sell any wholesale products? What if it is a wholesale operator, which provides a wholesale product that uses another wholesale product as an input? The uncertainty surrounding this term in legislation is likely to cause problems, even though the criteria are to be determined by the Authority.

Accounting separation should not be routinely applied to licensees that have not been found to have significant market power. The burden and cost of complying with accounting separation requirements can be considerable, the benefits normally few and as such it is rarely a proportionate measure. In our view, the existing powers under Chapter 10 are more than adequate in these circumstances.

6.11 Interaction with Chapter 10

The changes to section 47(1), which relates to the regulation making powers of the Authority in relation to Chapter 8, are such that the Authority no longer needs to take into account the provisions of Chapter 10, as required under the current wording of section 47(1).

This was an important protection under the facilities leasing regime in Chapter 8.

6.12 Impact of these changes

6.12.1 Deemed entity regime

The effect on competition of interventions based on the arbitrary and intuitively low appearing thresholds in the deemed entity regime is likely to be disruptive and damaging, rather than achieving any pro-competitive outcomes.

Mandating active infrastructure sharing is irrational and unfounded, not only because these remedies may be imposed on licensees without any market power under the deemed entity regime, but also because they are uniform interventions when they may be inappropriate to address the relevant market failure problem.

Licensees will be disinclined to invest in infrastructure when they may be forced to provide cost-based access to that infrastructure to their competitors for the simple reason that they made that investment, not because they possessed any market power.

As Frontier Economics puts it in the attached paper:

> *"Requiring such [deemed entities] to provide access at "cost-based" pricing would impact on their ability to recover the costs associated with major new investments, particularly those based on next generation technologies that carry considerable risks. This is because standard cost-based regulation would reduce the potential returns that operators can make from these investments if they are successful, but may not compensate them for the risk of failure (i.e. if demand turns out to be lower than expected or costs higher than expected).*
>
> *In addition, setting appropriate price controls also relies on the regulator being able to make accurate forecasts of volumes and costs, which is particularly difficult in fast moving markets, such as telecoms. This will be especially problematic in South Africa if the Bill is introduced, since it contains a number of measures that will have a profound impact on the evolution of the market and create significant.*
>
> *There is, therefore, a substantive risk of regulatory error, which could further undermine investment incentives if prices are set at a level that does not allow operators to recover efficiently incurred costs (e.g. if volumes turn out to be lower than expected)"*[70].

Operators that commercially invest in infrastructure that supports sharing, which happens all the time today, will be disincentivised by the risk of the application of cost-based pricing. The commercial business case for developing "shareable" infrastructure will be adversely affected, with the natural result that there will be further duplication of infrastructure.

This is not just a concern for the big mobile operators and Telkom. Take Vumatel, a substantial and important commercial open access fibre provider. If Vumatel's access pricing is regulated to cost, then

[70] Page 23, Frontier Economics report, Part 2

it may not be able to achieve a sufficient return to continue to invest. Indirectly, that impacts on the mobile market, that relies on the services of companies such as Vumatel to provide some competition in the fixed access and backhaul market.

An unfortunate further effect is that the Bill will result in higher costs for operators, as investors and financiers add a "political risk" premium to reflect the uncertainty overhanging the industry. This risk premium would have to be captured in any cost-based pricing that may result.

Professor Cave addresses this political risk and the impact on investment in his attached report, in the context of a discussion in relation to the early return of spectrum:

> *"The retrospective withdrawal of spectrum from operators, especially if they have made parallel investments in assets which are then stranded, risks having effects of the same kind, because it enhances perceived regulatory risk and raises the return investors require. In some circumstances, this would raise prices to end users. But if the cost-based estimate of access charges which the legislation provide for does not take this higher cost of capital into account, the result may be that the company affected withdraws the plan to invest. If investors in other sectors witness this occurring in the mobile sector, they may revise upwards their estimate of regulatory risk not only in the mobile sector alone, but more widely in the South African economy. This would have a greater chilling effect"*[71].

There will be a "last-mover advantage", as licensees that find themselves as deemed entities, or might become a deemed entity, would prefer to acquire access from others at cost-based prices rather than take the risk of investing themselves.

Local and foreign direct investment will be directed to industries that do not have this sort of capricious regulation.

Similar concerns arise with the general requirement to provide wholesale open access based on general open access principles. The ambiguity and uncertainty in the Bill in relation to what is required and on what basis create the same sort of severe chilling effect on investment incentives.

6.12.2 No requirement for reasonableness

The deletion of the reasonableness requirement in Chapter 8 will have a damaging impact. An example can be used to illustrate the problem.

To accommodate an access request, there may be no further capacity available on or in the existing infrastructure. In that case, the licensee would need to incur potentially substantial costs to upgrade the existing infrastructure to accommodate the request or build new infrastructure (e.g., a tower). It may not be reasonable to pass these costs on to existing users of the infrastructure, who may get no benefit from the upgrade or new infrastructure.

What ought to happen in that situation, and what normally happens in commercial access agreements, is that the licensee should not be forced to bear these costs. Properly, the requesting party should bear these costs, as it is the only beneficiary. By removing the reasonableness requirement, the licensee would have to upgrade or invest in new infrastructure and bear the costs. Although the only beneficiary, the requesting party may gain the benefit without bearing any costs. That outcome is uncommercial.

[71] Page 8, Professor Cave report

6.12.3 Obligation to build excess capacity

The obligations in the Bill to build excess capacity will lead to inefficient over-provisioning of network infrastructure. It will mean that network build will be more expensive than it should be and will be slower to deploy.

Part C Proposals

6.13 The Government's objectives can be achieved through the existing tools in the Act

The existing tools under the Act enable a robust, firm and proportionate and expeditious response by the Authority to any market power problems. They should not be by-passed by the changes to Chapter 8 in the Bill.

In this Part C, we demonstrate why these tools are appropriate for addressing any market power problems.

6.13.1 Essential qualities of the existing tools

The Chapter 10 process in the Act (section 67(4)) involves the Authority, following an inquiry, prescribing regulations and imposing appropriate and sufficient pro-competitive licence conditions on licensees where there is ineffective competition and if any licensee has significant market power in that market or market segment. It involves a sequential and rigorous process of market assessment, market definition, identification of whether there is effective competition, whether any licensee has significant market power, with each stage needing to be satisfied before moving to the next stage. This allows for a robust, accurate and evidence-based outcome that operators, and the Government, can be confident in.

Then, if market failure and market power problems are identified, the process allows for a firm but proportionate response. The pro-competitive measures available to the Authority can go so far as to include cost-based access remedies, but because this may not be proportionate to the harm identified in the market review process, the Authority is able to tailor the remedy to best address the harm.

As Frontier Economics puts it:

> *"In terms of the cost-based access and roaming obligations, the importance of conducting market reviews prior to imposing ex-ante remedies such as these is well-established and is a key principle of international best-practice. This is because regulatory interventions can give rise to market distortions which could lead to worse outcomes for consumers. Before implementing any regulatory measures/remedies, it is therefore important to conduct a detailed market investigation to first identify any market failures and potential regulatory measures/remedies, and then assess the likely impact of such measures/remedies. The Priority Markets review should help to facilitate this process by identifying the markets that are susceptible to ex-ante regulation".*[72]

It should be possible to complete the process required by Chapter 10 within a reasonable timeframe without compromising the integrity and rigour of the process. International precedents indicate that it is possible to complete such a process within approximately 12 to 18 months.

