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MEDIA BRIEFING PAPER

SUMMARY OF FMF SEIA

Socio-Economic Impact Assessment (SEIA)

SA Government Radio Spectrum Policy

Produced as a Public Service

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The key message of this study is that regulatory failure and political ideology have deprived South African consumers of better coverage, higher efficiency and lower prices.

Why do data and spectrum matter?

The mobile telecommunications industry is the backbone of the economy. Mobile data powers cell phones, laptops, tablets, the internet and more. The daily life of every citizen is affected and enhanced by mobile communications. This industry is arguably post-apartheid's greatest success story.

The *#datamustfall* movement highlighted the vital role played by this industry in every sphere of life, including education, entertainment, commerce, travel, healthcare and general communications. Everyone wants data at lower prices.

Spectrum is the collective term for radio frequency "bands" that deliver data services. Spectrum is the mobile communications industry's essential resource.

The Covid-19 lockdown brought the importance of mobile communications into sharp relief when people were forced to stay and work from home. Without the huge investment in private infrastructure of mobile network operators (MNOs), lockdown would have been calamitous.

Why then did government effectively throttle the industry by its failure to release spectrum since 2005 and compound its failed implementation of "digital migration"? What is the rationale behind the wireless open access network (WOAN)? Is it necessary or a political artefact to create yet another failed state-owned entity (SOE) and opportunities for patronage and wasteful "rent seeking"? WOANs have not succeeded anywhere.

Background

The FMF's Socio-Economic Impact Assessment (SEIA) analyses South Africa's mobile telecommunication policy and its impact on consumers. Since mobile services were launched in 1994, the same year as democratic South Africa, the telecommunications sector has been transformed radically. The introduction of post-paid voice contracts in urban areas to today's mass market was astonishingly fast. The game-changer was when an offering thought to be for a few affluent urban consumers became affordable to everybody virtually overnight.

Technological and commercial innovation throughout the value chain is a response to demand. Fixed telecommunication services were provided for elites by overstaffed and sclerotic public monopolies. Even in upper-middle income countries like South Africa or Brazil, fixed-line penetration never surpassed a small percentage of households.

Spectrum regulation was not a serious issue when the first mobile operators entered the market. Voice services require little bandwidth. MNOs could easily increase coverage and densify in urban areas. Matters changed when internet services, or more generally, content, had to be accessible to almost everyone.

At the outset of the millennium, data demand in low- and lower-middle-income countries was miniscule, but it was understood that this would change quickly. In 2004 and 2005, MTN and Vodacom received spectrum in the 1.8 and 2.1 GHz bands to roll out 3G. That was the last time the two that serve 75% of South Africans received spectrum. The third MNO, Cell C (2001) received its last spectrum in the 2.1 GHz band in 2011, thus on par with the two market leaders. In the ensuing ten years, Telkom, Liquid (formerly Neotel) and Rain (formerly iBurst/WBS) entered the mobile market, in direct competition for consumers or as wholesale providers offering network capacity to other operators.

Since 2005, mobile technologies, end-user devices, and complementary technologies evolved rapidly. Mobile broadband became the key medium to the internet for billions of people demanding ever-higher bandwidth and traffic speeds. From a socio-economic perspective, the provision of

mobile broadband in rural areas has proven to be particularly important because most countries did not have much fixed copper coverage and fibre networks are too costly. Mobile 3G technologies filled the gap. It became apparent that the 1.8, 2.1 and 2.3 GHz frequencies are uneconomical for 3G and 4G in sparsely populated areas. Networks using high frequencies require high density infrastructure. Even in rich countries, investments for 2 GHz and higher frequencies cannot be funded by rural customers.

Low frequency LTE/4G between 700 and 800 MHz largely solves this problem. Compared with 4G (in the 1.8 and 2.3 GHz frequency range), the same LTE-800 area reduces the cost rollout by half to two-thirds. LTE-800 can also be used in urban areas for carrier aggregation. Higher spectral efficiency associated with, for example, 800 MHz and 2.6 GHz, accommodates higher data rates in urban areas with the same infrastructure.

