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DISRUPTIVE TECHNOLOGIES IN TELECOMMUNICATIONS, BROADCASTING AND TRANSPORT SECTORS

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Abstract

This paper seeks to provide the Competition Commission of South Africa with a comprehensive discussion regarding the recent developments and competition dynamics in three sectors affected by the entry of disruptive technologies in South Africa and globally. The move towards the use of Over-The-Top technologies and shared economy services as well as the gradual displacement of traditional telecommunications, broadcasting and metered taxi services has brought to light critical competition and regulatory questions that both competition authorities and industry regulators as well as policy makers ought to consider going forward. As a result of the entry of these disruptive technologies, traditional service providers have launched a series of complaints requesting regulatory bodies to intervene and establish a level-playing field between all players. This study also outlines the regulatory challenges and competition concerns that may arise as new market entrants (disruptive technologies) continue to aggressively compete with traditional service providers.

Keywords: *Disruptive technologies, Over-the-top technologies, shared economy*

JEL Classification: L40, L41, L42, L43

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EXECUTIVE SUMMARY

Reasons for undertaking this study?

This paper seeks to provide an overview of the developments in the Information and Communications Technology (“ICT”) and Transport sectors, specifically the operational and competition dynamics that arise in industries that are affected by the introduction of disruptive technologies. In particular, this study will focus on disruptive technologies in the telecommunication, broadcasting and transport sectors.

The ICT sector is a priority sector for the Competition Commission (“the Commission”) and the dynamic developments observed in this sector in recent years necessitate that the Commission must continuously monitor any changes in the competitive landscape and regulatory framework that may have an impact on competition enforcement. The move towards the use of Over-The-Top (“OTT”) technologies and the gradual displacement of traditional voice telecommunication services raises critical competition and regulatory questions, particularly insofar as the competitive implications of the entry of these technologies (relative to traditional service providers) are concerned. Similarly, Uber, as the most prominent online-enabled car transportation service, has received a significant amount of attention in the media and raises similar questions.

This paper provides an overview of the growth of OTT and shared economy services in South Africa and a summation of the debates, which are founded on competition arguments; that have called for and against the regulation of these services. It also looks to the international experiences by other regulatory bodies and provides their views regarding the competition concerns that may arise as a result of the growth in disruptive technologies.

What are disruptive technologies?

Disruptive technologies are new technologies that significantly alter the way businesses and industries operate. The introduction of a disruptive technology in any market may force traditional businesses to alter the way that they approach their business, risk losing market share or risk becoming irrelevant. The increase in new technologies globally is disrupting competition in a number of traditional markets.

For example, SMS services provided by mobile operators have largely been replaced by WhatsApp messaging and it is noteworthy that voice calls using the same platform are also in their nascent stage in South Africa. Similarly in the pay-tv market, Netflix and Showmax, commonly known as Video-on-Demand (“VoD”), have disrupted traditional means of consuming audio-visual content and enabled consumers to view content online without a need to purchase and install a satellite dish and a set-up box. In the metered taxi industry, Uber has disrupted the traditional business model used and successfully gained a significant market share in a short period of time.

Notably, social networks and VoDs both need internet connection to deliver their content or run their applications. These services are generally provided on the internet connectivity infrastructure of other

service providers who are usually not related or not in a business relationship with the OTTs. Amid on-going concerns regarding an imbalanced regulatory framework, market studies have shown that using OTT services are more affordable for a vast majority of consumers when compared to voice and text messages. Currently, a voice call that lasts for many minutes may not use up even a single megabyte (“MB”) of data when same is conducted through an OTT service, for example. Also, a large number of text messages on an OTT platform can be sent using one MB of data. However, a voice call per minute or an SMS frequently costs more than a MB of data. From this, it is clear that OTT services are more cost effective than traditional messaging and telephony.

Globally, the transport sector has been disrupted by the entrance of shared economy or ride-sharing transport service providers like Uber, Lyft and Sidecar. The emergence of such firms threatens to reduce metered taxis’ participation in the provision of private taxi services. These shared economy service providers are efficient and rely on a smartphone application that uses the customer’s smartphone to detect their specific location using the Global Positioning System (“GPS”), and instantly connects the customer to the nearest available driver. By using location detection, customers easily connect with the nearest driver in a short period of time. This innovation is therefore attractive to consumers as it leads to shorter waiting and travel times, thus rendering the service more reliable than traditional metered taxis.

What are the major concerns that prompted calls for regulation of OTT services and uber?