Further, with the priority markets review already underway, this facilitates the effectiveness of the Chapter 10 process by enabling the Authority to move quickly to commence a market review process if required.

[72] Page 6, Frontier Economics report, Part 2

6.13.2 Consistency with international and regional best practice

The Chapter 10 process for determining whether to introduce *ex ante* regulation, through pro-competitive measures, is consistent with international best practice, including in comparable upper-middle income countries around the world.

We asked Frontier Economics to contrast the Chapter 10 process with other models used internationally[73]. They compared Chapter 10 with the *ex-ante* regulatory frameworks in five other jurisdictions spanning high income and middle-income regions as well as other African countries. These included the EU (high income), Malaysia and Singapore (middle income) and Kenya and Nigeria.

They found that:

> *"Within each of these countries, the steps that NRAs are required to follow when imposing ex ante regulations in any market or sub-market are broadly in line with the process set out in chapter 10. In particular the key steps are:*
>
> - *To define the relevant economic market – at a geographic, product, temporal or functional level*
> - *To set out the methodology used to determine the effectiveness of competition in these markets (and others if needed)*
> - *To undertake the market analysis using the methodology set out as above, and to identify undertakings that have significant market power*
> - *To impose ex-ante measures in the relevant markets, and monitor their implementation"*

Frontier Economics has included a table in their report, showing the comparison in more detail.

South Africa is not a regulatory outlier with an unworkable process for *ex ante* regulation. Quite the contrary. We sit firmly in line with other countries, including most countries that we would consider to be comparable. And South Africa is not a unique market in global terms, that can afford to risk an untested and untried, short-cut process to deal with our perceived problems.

6.13.3 The existing tools may be applied by a reasonably resourced and capable regulator

International best practice comparisons reveal that the Chapter 10 process may be applied by a reasonably resourced and capable regulator.

The Authority can execute on its requirements under Chapter 10 if it is fully resourced and any stumbling blocks are removed. In the past, the Authority has stated that it has not been able to effectively execute on its mandate or achieve its strategic objectives due to financial and human resource constraints[74]. The nature of the work required to be carried out by the Authority can be complex and requires appropriate resourcing to improve its competency if it is to succeed on its mandate.

6.13.4 Application of the existing tools

[73] Annex A, Frontier Economics report, Part 2

[74] ICASA 2015/2016 Annual Report, page 7; ICASA 2014/2015 Annual Report, page 17; ICASA 2013/2014 Annual Report, page 19

We have two recent examples of application of the existing tools by the Authority.

The Authority has recently commenced the priority markets review, which we refer to above. This is a significant inquiry to assess which markets or market segments are susceptible to *ex ante* regulation under Chapter 10. In that sense, the priority markets review is a preliminary phase, after which the Authority proposes to decide which of those markets or market segments are priority markets for initiating market reviews under section 67(4) of the Act. In doing so, the Authority is purporting to exercise its power under section 4B(1)(e) of the ICASA Act to conduct an inquiry with regard to the exercise of its powers, functions and duties in terms of section 67(4) of the Act.

The Authority's work on the inquiry and eventual market review should proceed in accordance with the principles of regulatory certainty and due process. The Bill as drafted will in effect suspend these processes, and is certainly directly in tension with them, creating uncertainty for market participants while they await the outcome of these processes. The Authority should be allowed to see the priority markets study through to finalisation under the current provisions of the law.

The other recent example of application of the existing tools by the Authority is the mobile termination rate pro-competitive measures that were determined following the Chapter 10 process.

The Authority has demonstrated that it can successfully implement the provisions of Chapter 10 through regulation of call termination services over the last seven years, using the current tools it has at its disposal. The Authority is currently conducting its second review of the call termination market, a process which is expected to be complete by 30 September 2018.

7. Other changes

Part A Introduction

7.1 Introduction

In this section 7, we discuss a number of other material changes to the Act introduced by the Bill that are not otherwise captured in the above sections. The objects clause of the legislation is proposed to be amended with the addition of new and unprincipled objectives. These are vitally important, as they will dictate how decision-makers engaging with the legislation interpret it and exercise their powers and duties. They must be firmly rooted in the interests of consumers, rather than introducing new and confusing policy objectives.

In this section, we also discuss provisions in the Bill which enable the Authority to impose obligations on operators that require potentially significant expenditure or significant risks to meet, as well as changes that envisage regulation of international roaming services in SADC countries and changes that erode the independence of the Authority.

In Part B, we provide a critique of these changes.

Part B Critique of the Bill

7.2 Inappropriate new objects of the Act

7.2.1 Primary objective of the Act

Section 2(a) has been substantially changed and now reads as follows:

> *"The primary object of this Act is to provide for the regulation of electronic communications in the Republic in line with the National Integrated ICT Policy White Paper, 2016 and the public interest objectives in such White Paper, since ICTs play an essential role in socio-economic development and effective participation of all South Africans in the affairs of the Republic…"*

This provision gives legislative primacy to a Government policy document. This is highly unusual, if not unique, and blurs the line where policy stops, and legislation starts. Although government policy is given effect to in legislation, it is not normally the case that a government policy document itself effectively becomes part of legislation. We discuss this constitutionality of this aspect of the Bill in section 8.1.4 below.

As well as unconstitutional, it is dangerous in our view. The White Paper is approximately 200 pages of factual background, objectives and policy discussion. It covers telecommunications, as well as broadcasting and postal sectors. It was written as a policy document, but it is clear that it was never intended to in effect become part of legislation through the changes to section 2.

Parts of the White Paper have been translated directly into the Bill. Much of it hasn't, but that creates ambiguity and uncertainty over the extent to which the White Paper still represents Government policy. Vodacom has referred in section 4.2 above that, although it is not stated in the Bill, it will be a consequence of the Bill that the WOAN is assigned all or substantially all of the unassigned high demand spectrum. That is what the White Paper requires.

The amendments made to section 2(a) should be deleted.

7.2.2 Access to spectrum

The changes introduce a new objective to "*(cA) redress the skewed access by a few to economic and scarce resources such as radio frequency spectrum, to address the barriers to market entry*".

The principle of spectrum being granted on an exclusive basis to a relatively small number of operators is the norm in almost every country in the world for spectrum in the high demand bands. Exclusivity has been required to avoid interference and for the other technical reasons described in section 5.4 above and spectrum is awarded to a relatively small number of operators because each requires a minimum capacity free of interference to efficiently provide services over their networks.

The licensing of spectrum on an exclusive basis has directly facilitated the development of mobile networks in strong competition with each other and the provision of voice and data services enjoyed by the vast majority of the people of South Africa.

The application of this new objective, taken at face value, supports such actions as stopping spectrum licences short or requiring their return, as discussed in section 5.4. It also supports the deeming of all spectrum licensees to be subject to onerous wholesale access obligations, even where they have no market power and operate in competitive markets, which we discuss in section 6.