The prohibitive SA problem has been that spectrum in low frequency bands (below 862 MHz) were occupied by analogue TV. Digitization makes significantly better TV signal transmission rates with higher quality possible below 600 MHz.

Migrating TV to lower frequencies requires skilful coordination. All members of the International Telecommunication Union (ITU) agreed to the completion of TV digital migration by 2015. By reassigning 700/800 MHz spectrum to mobile telecommunication, networks could be cheaper and help bridge the digital divide. This is termed “digital dividend” because of its substantial rural population benefits.

SA also committed to end analogue TV in 2015. The Department of Communications and Digital Technologies (DCDT), then Department of Communications (DOC), announced that it would switch off the signal by 1 November 2011, which would have made South Africa a world leader. A decade later, it remains unclear when digital migration will be completed. Experts estimate that 700/800 MHz spectrum will not be used nationwide before 2023. Government failure impacts especially low-income consumers through poor coverage, higher prices, reduced productivity and impaired educational opportunities.

The SEIA study provides an overview of mobile sector regulation emphasising spectrum assignment. It shows that, due to a misguided understanding of “spectrum” as a scarce resource and ideologically flawed conceptions of “competition”, interventions have violated economic theory and misconceived telecommunications market processes. In an increasingly sophisticated market with rapid technological progress, the regulator lost its coordinating function and—not only in South Africa—has become a development obstacle.

This study concludes that restrictive controls failed over the past decade, resulting in needless consumer costs. Whilst other countries have been using LTE-800 and carrier aggregation for five years or more, SA remains years away. Instead of making resources worth hundreds of billions to government and the market available, spectrum gathered dust, and sub-1GHz spectrum remains occupied by analogue TV.

Had spectrum trade been lawful, TV digitization would have long been completed, for the obvious reason that the value of spectrum in the digital dividend band is a multiple of the comparatively insubstantial cost of migrating.

The key message of this study is that regulatory failure and political ideology have deprived South African consumers of better coverage and lower prices.

The FMF has addressed two main issues:

- The **Competition Commission's** (CompCom) 2020 data services market enquiry report which was followed by a R22bn loss on MTN and Vodacom share values in one afternoon.
- **ICASA's** spectrum policy supposedly designed to correct falsely defined "market failure".

It also examines the impact of the failure of digital migration and issues surrounding the spectrum auction which have led to the legal action of two key players: MTN and Telkom.

SEIA: SOCIO ECONOMIC IMPACT ASSESSMENT

The FMF arguably has SA's leading competition policy *and* SEIA expertise.

What makes the FMF uniquely qualified is that it introduced the SEIA concept to SA after intensive global research and assisted the government with implementation. Although obligatory, most officials and politicians overlook the need for SEIAs. Those which have been produced have often been due to FMF's agitation. More seriously, almost all reflected the fact that none of those responsible have a sophisticated understanding of the concept.

The FMF SEIA covers technological shortcomings, especially in the CC's report. These are known to experts, but not internalised by either the CC or ICASA. An important aspect of the SEIA is that it explains competition economics as it has not been done in SA hitherto. It critiques one of the most insidious myths that there is more competition when there are more competitors. That the degree of real world competition is determined by (Baumol) market contestability, not contestants, is explained. It is pointed out that "market share" myths want firms to compete, but not win.

Under contestable conditions, such as there have been since the advent of our mobile market, increased market share should be appreciated as evidence of virtue not vice in that it indicates the extent to which a competitor satisfies consumers more than rivals.

The SEIA addresses the WOAN concept. Whereas MNOs initially resisted it completely as unworkable "nationalisation", most reconciled themselves with the diluted idea of a seventh (wholesale) MNO. The SEIA explains why "chunks" should not be "small". This is acknowledged by the CSIR, yet the idea of carving spectrum into "chunks" endures. It is pointed out that there is already a market-created WOAN so that the argument for the original concept has fallen away.