The popularity of OTT and shared economy services in South Africa has resulted in the traditional service providers calling for the regulation of these services. The core argument from the mobile network operators (“MNOs”) appears to focus on the suggestion that OTT service providers use infrastructure which they do not pay for (and have not invested in), and that they are “free-riding” on the costly infrastructure built by mobile operators. This is especially a concern for MNOs as consumers are increasingly replacing mobile voice and SMS services with OTT services. The decrease in traditional voice revenues may be a direct effect of the reduced need for voice calls as consumers find it efficient to send texts and make App calls on OTT platforms. There has not been much noise about the regulation of OTT services in the broadcasting sector. This might be due to the fact that consumers in South Africa currently view VoD services as complementary to pay-tv.

The entry of Uber into the local taxi industry was met with hostile challenges by traditional metered taxi service providers who argued that Uber was not subjected to regulation in the same way as metered taxis. Globally, allegations of unfair competition practices have been levelled against Uber in several cities such as Washington, Paris, Mexico City, Lisbon in Portugal, Bandung in Indonesia and Cape Town in South Africa, amongst others.

The regulation of disruptive technologies brings with it complications in respect of the competition and regulatory enforcement, particularly in relation to market definition in antitrust proceedings. It is important to note that while these disruptive technologies may seem to be substitutable from an end-user perspective (e.g. WhatsApp messaging and SMS), the services are not delivered to the end-user using

similar platforms, and the cost considerations also differ significantly. This means that while from a demand side perspective, two services may be substitutable; they may not be substitutable from a supply side perspective. Further, although some online services may be used for similar purposes as the corresponding traditional services, regulatory regimes are also not necessarily aligned.

What are the competition concerns that may arise from affected industries?

As disruptive technologies become popular and increasingly compete with traditional service providers, there may be potential competition concerns that could arise. For example, “refusal to access” might feature in an encounter between OTTs and MNOs. Mobile and fixed line networks could attempt to deny access or provide access on terms and conditions (e.g. quality of service) which prevents OTT service providers from competing effectively in the market. As a result of such potential concerns, regulators internationally have introduced the concept of a net-neutrality policy. The South African government is currently considering the introduction of a similar policy framework. Other potential competition issues that could arise include predatory pricing, horizontal and vertical integration, and exclusive dealing.

What are the proposed recommendations?

The recent entry of disruptive technologies in the broader ICT and shared economy sectors has changed the scope of competition in these sectors. The concomitant consumer welfare enhancing benefits, which must be encouraged and preserved, and the uneven regulatory environment that this has brought about necessitates a balance between a fair and equitable regulatory regime while maintaining these pro-competition outcomes.

This requires that sector regulators must be mindful of the fact that a blanket approach to regulation cannot be adopted. In the case of OTT services, for example, the online service providers are content providers whereas the traditional operators are active in the network and therefore subject to rules relating to access. While these technologies are at present new, even on a global scale, regulators are aware that it is possible that they may overtake traditional services in the not too distant future given the increasing demand for these technologies. Therefore there is a need for considering a tailored regulatory framework that takes into account the nuances of these specific technologies.

In designing this framework, there is a need to appreciate the consumer benefits that arise from the introduction of these technologies and therefore the regulatory framework must balance the need for a fair and equitable regulatory regime but also ensure that they are encouraged. Perhaps a light handed approach to regulation may be better in order to be sensitive to the nascent stage at which these technologies are and also to allow for innovation.

The foregoing notwithstanding, there are potential competition concerns that may arise in future and the Commission must keenly watch these. Already there are indications of potential bundling and diversification into other markets, such as Uber entering the food delivery market and WhatsApp offering voice calling. There are also complaints with regards to the pricing of Uber, the most prominent being the

on-going price fixing cartel litigation in the United States. As a result, the role of advocacy in sensitizing such disruptive firms of the potential competition concerns that could arise in the long-run cannot be overstated. Similarly, advocacy must extend to industry regulators to sensitize them of the benefits of designing a pro-competitive regulatory environment in relation to these disruptive technologies. Further, competition authorities can use other tools at their disposal, such as market studies, in order to continuously monitor developments in these markets in order to better understand and appreciate the competitive dynamics therein.

INTRODUCTION

Disruptive technologies are new technologies that disrupt industries and transform business models. A disruptive technology can also be described as an innovation that displaces an established technology and shakes up the industry. The increase in new technologies globally is disrupting competition in a number of traditional markets. In the ICT sector, OTT¹ services such as WhatsApp, Skype and Facebook are examples of disruptive technologies as they have changed the way in which telecommunication services have operated traditionally. As an example, in recent years, SMS services provided by mobile operators have largely been replaced by WhatsApp messaging and voice calls using the same platform are in their nascent stage. Similarly in the pay-tv market, Netflix and Showmax have disrupted traditional means of consuming audio-visual content.