The objective is inappropriate in a regulatory regime that respects the legal property rights of licensees.

7.2.3 Promotion of services-based competition and avoidance of duplication

The changes also introduce a new objective to "*(cB) promote serviced-based competition and avoid concentration and duplication of electronic communications infrastructure in urban areas*".

The objective in paragraph (cB) deals with two ideas. First is that services-based competition should be promoted and second is that duplication of infrastructure in urban areas should be avoided.

This suggests the Government has lost confidence in infrastructure competition, where most countries in the world are doing everything they can to increase infrastructure competition. Infrastructure competition is not something to stop, it's something that should be actively encouraged, as that competition drives investment, as we have explained in this submission. In fact, infrastructure competition leads to greater services-based competition, as competing infrastructure providers drive wholesale and retail competition, whereas a pure focus on services-based competition results in homogenous products at similar prices, with little differentiation among service providers.

7.2.4 Open access environment

The changes introduce a new objective to "*(cC) promote an environment of open access to electronic communications networks on terms that are effective, transparent and non-discriminatory*".

Vodacom supports commercially negotiated arrangements between licensees for co-investment in new broadband infrastructure and we see a role for the Authority in encouraging or even actively facilitating these arrangements. A non-prescriptive framework for the sharing of infrastructure, particularly in rural and marginal areas, positively impacts on the achievement of objectives of the National Development Plan.

As mentioned above, the concept of "open access" is unclear as a legislative requirement.

Open access, conceptually, is a principle that would apply to specific concrete and defined pro-competitive measures. As such, if it is to be imposed on a licensee, then there should be rigorous

analysis to support it under a Chapter 10 process. We should not accept a general environment of mandated open access, operating at the level of an object of the Bill, that may be applied regardless of the impact on licensees that may be subject to it. The outcome of this would be a reduction in desperately required investment and an adverse effect on welfare enhancing capabilities of efficiently operating ICT sector.

7.2.5 Market dominance and control

The changes introduce a further new objective to "*(cD) redress market dominance and control*". The concept of market dominance is well understood, but it is unclear what "control" means in this context and what it is intended to add to the reference to market dominance.

7.3 Provisions that impose costs and introduce risks

There are several provisions in the Bill which enable the Authority to impose obligations on operators, which will require potentially significant expenditure or significant risks to meet. We referred above (section 5.8.1) to our concerns over the new section 31A.

Other provisions of a similar nature include that the Authority may make regulations setting out obligations on licensees for the rapid deployment of networks and facilities (section 20C(1)(b)) and terms and conditions for rapid deployment of networks and facilities (section 8(6)). This may require an operator to deploy network where it did not want to deploy, or require it to do so more quickly than it would have intended. There may be no, or marginal, business case for deployment. This may significantly increase the risk to the licensee of making these new investments.

Further, the Authority can make quality of service regulations every two years, including broadband speeds (section 69A). This is an open-ended power for the Authority to require an operator to invest large amounts to increase speed, even when the prospect of a return on that investment is low.

Under the previous section 8(3), the Authority could prescribe additional terms and conditions applied to any individual licence or class licence, but this was "subject to the provisions of Chapter 10". This proviso has been deleted in the Bill. It provided an important protection for licensees, who knew that Chapter 10 only applied to parties with significant market power and, as such, the obligations that may have been imposed under section 8(3) would not apply to them if they did not have that market power. Now, regardless of whether a licensee has market power, the amended section 8(3) entitles the Authority to change the terms and conditions of their licences. This is a very open-ended power to grant to the Authority. The reference to Chapter 10 should be reinstated.

7.4 New Chapter 7A: international roaming

Chapter 7A envisages regulation of international roaming services in SADC countries following SADC Roaming Policy Guidelines agreed to by the SADC Ministers responsible for Telecommunications, Postal Services and ICTs. Further, section 42(7) provides "*This section applies mutatis mutandis to international roaming to any other jurisdiction*". This appears to extend the Guidelines and Regulations that apply to SADC countries to the rest of the world.

Vodacom considers this to be the wrong approach. International roaming is a complex issue, not least due to the fact that regulation applies in relation to services provided in other jurisdictions. As set out in the Frontier Economics report, cost based international roaming is likely to dampen investment incentives and introduce significant distributional effects, including a rebalancing of international roaming and domestic retail tariffs through an increase in domestic retail tariffs. Frontier Economics finds that unilateral intervention in international roaming services is unprecedented and risks South African consumers having to subsidise foreign markets. Frontier also finds cost based international roaming retail rates to be unprecedented.

Before looking to regulate international roaming, there should be a proper review of wholesale and retail markets, analysis of market power and an impact assessment under the processes in Chapter 10. The emergence of "over-the-top" communications applications as a substitute for traditional voice and messaging is likely to significantly impact on such a review.

The approach in the new Chapter 7A is to impose rigid and inflexible wholesale (and retail) obligations for international roaming, whereas the better approach is for the Authority to conduct a Chapter 10 process to examine the nuanced issues that arise with international roaming.

To the extent that the new Chapter 7A deals with consumer protection issues, these are adequately addressed generically in Chapter 12 of the existing Act.

7.5 Eroding the independence of ICASA

We have referred in section 5.6 to the changes in the Bill that erode the independence of the Authority in radio spectrum matters, in favour of the Minister.

There are other changes in the Bill that also erode the independence of the Authority, including the Minister taking over the Authority's roles in approval of Universal Service Access and Obligations and the Authority having to now act on the Minister's policy directives as opposed to only taking policy directives into consideration. We consider the constitutionality of these provisions in section 8.2 below.

In the attached report from Professor Martin Cave, he states:

> *"I note that a major feature of the draft Bill is its proposal to rebalance power among legislators, the Minister and ICASA, to the detriment of ICASA. Thus much more of the regime is prescribed in law than before, and discretion formerly exercised by the regulator is transferred to the Minister. I am concerned that taking decisions of a technical rather than a policy nature from a neutral implementing body to a more political institution runs the risk of introducing greater uncertainty into the sector, to the harm of end users"*[75].

7.6 Rapid deployment

Vodacom generally supports the changes to Chapter 4 regarding rapid deployment of electronic communications networks and electronic communications facilities. However, we do have some specific comments to make.

7.6.1 A rapid deployment database is not practical

A rapid deployment database as envisaged by the new section 20B of the Bill is unlikely to be practical.

There are several reasons for this. First, despite being highly motivated to do so, existing operators struggle in practice to build and maintain accurate configuration databases of our active and passive infrastructure. Second, there is no reason to expect municipalities and landowners will be able to be any more efficient than operators and maintain such an accurate database (see sections 20D(4) and 20E(1)).

Accordingly, while a rapid deployment database is a worthy objective, it isn't practical and is unlikely to meet its objectives.

[75] Page 12, Professor Cave report

7.6.2 The Authority should perform the functions of the Coordinating Centre

For the Rapid Deployment National Coordinating Centre to be effective it needs to be appropriately empowered. Vodacom submits that this function could be and should be fulfilled by the Authority. The creation of a separate entity would lead to the creation of a further SOC and will introduce debate between the regulators/entities and result in undesired delays.