The SEIA takes no position on how best to auction spectrum postponed from 31 March. It points out that initial allocation is less important than tradability (the "Coase Theorem"). Contrary to crude competition theory, the SEIA explains why market cooperation should be allowed rather than dismissed as "collusion", and why the "duopoly", if it exists, is not necessarily anti-consumer.

These are the SEIA's highlights. It addresses the five key questions below and points out that, far from Vodacom and MTN being castigated, they should be venerated. What MTN and Vodacom achieved is astounding. The mobile market, despite the government regulation and spectrum throttling, is arguably SA's greatest post-apartheid accomplishment. However, a continuation of the policy of withholding spectrum from the two leading carriers and further interventions in the market such as the WOAN artefact, has the potential to jeopardise what has been achieved and deny SA consumers the benefits that the future of mobile telecommunications offers.

SEIA HIGHLIGHTS

- 15 years of spectrum withholding harmed and still harms consumers, particularly rural and low-income urban populations.
- The failure to complete digital migration means that even after an auction in March 2021, carriers will be unable to use 700 and 800 MHz digital dividend spectrum until 2023.
- Consumers will still be denied affordable rural broadband and pay for costly urban infrastructure. Consumers will not reap the digital dividend of rural LTE-800 at much lower cost and carrier aggregation in dense areas.
- Spectrum withholding and failed digital migration are compounded by misguided competition policies and regulatory interventions which distort the market, create investment uncertainty, and encourage market laggards to capture "rents" they are unable to earn by competing. The government needs a culture of evidence-based policy and shed ideology-based policy, such as ideas of 100% broadband penetration, irrational sharing, "open" access, or non-discriminatory pricing at odds with market reality.
- Market reality is that the spectrum crunch suffered by MTN and Vodacom and the recapitalization of ailing entities that became Liquid Telecom and Rain paved the way for a market-driven WOAN. The difference between it and a government WOAN is that the arm's length "roaming" agreements (contractual joint utilization of resources) have been achieved without compromising property rights or coercive "incentives".
- Considering that Cell C is roaming on MTN's network (morphing into an MVNO) and that Telkom is roaming on Vodacom's network, the market has been moving towards a "shared" network for the benefit of consumers. Even if it once did, SA no longer needs a WOAN artefact imposed coercively on the sector.

Regulatory paralysis imposed enormous opportunity costs on ordinary citizens. Further developments should now be left to freely interacting market players who understand what they are doing and have "skin in the game".

With six competing mobile operators and the upcoming spectrum auction, conditions for industry development are in place. When digital migration is completed, the industry will be well-positioned to narrow the digital divide by rolling out affordable rural LTE networks and reduce urban data prices through carrier aggregation and spectrum sharing.

These two socio-economic goals must not be impeded by such interventions as a government WOAN artefact for which there is neither theoretical nor proven market evidence. 5G networks that will open the world of IoT services will force governments to deregulate spectrum. Spectrum will become like any other resource. Spectrum utilization will be driven by consumer needs and technology.

This will conclude misleading public narratives. The notion that market-based intermediation in general, and spectrum, in particular, are prone to "market failure" is unfounded. It is not supported by technological facts, historical evidence or economic theory. As "the market" for regulatory narratives needs "willing buyers", it should be asked who benefits from promoting such narratives?

FIVE KEY SEIA QUESTIONS

1. Do technological facts, historical experience, or economic theory suggest that spectrum has characteristics that require public ownership or special regulation?
2. Have the spectrum policies, for which the DCDT and ICASA are responsible, created the conditions conducive to the government's socio-economic goals mentioned above?

3. Does competition regulation strike an optimal balance between creating a favourable environment for existing mobile players and keeping the market open for entry; is it guided by pro-consumer evidence-based policy?
4. Is the assignment of emergency spectrum with the March (postponed) auction likely to end counter-productive policies?
5. Is the inflexible exclusive assignment of spectrum fit for massive increases in data demand and cutting-edge 5G/IoT innovations?

The SEIA finds that the answer to all five questions is - No.

End.

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