With fast growing supply and access to the internet, media and telecommunications companies have made significant inroads in the various aspects of the internet including; social networking, on-line shopping, the sharing economy (such as Uber), advertising, and content creation and distribution. Suppliers of these services enter the market with unique offerings or business models which quickly shake up the industry and displace existing traditional services. Uber is an example of a service that has recently entered the transport industry and is quickly displacing traditional metered taxis. This has been made possible through on-going innovation, growth in internet penetration and the growth in the usage of smartphones.

South Africa, in line with global trends, has also been impacted by the development of these disruptive technologies. It is estimated that by July 2016, South Africa will have an internet penetration of 52%.² In 2014, it was found that the majority of internet users (81.6%) in South Africa use smartphones to access the internet.³ However, fixed broadband penetration is very low (at approximately 5%)⁴ and internet access is still unaffordable to the broader populace. As such, although disruptive technologies that are offered using mobile broadband (such as Uber and WhatsApp) have become very popular in South Africa and they have had an impact in their respective markets, the penetration of these services has not reached its full potential yet. For example, Uber services in South Africa are limited to only some of the larger cities. In addition, certain disruptive technologies that require large amounts of data, typically through fixed broadband access, (such as Netflix) have only started entering South Africa now⁵.

¹ The Body of European Regulators for Electronic Communications (BEREC) defines OTT services as “a service or an application that is provided to the end user over the open internet”. This means that the term OTT does not refer to a particular type of service but to a method of provision, namely provision over the open internet. This service is generally provided independent of the internet access provider.

² According to Internet Live Stats that uses data from International Telecommunication Union (ITU), World Bank, and The United Nations Population Division, accessed on 18 May 2016 from <http://www.internetlivestats.com/internet-users/south-africa/>.

³ Memeburn Tech-savvy insight and analysis accessed on 18 May 2016 from <http://memeburn.com/2014/08/16-graphs-that-shed-new-light-on-the-south-african-smartphone-space/>

⁴ South African Communications Forum, 2016, *Industry briefing on OTT services in South Africa*, presentation to the Parliament Portfolio Committee on Telecommunications and Postal Services.

⁵ Netflix entered South Africa in 2016.

However, as broadband access increases in line with South Africa's broadband policy, OTT services are expected to grow and this will have an effect on more industries.

As disruptive technologies grow and change the manner in which traditional industries operate, competition authorities and regulators globally need to better understand the implications this has for competition in an industry. Disruptive technologies are difficult to regulate due to the fact that they are a new innovation, they usually create their own niche segment and they have never been regulated before. Regulators are continuously confronted by questions like: how to make good decisions in the fast paced environment, how do legal and regulatory frameworks apply and keep pace, and how to create a landscape that fosters innovation? This debate has already begun in South Africa with the recent parliamentary submissions on the regulation of OTT services⁶ and Uber.⁷

This paper seeks to understand the operational and competition dynamics that arise in industries that are affected by the introduction of disruptive technologies. Specifically, this paper will focus on disruptive technologies in the telecommunication, broadcasting and transport sectors. The ICT sector is a priority for the Commission and as such it is important to study the impact of OTT services in this sector as well as any changes in the regulatory framework that may have an impact on competition policy. Uber has received a significant amount of attention in the media and Cabinet recently approved the amendment of the National Land Transport Act to allow for Uber taxi operators to obtain licences and operate as metered taxi operators. The amendment of the law will result in a shift in the industry and this may have competition implications. It is therefore important for the Commission to keep abreast of the changes in this regard.

This study begins by providing a literature review on disruptive technologies in general. This is followed by a discussion on the growth of OTT and Uber services in South Africa as well as the parliamentary debates which have called for and against the regulation of these services. Section 4 provides an overview of the arguments for and against the regulation of disruptive technologies in South Africa and internationally. The section also discusses the extent to which the regulatory framework allows for a level playing field between these various services. Section 5 provides a discussion of what other regulatory bodies have done as well as the competition concerns that may arise as a result of the growth in disruptive technologies. Section 6 concludes.

LITERATURE REVIEW

⁶ In January 2016, Parliament held a hearing on the calls for regulation of OTT services. The hearing included representatives such as telecommunications and broadcast policy experts, mobile network providers, OTT service providers, internet service providers, the ICASA and DTSPS officials. Arguments for and against the regulation of OTT services were presented.