7.6.3 Collection of commercially sensitive information

The Bill includes a new section 20C, which provides as follows:

> "*(3) The Authority must ensure that electronic communications network service licensees—*
> *(a) provide information on existing and planned electronic communications networks and facilities, … for inclusion into the geographic information system database;*
>
> *(b) provide information on existing and planned electronic communications networks and facilities to the Authority and other electronic communications network service licensees…*"

Vodacom's concern with this provision is that the collection and disclosure requirements are likely to be harmful to licensees as sensitive commercial information regarding their planned roll outs and location of fibre customers would be revealed. This disclosure requirement is likely to have anti-competitive implications.

Instead, the database should be updated when new deployments have been made. There should be no requirement to notify of upcoming deployments, due to their commercial sensitivity.

7.6.4 General delay concerns

The process in updating and maintaining an accurate centralised database for operators will result in delays in their rolling out new infrastructure. This is likely to be counterproductive and will override any benefits that a centralised approval model will have in addressing duplication.

7.7 Fishing expeditions

Vodacom is concerned with general, unfettered rights for the Authority to require licensees to provide information. The Authority should be constrained in its ability to require information, which can be time consuming and resource intensive to comply with. The difficulty is that, with a power such as this, regulators can become undisciplined and tempted to embark on "fishing expeditions".

Examples in the new Bill include the new sections 43(7A) and 79C(2).

7.8 End user and subscriber service charter

Vodacom generally supports the changes proposed to section 69, but we are concerned about extending the code of conduct to include wholesale matters and also amendments to section 69(5) in relation to end user and subscriber service charters.

Subsection (1A) extends the code of conduct protections beyond retail end users to include "users of wholesale services". These users are normally significant entities that have no need of consumer protection-style codes of conduct. These should be confined to retail end users.

The amendments include a requirement that licensees provide "accurate, understandable and comparable information" to end users on their plans. Although this sounds acceptable in principle, in practice it is likely to be difficult to comply with, especially in relation to comparability.

Licensees have a multitude of plans in the market, trying to appeal to particular customer segments. In a competitive market such as South Africa, retail plans are changing constantly, with licensees trying to provide value for consumers in the best way possible.

The only way this obligation could work is if the Authority identified a set of standard customer parameters and asked licensees to provide information on the prices and product features that met those parameters. This is similar to the way benchmarking is done by organisations such as the OECD.

Our suggestion is that the Authority consider these matters in regulations.

8. The Constitutionality of the Bill

The discussion in the preceding sections of our submissions will have already illustrated that there are a number of respects in which the Bill falls short of the requirements of the Constitution of the Republic of South Africa, 1996 ("**the Constitution**"). In this section, Vodacom specifically deals with the important proposition that the Bill is subject to constitutional challenge.

This is considered under three headings:

- violations of the rule of law and the doctrine of legality;
- violations of the constitutionality guaranteed independence of the Authority; and
- violations of Vodacom's property rights.

8.1 Violations of The Rule of Law and the Doctrine of Legality

8.1.1 The Centrality of the Rule of Law in South Africa's Constitutional Order

The rule of law is a foundational principle in our constitutional democracy,[76] and is entrenched in section 1(c) of the Constitution. The rule of law has many facets: central amongst these is the principle that a State must be governed by law, and not by Ministerial (or other government official) fiat.

In the context of legislation, the Constitutional Court, in the decision on *Fedsure Life Assurance*, has explained how the rule of law means that legislation must be clear and certain, and that it must operate prospectively and not extinguish existing rights:

> "*Generally, legislation is not to be interpreted to extinguish existing rights and obligations. This is so unless the statute provides otherwise or its language clearly shows such a meaning. That legislation will affect only future matters and not take away existing rights is basic to notions of fairness and justice which are integral to the rule of law, a foundational principle of our Constitution. Also central to the rule of law is the principle of legality which requires that law must be certain, clear and stable. Legislative enactments are intended to 'give fair warning of their effect and permit individuals to rely on their meaning until explicitly changed'.*
> *As Innes CJ reasoned in Curtis:*
>
> > *'The general rule is that, in the absence of express provision to the contrary, statutes should be considered as affecting future matters only; and more especially that they should if possible be so interpreted as not to take away rights actually vested at the time of their promulgation.'*"[77]

In another important decision in *Veldman*, the Constitutional Court explained that the doctrine of legality meant that the exercise of public power could not be arbitrary.

> "*It is a requirement of the rule of law that the exercise of public power by the Executive and other functionaries should not be arbitrary. Decisions must be rationally related to the purpose for which the power was given, otherwise they are in effect arbitrary and inconsistent with this requirement. It follows that in order to pass constitutional scrutiny the exercise of public power by the Executive*

[76] *Fedsure Life Assurance Ltd and Others v Greater Johannesburg Transitional Metropolitan Council and Others* 1999 (1) SA 374 (CC) ("Fedsure Life Assurance") at paras 57-59.
[77] *Veldman v Director of Public Prosecutions (Witwatersrand Local Division)* 2007 (3) SA 210 (CC) at paras 26-27 (footnotes omitted.

and other functionaries must, at least, comply with this requirement. If it does not, it falls short of the standards demanded by our Constitution for such action."[78]

Hence, all law, including the Bill once enacted, must comply with the requirements of the rule of law in order to pass constitutional muster. If not, once enacted by Parliament,[79] it can be declared unconstitutional by a Court,[80] which means it then has no legal effect.

In the preceding sections of our submissions, we have canvassed a number of instances where the Bill is unconstitutional because it violates the rule of law. In this section, we set these out and discuss them in more detail. Essentially, these are that:

- the Bill is irrational and arbitrary in a number of respects;
- the Bill is materially vague in a number of respects; and
- the Bill seeks to incorporate and thereby elevate the White Paper into legislation, which is impermissible.

8.1.2 The Bill is Irrational and Arbitrary

The principle of legality means that law that is arbitrary is unconstitutional.[81]

In the discussion above, and in the report by Frontier Economics, respects in which the Bill is arbitrary and irrational, contrary to its purposes and contradictory, are canvassed in some detail. These are not all repeated here. Suffice to emphasise the following:

- The goals of achieving the rapid unlocking of high demand spectrum, its efficient exploitation, and equitable and efficient access by the public to its benefits will be severely undermined, rather than furthered, by:
    - removing the current efficient exploitation of spectrum by operators; and
    - making access to high demand spectrum, which is defined in such a way as to encompass all valuable spectrum, on the part of licensees conditional upon commitment to taking 30% capacity in the WOAN, and the WOAN being "functional"; and
    - making all spectrum subject to "open access".