⁷ In September 2015, the National Transport Department submitted to Parliament the possibility of amending the National Land Transport Act in order to cater for internet based ride-sharing services such as Uber. In March 2016, Cabinet approved the National Land Transport Amendment Bill to allow Uber taxi operators to be considered as metered taxi operators. This means that Uber taxi operators would need to obtain metered taxi licenses.

Adner (2002) describes disruptive technologies as technologies that introduce a different performance package from mainstream technologies and are inferior to mainstream technologies along the dimensions of performance that are most important to mainstream customers⁸. On the other hand, Christensen (1997) define sustaining technologies as technologies that foster improved product performance. Sustaining technologies only seek to improve product performance which does not alter markets (as disruptive technologies do) and they enhance and improve existing products as requested by users⁹. The Organisation for Economic Co-Operation and Development (“OECD”) defines disruptive innovations as breakthroughs that introduce irregular and unforeseen radical changes, whether products or manufacturing processes or business models, to markets.

It is almost impossible to identify a disruptive technology in advance because of its confounding characteristics. Disruptive technologies are usually only identified after their effects are known and the benefit is seen with hindsight¹⁰. Christensen (1997) lists the following characteristics of disruptive technologies:

- Disruptive technologies are cheaper when procuring and implementing the product.
- Disruptive technologies are simpler to ensure that the consumer will be able to use the technology without intensive training.
- Disruptive technology usually does not propose greater profits but it would add value to lower margins.
- Risks are always involved when implementing disruptive technologies because of the nature of unpredictability.

It is largely accepted that disruptive technologies, in their early developmental stage, only serve a niche segment that values its particular offering. This offering may be seen as inferior to the established technology initially.¹¹ However, disruptive technologies have a potential to create a new marketplace and as a result make other industries redundant.¹² As disruptive technologies mature, their performance improves and they swiftly alter industry boundaries by displacing established technologies from the mainstream segment. Some stay in their niche, while others go all the way to penetrate the mainstream segment and compete with incumbent technologies¹³. For example, when WhatsApp was first launched, it only offered a messaging service; however, with time it started offering voice services and therefore it started competing with the established service (mobile voice services).

⁸ Christensen, C. 1997. *The Innovator's Dilemma*. Boston, MA: Harvard Business School Press.

⁹ Walsh, S and Kirchhoff, B. 2000. *Differentiating market strategies for Disruptive technologies*. *IEEE transactions on engineering management*. Vol 49, no 4.

¹⁰ Jones, S and Smith R. (2005). Disruptive Technology: recognizing and coping with the inevitable. *Metalworking Production Annual Review*, vol 149, no 2007/5, p 19-20.

¹¹ Jones, S and Smith R. (2005). Disruptive Technology: recognizing and coping with the inevitable. *Metalworking Production Annual Review*, vol 149, no 2007/5, p 19-20.

¹² Tsui, E. 2001. Technologies for Personal and Peer-to peer (P2P) knowledge Management. *CSC Leading Edge Forum (LEF) Technology Grant report*.

¹³ Adner R, and Zemsky P,B. 2003. Disruptive technologies and the emergence of competition.

Disruption is likely to occur when the new technology penetrates the mainstream market and competes head-on with the established technology, despite its inferior performance on focal attributes of mainstream technology¹⁴. At this stage of rivalry, the incumbent firms are asked to react appropriately to defend their position. At this early stage of rivalry, the incumbent firm needs to make a decision whether to retaliate by investing in new technology or to strengthen its existing process and technology. Managers are expected to make good investment judgments for the benefit and survival of the firm given that this is a “static movement” and they will only move once.

Christensen (1997) argues that incumbent firms focus on investing in enhancing the focal mainstream performance features of their main customers. Due to the incumbent technology offering superior performance on these focal dimensions, incumbent firms’ investments are directed towards extending existing technology, rather than the (potentially) disruptive technological opportunity. The incumbent has an incentive to ignore disruptive technology, because disruptive technologies initially appeal to the low-end, low-profit portion of the mainstream market. However, disruptive technologies have the potential to change the business landscape quickly and incumbent firms often find it difficult to react timely¹⁵. Organizations can use disruptive technology to maintain a comparative advantage or risk losing business through their reluctance to use the new technology¹⁶.

As much as organizations can realize the importance of investing in a new technology and the role it plays in maintaining a competitive advantage; it, however, imposes a certain degree of risk and implications on the operations of the organization. The dilemma the organization faces is threefold as postulated by Windel:¹⁷ when to invest in the new technologies that could disrupt the organizational operations, when to embrace an endeavour with uncertain results and how to manage uncertainties in terms of development in information technology. Such questions are crucial for progressive operation and survival of the firm.