    These aspects of the Bill ensure the absence of the requisite incentives on the part of licensees and investors to make the required commitments, especially given the absence of any clear criteria for functionality, the absence of any certainty that any high demand spectrum would be obtained even after the 30% commitment would be made, and the absence of any meaningful

[78] *Pharmaceutical Manufacturers Association of SA and Another: In re ex parte President of the Republic of South Africa an Others* 2000 (2) SA 674 (CC) ("*Pharmaceutical Manufacturers*") at para 85 (emphasis added).
[79] The Bill cannot be challenged in Court unless and until it is enacted as an Act of Parliament by the Legislature. Section 79 of the Constitution affords the President the opportunity to refer a Bill (before it is enacted) to the Constitutional Court if he has concerns about the constitutionality of the Bill in certain circumstances.
[80] In order to do this, a party (such as Vodacom) would bring an application to the High Court of South Africa to have the Bill (once it is enacted into law as an Act of Parliament) declared unconstitutional. If the High Court makes such an order, the declaration of constitutional invalidity must then be confirmed by the Constitutional Court in terms of section 167(5) of the Constitution.
[81] *Pharmaceutical Manufacturers*.

commercial value in spectrum given the "open access" obligations. This in turn ensures the non-eventuation, or at least significant delay in the eventuation, of the envisaged functionality of the WOAN, and consequently the sterilisation of all valuable spectrum, and the concomitant failure of the objects sought to be achieved.

- The practical unfeasibility of assigning all high demand spectrum to the WOAN, as demanded in the White Paper the Bill is enjoined to implement, and the resulting dysfunctionality of the WOAN, undermines the central objects of the Bill.

- The extent to which the Bill materially undermines the objectives it intends to achieve and is contradictory is set out in Part II, sections 2 and 3 of the Frontier Report.

- The notion of "open access" to spectrum is fundamentally incoherent, especially when considered in the light of an obligation to make facilities available on an open access basis, and at cost-based prices, and contradicts the declared preference for spectrum sharing and spectrum trading, which are notions premised on exclusive rights to spectrum.

- Placing the decision how much high demand spectrum is to be allocated to the WOAN entirely in the hands of the executive, without being preceded by a market inquiry, is manifestly arbitrary, as only a rigorous market inquiry could yield a rational assessment of the likely effects, both on the WOAN and on the market generally, of allocating a certain share of high demand spectrum to a WOAN.

- The same is true of making all high demand spectrum subject to an ill-conceived and incoherent principle of "open access".

- The rapid and efficient unlocking of high demand spectrum, and the optimal combination of exclusive and efficient exploitation of spectrum by private licensees with an open access WOAN, are principles and processes already in place and ready to be utilised, to achieve the objects sought to be achieved in the Bill, through the current ITA process launched by ICASA, but which the Government has brought to a halt with a legal challenge. Given the existence of such a process, its consistency with current international best practice, and the speed with which, if allowed to continue, it could achieve significant progress towards achieving the goals of the Bill, opting for the impossibilities and uncertainties of the Bill in its stead is tragically irrational.

- The deemed entity regime is entirely arbitrary and the thresholds imposed for supposed market power irrational and without any foundation; the fact that open access obligations extend into all aspects of the network and all markets, even those in which the licensee cannot conceivably be a deemed entity, exacerbates the irrationality.

- The uniquely extensive sharing obligations that extend to all aspects of the network and are bereft of any reasonableness thresholds rigidly lock extremely inefficient and counterproductive arrangements into the legislation, leading to absurd results, especially as accepted competition principles are thrown overboard and substituted by arbitrary and rigid determinations not based on any market impact analysis for each individual case as would be required for rationality.

All of these are examples of how the Bill is arbitrary and irrational, and therefore in conflict with the Rule of Law.

8.1.3 The Bill is Vague

The preceding sections have also identified many material respects in which the Bill is incurably vague and incomplete.

Material examples of incurable vagueness in the Bill relate to:

- the dimensions and operations of the WOAN;
- what its being "functional" would entail;
- whether and on what basis it is envisaged that high demand spectrum could be returned prior to the expiry of spectrum licences;
- what is envisaged by "open access" as applied to spectrum;
- how "open access" is to be applied to facilities and whole networks, as discussed in section 6.2.1 above.

The extensive degree of vagueness in the Bill means that it offends the rule of law, and may be declared unconstitutional as a consequence.

It is important to note that the stakes with respect to the expected impact on the economy as a whole are extraordinarily high, as examined in the Frontier Economics report when assessing the impact on the wider economy. Opting for a drastic and unique move in the direction of monopoly, and away from competition, where the impacts on prices and efficiency are likely to translate directly into severe impacts on GDP, employment and welfare in general, in such precipitate fashion, is irrational.

8.1.4 Incorporation of the White Paper Through Reference

The Bill states as one of the objects of the Amended Act the rather extraordinary, and unprecedented, notion of implementation of the White Paper. The Bill accordingly envisages that the Act is in a sense subordinate to another instrument, the White Paper, and that its meaning is to be derived from this instrument.

This violates the rule of law. The rule of law requires that the source of a particular law must be clear and unambiguous. Where law derives from both the Legislature (through the Bill) and the Executive (though the White Paper), there is an impermissible delegation or abdication of the law-making function by the Legislature to the Executive. As Lord Hoffman has explained:

> "*In a society based upon the rule of law and the separation of powers, it is necessary to decide which branch of government has in any particular instance the decision-making power and what the legal limits of that power are. That is a question of law and must therefore be decided by the courts.*"[82]

The fact that the White Paper itself is incurably vague in material respects, and that the Bill contradicts some principles of the White Paper directly,[83] fortifies this conclusion.

8.2 Violating the independence of the regulator

[82] *R (on the application of ProLife Alliance) v British Broadcasting Corporation* [2003] UKHL 23 at para 75.

[83] See for example the discussion in section 6.1 how the amendments to Chapter 8 contradict principles in the White Paper; furthermore, the notion that some unassigned spectrum is to be assigned to the operators contradicts the decree in the White Paper that all unassigned high demand spectrum is to be assigned to the WOAN.

The Bill requires the Minister to take over a number of functions of ICASA. These include:

- the development and approval of the National Radio Frequency Plan;
- the approval of Universal Service Access and Obligations; and
- a requirement that the Authority must now act in accordance with the Minister's policy directives, which must be contrasted with the current position which requires the Authority to take into consideration policy directives when making decisions, but insists on its independence in relation to its decision making.

Further detail regarding the removal of discretionary authority from the Authority, either through the prescription in the Bill of what the Authority must do (where it previously exercised the discretion) or through the transfer of these powers from the Authority to the Minister, are set out in Martin Cave's opinion. Specifically, Professor Cave highlights the following instances where the Authority's role and functions have been "*hollowed out*":

- the Bill gives the Minister the role of deciding what spectrum constitutes high demand spectrum;
- the Bill gives the Minister the power to decide the allocation of high demand spectrum, to the WOAN or to other operators;
- the Bill gives the Minister the power, following a report by the Authority, to decide which already assigned high demand spectrum operators should be returned to the Authority for re-assignment;
- the Bill requires all vertically integrated mobile operators to produce separated accounts, irrespective of their market size;
- the Bill requires the Authority to designate as a "*deemed entity*" any licensee which has 25% or more of an electronic communication network in an infrastructure market;
- the Bill requires the Authority to mandate that cost-based access to be offered by MNOs that are declared deemed entities by the Authority;
- the Bill requires the Authority to develop, within 18 months of the Bill being enacted, wholesale open access regulations to facilitate open wholesale access;
- the Bill seems to suggest that any licensee that controls exclusively-used spectrum should also be designated by the Authority as a deemed entity. This means effectively the everyone that controls exclusively any type of spectrum is a deemed entity;
- the Bill removes the ability of the Authority not to require access to fibre loops;
- the Bill limits the Authority's power to determine the terms for the award of spectrum to the market participants, by imposing a rule that for a potential bidder to acquire LTE spectrum they have to first commit to buying 30% of the capacity of the WOAN; and
- the Bill transfers from the Authority to the Minister some of the Authority's key responsibilities, including:

- the establishment of a National Radio Frequency Planning Committee and a National Radio Frequency Planning Division;
- the responsibility for the Development of the National Radio Frequency Plan which currently resides with ICASA;
- ensuring equitable distribution of radio frequency spectrum resources; and
- responsibility for approval of Universal Service Access and Universal Service Obligations.

These provisions individually and collectively undermine the constitutionally-entrenched independence of the Authority. The independence of ICASA is fundamental to effective decision-making and regulation of the electronic communications sector. The exercise of executive discretion weakens the Authority's functional independence.

If the Bill is adopted, ICASA's role will be largely limited to the administration of the radio frequency spectrum. Planning and control of the spectrum will reside with the Minister. A consideration of section 34 of the Act (dealing with the national radio frequency plan) is illustrative of how the powers currently given to the Authority, will be taken over by the Minister. Section 34 of the Act presently provides:

"*(1) The Minister, in the exercise of his or her functions, represents the Republic in international fora, including the ITU, in respect of—*
(a) the international allocation of radio frequency spectrum;
(b) the international coordination of radio frequency spectrum usage; and
(c) the co-ordination and approval of any regional radio frequency spectrum plans applicable to the Republic, in accordance with international treaties and multinational and bilateral agreements entered into by the Republic.
(2) The Minister must approve the national radio frequency plan developed by the Authority, which must set out the specific frequency bands designated for use by particular types of services, taking into account the radio frequency spectrum bands allocated to the security services.
(3) The Authority must assign radio frequencies consistent with the national radio frequency plan for the use of radio frequency spectrum by licence holders and other services that may be provided pursuant to a licence exemption.
(4) The Authority must, within 12 months of the coming into force of this Act, prepare the national radio frequency plan or make appropriate modification to any existing radio frequency plan to bring it into conformity with this Act.
(5) The national radio frequency plan must be updated and amended when necessary in order to keep the plan current. When updating and amending this plan due regard must be given to the current and future usage of the radio frequency spectrum.
(6) The national radio frequency plan must—
(a) designate the radio frequency bands to be used for particular types of services;
(b) ensure that the radio frequency spectrum is utilised and managed in an orderly, efficient and effective manner;
(c) aim at reducing congestion in the use of the radio frequency spectrum;
(d) aim at protecting radio frequency spectrum licensees from harmful interference;
(e) provide for flexibility and the rapid and efficient introduction of new technologies;
(f) aim at providing opportunities for the introduction of the widest range of services and the maximum number of users thereof as is practically feasible.
(7) In preparing the national radio frequency plan as contemplated in subsection (4), the Authority must—

(a) take into account the ITU's international spectrum allocations for radio frequency spectrum use, in so far as ITU allocations have been adopted or agreed upon by the Republic, and give due regard to the reports of experts in the field of spectrum or radio frequency planning and to internationally accepted methods for preparing such plans;

(b) take into account existing uses of the radio frequency spectrum and any radio frequency band plans in existence or in the course of preparation; and

(c) consult with the Minister to—

(i) incorporate the radio frequency spectrum allocated by the Minister for the exclusive use of the security services into the national radio frequency plan;

(ii) take account of the government's current and planned uses of the radio frequency spectrum, including but not limited to, civil aviation, aeronautical services and scientific research; and

(iii) co-ordinate a plan for migration of existing users, as applicable, to make available radio frequency spectrum to satisfy the requirements of subsection (2) and the objects of this Act and of the related legislation.

(8) The Authority must give notice of its intention to prepare a national radio frequency plan in the Gazette and in such notice invite interested parties to submit their written representations to the Authority within such period as may be specified in such notice.

(9) The Authority may, after the period referred to in subsection (8) has passed, hold a hearing in respect of the proposed national radio frequency plan.

(10) After the hearing, if any, and after due consideration of any written representations received in response to the notice mentioned in subsection (8) or tendered at the hearing, the Authority must forward the national radio frequency plan to the Minister for approval.

(11) The Minister must, within 30 days of receipt of the national radio frequency plan, either approve the plan, at which time the plan must become effective, or notify the Authority that further consultation is required.

(12) Upon approval of the national radio frequency plan by the Minister, the Authority must publish the plan in the Gazette.

(13) Any radio frequency plan approved in terms of this section and all the comments, representations and other documents received in response to the notice contemplated in subsection (8) or tendered at the hearing must be—

(a) kept at the offices of the Authority; and

(b) open for public inspection by interested persons during the normal office hours of the Authority.

(14) The Authority must, at the request of any person and on payment of such fee as may be prescribed, furnish him or her with a copy of the radio frequency plan.

(15) The provisions of subsections (6) to (14) apply, with the necessary changes, in relation to any amendment made by the Authority to the radio frequency plan.

(16) The Authority may, where the national radio frequency plan identifies radio frequency spectrum that is occupied and requires the migration of the users of such radio frequency spectrum to other radio frequency bands, migrate the users to such other radio frequency bands in accordance with the national radio frequency plan, except where such migration involves governmental entities or organisations, in which case the Authority-

(a) must refer the matter to the Minister; and

(b) may migrate the users after consultation with the Minister.

Hence, under the current section 34 of the Act, ICASA has extensive powers to develop and prepare the national radio frequency plan, as well as implement it. Under the Bill, this section will be amended significantly to empower the Minister to take over most of these powers without ICASA's involvement. Specifically, under the Bill:

- only subsection (3) and (5) of section 34 will remain;

- the only power left to ICASA is in terms of subsection (3).

Since subsection (4) of the principal Act has been deleted there is no certainty as to when the NRFP has to be prepared or appropriate modifications made to any existing radio frequency plan.