Reacting to new technologies is particularly challenging when disruptive technologies originate from outside the industry that they affect, also known as an exogenous effect¹⁸. This characteristic conveys the unexpectedness of disruptive technologies and the challenge of predicting how the technology will be used and where it is going to come from. Disruptive technologies generally go beyond improving

¹⁴ Adner, R. (2002). When are technologies disruptive? A demand-based view of the emergence of competition. *Strategic Management Journal*, 23(8), 667-688.

¹⁵ Patki, A. A. (2006). Managing disruptive technologies [innovative technology]. *Engineering Management Journal*, 16(3), 18-19.

¹⁶ Windel, A.C. (2007). The impact of disruptive technologies on the designation organisations within the IT industry in South Africa. Scholarly Paper, University of Pretoria.

¹⁷ Windel, A.C. (2007). The impact of disruptive technologies on the designation organisations within the IT industry in South Africa. Scholarly Paper, University of Pretoria.

¹⁸ Walsh, S and Kirchhoff, B. 2000. *Differentiating market strategies for Disruptive technologies. IEEE transactions on engineering management*. Vol 49, no 4.

existing products and seek to tap unforeseen markets by creating products to solve problems customers do not know that they have and ultimately change the face of the industry¹⁹.

The emergences of disruptive threats are greater when the new technology firms can price discriminate across segments and when they have a low margin cost structure. This is because disruption occurs when a new technology firm pursues a high volume, low price strategy that allows it to break into the primary segment²⁰. The lower the marginal cost of the new technology firm, the more attractive a high volume strategy is and hence the greater the threat of disruption. The OECD (2015) indicates that markets that are susceptible to disruptive technologies are characterized by network effects which lead to a very fast growth phase for the disruptor. By way of example, Uber easily modified its application to expand from offering only Uber cabs to also offering Uber Vans in its service offering, without developing a complete new application. Equally, WhatsApp added the app-call option in the same platform used for messaging and made the two services complementary.

On the other hand, the lower the marginal costs of the established technology firm, the greater their output and hence the lower the scope for new technology firms to increase their volumes by disrupting the primary market. This further depicts that the lower the costs of established technology firms, the wider the latitude of response and the lower the threat of disruption. The size and profits that can be earned from segments of markets serves as a proxy for expansion plans of new technologies. The greater the size of the primary segment the greater the potential to increase volume through disruption, and hence, the greater the threat of disruption.

In terms of benefits to consumers, social welfare increases unambiguously when disruptive technologies compete head on with established technologies because prices for both fall with disruption²¹. This is because social welfare is higher and consumers are better off in the disruptive equilibrium, when two technologies compete for the same consumers in one market, as opposed to isolated equilibrium, when the two technologies are not competing with each other in two separate markets and therefore exposed to two unrelated or separate equilibriums.²² Adner²³ showed that the profits of new technology firms need not increase with disruption because their increased volumes can be offset by increased competition.

Key lessons from the literature review

The key lessons derived from the literature review are as follows:

- Disruptive technologies have a cost-reducing effect, to the benefit of consumers, which could potentially spill over to the traditional or incumbent technologies once the competitive impact of the new technology is felt;

¹⁹ Katyal, N. (2013). Disruptive Technologies and the Law. *Geo. LJ*, 102, 1685.

²⁰ Adner R, and Zemsky P,B. 2003. Disruptive technologies and the emergence of competition.

²¹ Ibid.

²² Ibid.

²³ Ibid.

- Disruptive technologies encourage innovation and improvements to the quality of service provided by the incumbents as they respond to the threat of new competition;
- Disruptive technologies leverage off their initial capabilities to offer an enhanced and innovative but cost-effective alternative to consumers; and
- Cumulatively, the introduction of disruptive technologies is likely to result in higher consumer welfare when these technologies compete head-on with traditional or incumbent technologies.

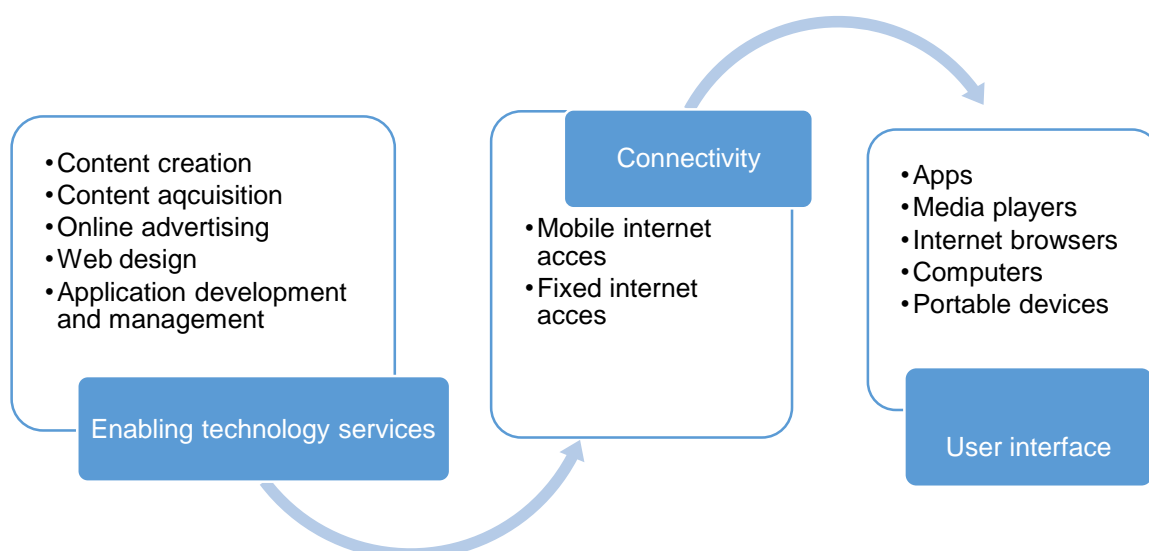
A DESCRIPTION OF OTT SERVICES AND THEIR GROWTH IN SOUTH AFRICA

There are a number of disruptive technologies that have been introduced in the telecommunication and broadcasting sectors globally. This section will provide a description of the disruptive technologies in each of these sectors and their growth in South Africa as well as their impact on the traditional services.

Video on demand (VoD) allows subscribers to watch television content in real time, or download programs and watch them later. The service is delivered over the internet and subscribers can use portable devices like smartphones, tablets, and laptops to view or download content. Facebook, Instagram and WhatsApp are social networking applications that allow users to create profiles and allow them to connect with friends who are also registered with the same application. These applications provide advertising space and pages for online advertising as a source of revenue.

One similarity between these two examples of OTT is that they both need internet connection to deliver their content or run their applications. These services are generally provided over the internet provided by other service providers who are usually not related or not in a business relationship with OTTs. The diagram below presents a summary of the OTT value chain.

Figure 1: The OTT Value chain



Source: Commission's own formulation

Firstly, VoD service providers create, acquire and package content to channels while Facebook, Skype and other networking sites source and incorporate advertisements and pages to their application. OTT

service providers invest in enabling technology services by programming, designing and developing their offerings. Broadband access (either through fixed line or mobile internet) facilitates the consumption of the OTT service offerings. Consumers use various forms of devices and software to view or download content from the OTT service providers.

Growth of OTT services in telecommunications

Social media platform usage has grown explosively in the past few years. In 2016, WhatsApp and Facebook had a subscriber base of over 1 billion users worldwide²⁴. It is undisputed that OTT services provide efficient and affordable ways of communication, as a result; customers have turned to using instant messaging and App calls as opposed to SMSs and voice calls.

Research ICT Africa indicates that mobile internet is expensive (in South Africa and Africa in general) for the poor, but at the same time it is a cost saving tool.²⁵ It is expensive when using full internet including media streaming. Using OTT services instead of voice and text messages is more affordable for consumers.²⁶ A voice call that lasts for many minutes may not use up a single megabyte (“MB”) of data. Also, thousands of text messages can be sent using one MB of data. However, a voice call per minute or an SMS frequently costs more than a MB of data. For example, in February 2016, the lowest average price of a voice call on a prepaid package was R0.66 per minute. During the same time period, a MB of data was R0.20 (for a 50 MB bundle).²⁷

The result of the growth of OTT services is an increase in mobile data demand. The table below shows MTN and Vodacom’s revenues derived from mobile voice, mobile messaging and mobile data over the last 3 years. Telkom Mobile does not present disaggregated information and Cell C does not publish its financial results. As such the study could not incorporate the revenues of these two mobile network operators (“MNOs”).

Table 1: Vodacom and MTN revenues

MNO	Revenue source	2013 (Rand Million)	2014 (Rand Million)	2015 (Rand Million)
Vodacom	Mobile voice	R29 151	R28 135	R25 855
	Mobile messaging	R3 027	R2 675	R2 552
	Mobile data	R8 882	R10 974	R13 538
	TOTAL	R41 060	R41 784	R41 945
MTN	Mobile voice	R22 125	R19 677	R18 739
	Mobile messaging	R2 365	R2 069	R1 922

²⁴ Christoph Stork (2016). OTT-threat or opportunity for African Telcos? ResearchICTAfrica.net.