Section 192 of the Constitution provides as follows:

> "*National legislation must establish an independent authority to regulate broadcasting in the public interest, and to ensure fairness and a diversity of views broadly representing South African society.*"

The importance of independence of the broadcasting regulator finds expression in international instruments, such as the African Charter on Broadcasting (2001), which states, at paragraph 2:

> "*All formal powers in the areas of broadcast and telecommunications regulation should be exercised by public authorities which are protected against interference, particularly of a political or economic nature, by, among other things, an appointments process for members which is open, transparent, involves the participation of civil society, and is not controlled by any particular political party.*"

There are three statues that give effect to the imperative in section 192 of the Constitution for an independent regulating Authority: the Broadcasting Act 4 of 1999 ("**the Broadcasting Act**"), the ECA and the ICASA Act. As the Constitutional Court has explained in *Electronic Media Network Limited and Others v e.tv (Pty) Ltd and Others*,[84] these Acts "*give institutional embodiment to a vivid constitutional notion – a commitment to regulating broadcasting in the public interest, and to ensure fairness and a diversity of views broadly representing South African society.*"

The Constitutional Court held that the ECA and ICASA Act have been joined together in fulfilment of the value of section 192:[85]

> "*[Parliament] locked the two statutes together. The ECA doesn't stand alone on a statutory island, isolated from the ICASA Act and from section 192. The two statutes lie entwined in a friendly, mutually inter-locking constitutional embrace, their provisions and purposes closely interlinked.*
>
> *They must be. Both owe their origin to section 192. And both seek, rightly, to fulfil its values.*"

The above entails important recognition by the Constitutional Court that the reach of section 192 is not confined to the traditional conception of "broadcasting" in isolation from electronic communications. After all, the constitutional section expressly sets out a purpose – making the electronic media of the spread of ideas in South Africa subject to independent regulation, not beholden to Governmental control, and this purpose must be read to determine the scope of the protection, and to keep pace with technological and social developments. This is in line with the orthodox theory of constitutional interpretation in our law, to interpret the Constitution as a "living document". This is specifically recognised in the context of section 192 in *Electronic Media Network*:[86]

> *"[Section 192] remains alive, an operative part of a living Constitution*".

Both the ECA and the Broadcasting Act (as did the Broadcasting Act 153 of 1993, which was in place when section 192 was enacted), define broadcasting broadly enough to encompass any unidirectional

[84] 2017 (9) BCLR 1108 (CC) at para 101.
[85] Paras 102 and 103.
[86] Para 100.

electronic communication to the public by means of any electronic communications, which would include mobile technology. This would include an internet-based news service. With increasing convergence, the barriers between broadcasting and telecommunications have broken down such that there is no coherent line between them for the purposes of protecting the value enshrined in section 192, which is precisely why the statutes were linked together in the way celebrated by the Constitutional Court.

Even if the term "broadcasting" in section 192 were to be read as confined to the narrower traditional conception, and to exclude electronic communications generally, the degree to which the Bill confers the power to control spectrum and the use of spectrum on the Ministry entails an infringement of section 192. Spectrum is critical for (traditional) broadcasters to operate, and the degree of control over spectrum allocation conferred on the Ministry in the Bill amounts to an ability effectively to license broadcasters through controlling their spectrum – an ability ultimately to control the free spread of ideas independent of governmental dictates through broadcasting.

The right in section 192, to an independent regulator, is not qualified or subject to any limitation.[87] Any conduct of legislation which amounts to a limitation of section 192 of the Constitution, through an infringement of the independence of ICASA, would therefore be unconstitutional, and would not be capable of being justified.

It may be observed that the radical subversion of the independence of ICASA also contradicts provisions in the ICASA Act that entrench ICASA's independence (not only in the sphere of "broadcasting").[88] These contradictions add to the irrationality of the amendments, as they do not fit within the current legislative framework with a companion Act.[89]

8.3 Infringements of Vodacom's Property Rights

8.3.1 Constitutional Protection Against Expropriation Without Compensation and the Arbitrary Deprivation of Property

Section 25(1) of the Constitution provides a range of protections against a person's (including a juristic person's) property rights. It reads:

> "*25. (1) No one may be deprived of property except in terms of law of general application, and no law may permit arbitrary deprivation of property.*
> *(2) Property may be expropriated only in terms of law of general application—*
> *(a) for a public purpose or in the public interest; and*
> *(b) subject to compensation, the amount of which and the time and manner of payment of which have either been agreed to by those affected or decided or approved by a court.*

[87] Rights in the Bill of Rights, for instance, are subject to section 36 of the Constitution, which permits a limitation of fundamental rights to the extent that the limitation is reasonable and justifiable in an open and democratic society. This is not so for a violation of section 192.

[88] See The objects of the ICASA Act in section 2, sections 3(3) and (4), and the provisions in sections 4(3)(e) and 4(4)(f) that confer exclusive jurisdiction on ICASA in respect of licensing.

[89] This is analogous to the situation in *Pharmaceutical Manufacturers* where the President (at that time, Nelson Mandela) brought into operation the South African Medicines and Medical Devices Regulatory Authority Act 132 of 1998, and in so doing repealed all the existing supporting regulations. This was done under the mistaken understanding that a new set of supporting regulations had been set up to replace the repealed ones. The result was that, in the absence of Schedules and regulations, the entire regulatory structure relating to medicines and the control of medicines had been rendered unworkable by the promulgation of the 1998 Act. The Constitutional Court found that the act of bringing into operation the 1998 Act in these circumstances was irrational, not rationally related to the purpose for which the power had been given, and violated the rule of law.

(3) The amount of the compensation and the time and manner of payment must be just and equitable, reflecting an equitable balance between the public interest and the interests of those affected, having regard to all relevant circumstances, including—
(a) the current use of the property;
(b) the history of the acquisition and use of the property;
(c) the market value of the property;
(d) the extent of direct state investment and subsidy in the acquisition and beneficial capital improvement of the property; and
(e) the purpose of the expropriation.
(4) For the purposes of this section—
(a) the public interest includes the nation's commitment to land reform, and to reforms to bring about equitable access to all South Africa's natural resources; and
(b) property is not limited to land.
(5) The state must take reasonable legislative and other measures, within its available resources, to foster conditions which enable citizens to gain access to land on an equitable basis.
(6) A person or community whose tenure of land is legally insecure as a result of past racially discriminatory laws or practices is entitled, to the extent provided by an Act of Parliament, either to tenure which is legally secure or to comparable redress.
(7) A person or community dispossessed of property after 19 June 1913 as a result of past racially discriminatory laws or practices is entitled, to the extent provided by an Act of Parliament, either to restitution of that property or to equitable redress.
(8) No provision of this section may impede the state from taking legislative and other measures to achieve land, water and related reform, in order to redress the results of past racial discrimination, provided that any departure from the provisions of this section is in accordance with the provisions of section 36(1).
(9) Parliament must enact the legislation referred to in subsection (6).

In the *First National Bank* decision,[90] the Constitutional Court set out the structure of analysis for direct application of the property clause in the form of a set of questions, as follows:

- Does the law or conduct complained of affect "property" as understood by section 25?
- Has there been a deprivation of the property by the law or conduct?
- If there has, is the deprivation consistent with the provisions of section 25(1)?
- If not, is the deprivation justified under section 36 of their Constitution?
- If it is, does it amount to an expropriation in accordance with section 25(2)?
- If so, does the deprivation comply with the requirements of section 25(2)(a) and (b)?
- If not, is the expropriation justified under section 36?

For the reasons set out below, Vodacom contends that there are two potential areas in which its rights to property have been infringed: in its use of the spectrum allocated to it; and in the requirement that it must provide access to all aspects of its network on cost-based terms. We discuss these two issues in turn.