²⁵ Ibid.

²⁶ Ibid.

²⁷ ICASA (2016), *An analysis of standard prepaid retail voice and data tariffs notified to ICASA for the period 01 April 2015 to 29 February 201*, accessed from <http://www.icasa.org.za>.

	Mobile data	R8 656	R9 264	R12 709
	TOTAL	R33 146	R31 101	R33 370

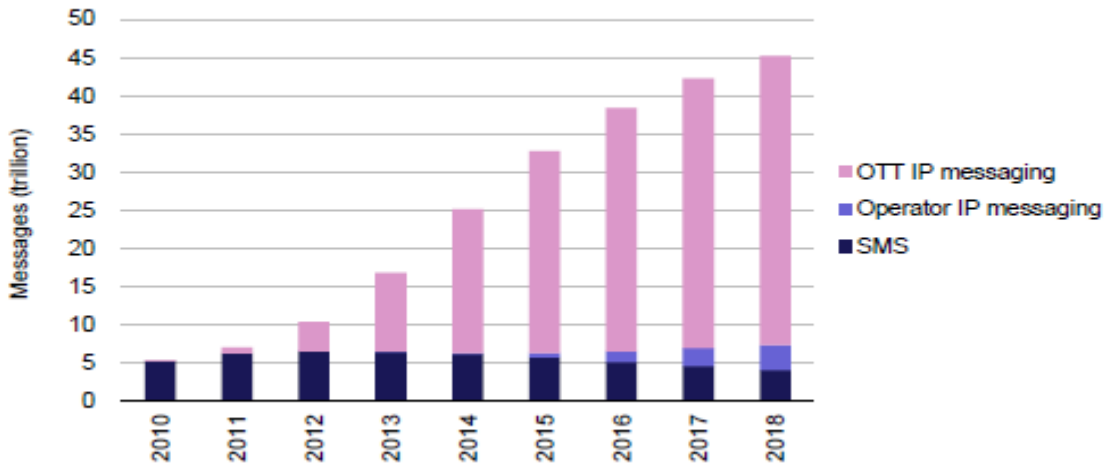
Source: ResearchICTAfrica.net

The table above depicts a sharp increase in demand for data as captured by the increase in data revenue for the two large MNOs in South Africa (Vodacom and MTN). For the 2015 financial year, data revenue contributed 23.8% towards MTN's total revenue derived from voice, SMS and data, while 21.8% of Vodacom's total revenue derived from voice, SMS and data. Conversely, revenues for mobile voice and messaging are declining for both Vodacom and MTN.

The decrease in traditional voice revenues may be a direct effect of the reduced need for voice calls as consumers find it efficient to send texts and make App calls on OTT platforms. The revenue analysis suggests that OTT services present a threat to MNOs traditional source of revenue i.e. mobile voice and messaging. However, OTT services may have resulted in a significant increase in mobile data revenue for the MNOs. Interestingly, total revenue figures have been somewhat consistent over the period.

Figure 2: Global trends in messages sent via mobile handset by service type

Figure 1: Messages sent via mobile handsets by service type, worldwide, 2010–2018 [Source: Analysys Mason, 2014]



Source: Analysys Mason (2014)

The figure above, sourced from Analysys Mason,²⁸ illustrates the global trends in the number of SMSs and OTT messages sent between 2010 and 2014. Notably, OTT services started gaining market traction in 2012. By 2013, the number of OTT messages had already exceeded the number of SMSs sent. The graph also shows that while OTT messaging has grown exponentially, the number of SMSs sent each year has decreased slightly and it is expected to continue decreasing. The growth in OTT messaging is likely to be fuelled further by the growth of social network platforms, availability of smart devices and falling prices of internet connection.

²⁸ Analysys Mason (2014) "Mobile and the Digital Economy", p. 7

Growth of OTT services in broadcasting

Online video and film streaming has modernized the way people watch television. Technological innovations and internet accessibility over the past years has disrupted the entertainment industry globally. For example, in the United States, 78% of consumers subscribe to at least one OTT service that delivers film and television content over the internet and, interestingly, the percentage of consumers subscribing to pay-tv has fallen from 91% in 2014 to 79% in 2015.²⁹ Through VoD, customers can view content online without a need to purchase and install a satellite dish and a set-up box³⁰.