8.3.2 Interference with Vodacom's Rights to Spectrum as an Arbitrary Deprivation

The Bill envisages radical interference with Vodacom's existing valuable spectrum rights. Current exclusive rights to licensed spectrum constitute constitutionally protected "property" for purposes of

[90] *First National Bank of SA Ltd t/a Wesbank v Commissioner, South African Revenue Service and Another; First National Bank of SA Ltd t/a Wesbank v Minister of Finance* 2002 (4) SA 768 (CC) ("***First National Bank***") at para 46 (emphasis added).

protection under the property clause of the Constitution, consistent with the assessment of the content of the concept of property by the Constitutional Court.[91]

The Bill envisages three kinds of interference with existing valuable spectrum rights –

- the prospect of having High Demand Spectrum completely removed, even before the expiry of the current spectrum licences, and "returned" for acquisition by the WOAN;

- the loss of exclusive rights in and to the spectrum and the obligation to share the spectrum on an undefined "open access" basis; and

- the removal of the expectation of renewal of the licence in line with international best practice and invariable historical practice, as long as its conditions remain fulfilled and the relevant fees are paid.

Each of these instances of interference constitutes "substantial interference" with the existing use and enjoyment of spectrum as to amount to "deprivation" of property in line with the tests for this term accepted by the Constitutional Court.[92]

For such deprivation to be constitutional, it must not be "arbitrary", lest it violate section 25(1) of the Constitution.[93]

The test for arbitrariness depends on the importance of the property deprived. When it comes to spectrum, the degree of deprivation is significant, and the nature of the property at issue lies at the core of the functioning of the whole ICT sector, which is fundamental to the realisation of open democracy, a foundational constitutional value. Accordingly, the property lies close to the heart of constitutional values, which means that, for the deprivation to be "non-arbitrary", it must occur with "sufficient reason" such that there is a proportional relationship between the objects and the means chosen – the means chosen must not disproportionally interfere with the property to achieve the objects sought to be achieved.[94]

In the instant case, the arbitrariness test is failed. Even if the test were one of mere rationality, the test for arbitrariness applicable when the property at issue is less closely related to constitutional values, the rationality test is failed in important respects. Examples of the respects in which the Bill is arbitrary are set out in section 8.1.2 above, and are not repeated here. But because the Bill entails a deprivation of property in circumstances where this lies close to the heart of constitutional values, the requirements to pass muster for arbitrariness are stricter – i.e. less irrationality is required to strike down the law than when considered merely from the viewpoint of legality. The required proportionality between means and ends – objective and means chosen - is entirely absent.

For these reasons, the interference with Vodacom's spectrum rights amounts to an arbitrary deprivation of property, which violates Vodacom's property rights which are protected under section 25(1) of the Constitution. Moreover, this violation is not justifiable under section 36 of the Constitution – principally because the Bill will not satisfy the requirement that it is the least restrictive means to

[91] In *Shoprite Checkers (Pty) Ltd v MEC for Economic Development, Eastern Cape & Others* 2015 (6) SA 125 (CC) ("***Shoprite Checkers***") at paras 37-70, the Court held that a commercial trading licence which allows for the selling of wine in a grocery store constituted "property" as defined in section 25 of the Constitution.
[92] See in particular *FNB* (above) at para 57, *Mkontwana v Nelson Mandela Metropolitan Municipality & Another* 2005 (1) SA 530 (CC) at paras 32 and 45, and *Shoprite Checkers* (above) at paras 73-76.
[93] The deprivation must also be in terms of a "*law of general application*", but we accept that the Bill, if enacted, would constitute a law of general application.
[94] See in particular *Shoprite Checkers* (above) at para 21.

achieve its purpose.[95] For these reasons, the Bill, if enacted, would be susceptible to being declared unconstitutional as amounting to an arbitrary deprivation of property rights.

8.3.3 Interference with Vodacom's Rights to Spectrum as an Expropriation

Even if Vodacom is incorrect in its submission that the deprivation of property is arbitrary, the deprivation of Vodacom's property rights can be said to amount to an expropriation under section 25(2) of the Constitution.

When property is taken over by the state, typically to be utilised for a public purpose, such property is expropriated as understood in section 25(2) of the Constitution.[96]

The "return" of high demand spectrum to the Authority, and its acquisition by the WOAN, amounts to expropriation, as the WOAN is effectively an organ of state, namely a statutory vehicle created compulsorily to acquire and to house and exploit spectrum.

Such expropriation would be subject to the obligation to pay appropriate compensation, in terms of section 25(2)(b) of the Constitution.

8.3.4 Interference with Vodacom's Facilities as an Arbitrary Deprivation

Section 43(1) of the Bill provides as follows:

> "*(1) All electronic communications network service licensees must provide wholesale open access to their electronic communications networks and facilities, upon request, to any other person licensed in terms of this Act and persons providing services pursuant to a licence exemption in accordance with the terms and conditions of a wholesale open access agreement entered into between the parties, in accordance with the general open access principles.*
> *(1A) An electronic communications network service licensee that is determined a vertically integrated operator by the Authority in the wholesale open access regulations must, in addition to the requirement in subsection (1), do accounting separation.*
> *(1B) An electronic communications network service licensee that is determined a deemed entity by the Authority in the wholesale open access regulations must, in addition to the requirement in subsection (1), comply with the following open access principles on its electronic communications network:*
> *(a) active infrastructure sharing that includes but not limited to national roaming, radio access network sharing and enabling mobile virtual network operators, for voice and data based on the latest generation of technologies;*
> *(b) cost-based pricing;*
> *(c) access to its electronic communications network or electronic communications facilities as prescribed by Authority; and*
> *(d) specific network and population coverage targets.*"

Hence, licensees may be obliged to make their facilities comprising the whole of their networks available on a wholesale basis, on the basis of "cost-based pricing".

[95] Section 36 of the Constitution, contains a general limitations clause which allows any limitation of a right in the Bill of Rights (which would include section 25), to be justified if the limitation is considered "*reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom, taking into account all relevant factors*".

[96] See *Agri SA v Minister for Minerals and Energy* 2013 (4) SA 1 (CC) at paras 67 and 68.

Given the radical invasion of erstwhile property rights over the range of an operator's network discussed in section 6.2 above, especially on the basis that access is to be "cost-based", the degree of interference is sufficient to amount to deprivation of property.

Such deprivation is arbitrary for the following main reasons:

- The thresholds for determining an obligation to share facilities are entirely arbitrary, based on share of facilities held, and counter-intuitively low, such that there is an entirely arbitrary link between possession of a market share of this threshold and possessing market power, the characteristic the threshold is ostensibly intended to capture. The determination whether a particular licensee possesses significant market power or not should rationally depend on an analysis of the competitive dynamics of the market, and an arbitrary assumption of the existence of market power based on an arbitrary and low market share threshold is an irrational means of capturing market power as a reality, the effects of which would be to undermine, rather than to further, access, efficient exploitation and competition, the objects sought to be achieved.

- The concept and mechanics of open access, although legislated, are left entirely vague.

- Making the obligations apply even if the request is unreasonable is irrational.

- Extending the obligations beyond even the markets in relation to which the operator is a deemed entity makes no sense at all and exacerbates the arbitrariness in the deprivation.

For these reasons, therefore the requirement of cost-based open wholesale access would amount to an arbitrary deprivation of Vodacom's property rights in its facilities.