Although still considered to be low by global standards, internet access in South Africa is growing. A survey conducted by Nielsen SA in 2016 revealed that 63% of South Africans use their portable devices to view television content online, and 73% of them do so at least once a week³¹. Nielsen SA found that the increase in the availability and usage of portable devices and accessibility of the internet as well as improvements in the download speed is likely to increase the penetration of VoD in the market and change the broadcasting market dynamics. In addition, Nielsen SA stated that the main driver of such VoD market penetration is that consumers want to consume what they want as and when they want and VoD services are perfectly positioned to meet these needs.

The foregoing notwithstanding, the entry of VOD service providers in South Africa has yielded conflicting and overall not encouraging results. In late 2015 and early 2016, Showmax³² and Netflix³³ entered the market respectively and have maintained their presence to date. However, some VoD entrants have not been very successful in the recent past. Between 2014 and 2016, two VoD service providers entered September 2014 and exited the market in October 2015.³⁴ The Times Media Group's "VIDI" was launched in September 2014 and exited in January 2016³⁵. Altech stated that intense competition and unfavourable market conditions in the VoD industry were among the key factors that drove the service out of the market³⁶. VIDI cited poor take up and difficulty in gaining traction in the market³⁷. The challenge in South Africa is poor internet access. In 2014, less than half of households in South Africa had at least one member of the household using the internet and only 10% of households had internet access at

²⁹ PWC (2016) "Global entertainment and media outlook 2016-2020: US edition"

³⁰ Aliloupour, Nicole P. "The Impact of Technology on the Entertainment Distribution Market: The Effects of Netflix and Hulu on Cable Revenue." (2016).

³¹ VOD platforms on the rise in SA. Accessed at: http://www.itweb.co.za/index.php?option=com_content&view=article&id=152057

³² MultiChoice SA, a Pay-tv giant company in the South African broadcasting industry sought to participate in the VoD market by offering a VoD service called ShowMax which is priced at R99 per month.

³³ A leader in internet television, the platform has over 40 million users worldwide and recently announced plans to expand into South Africa within the next two years.

³⁴ Van Zyl, G. "Failed Altech Node cost Altron millions". Fin24 Tech. Accessed at <http://www.fin24.com/Tech/Companies/Failed-Altech-Node-cost-Altron-millions-20151007>

³⁵ Internet streaming service VIDI shuts down. Accessed at <https://kasapafmonline.com/2016/02/02/internet-streaming-service-vidi-shuts-down/>

³⁶ Altech node. Accessed at <http://altechnode.co.za/>

³⁷ VIDI reaches the end of the line. Accessed at <http://www.techcentral.co.za/vidi-reaches-the-end-of-the-line/62900/>.

home.³⁸ There is a difference in growth of VoD overseas compared to South Africa as in South Africa, free bandwidth is less available in public areas (WiFi hotspots) and mobile bandwidth is more costly.³⁹

At present, the advent of VoD services has not posed any significant threat to traditional pay-tv. The survey by Nielsen SA further suggested that from a global perspective, VoD services are a supplementary product to traditional pay-tv rather than a substitute. To validate these claims, the survey found that the majority of South African VoD consumers are not planning to cancel their existing traditional satellite service in favour of an online-only service.

The number of VoD subscribers worldwide is expected to increase from nearly 400 million in 2014 to over 800 million in 2020.⁴⁰ This projected growth of VoD programming services is expected to create opportunities for all players in the media ecosystem such as advertisers, content provider and the audience.

Conclusion

The preceding discussion is largely in line with the views espoused in the literature review. Specifically, the high-level cost comparative studies conducted by the Independent Communications Authority of South Africa (“ICASA”), Research ICT Africa (in respect of telecommunications) and the Centre for Competition, Regulation and Economic Development at the University of Johannesburg (“CCRED”) (in respect of transport services), which informed the discussion above, seem to confirm the cost-cutting effects that arise from the introduction of disruptive technologies. Similarly, the view that disruptive technologies foster innovation appear to be borne out by the expansion of the services offered by OTTs (from messaging to voice calls) and shared economy platforms (from cab services to food deliveries, among others). Cumulatively, these developments are arguably likely to result in increased consumer welfare.

CALLS FOR THE REGULATION OF OTT SERVICES IN SOUTH AFRICA

In light of the popularity of OTT and shared economy services in South Africa, many traditional service providers are calling for the regulation of these services. This section provides details on the reasons for the calls for regulation and the various submissions that have been made in this regard.

Telecommunications

In January 2016, the parliamentary portfolio committee on telecommunications and postal services held a meeting with MNOs, ICASA, the Department of Telecommunications and Postal Services (“DTPS”), OTT service providers (such as Facebook, Microsoft, Skype and Google), various other stakeholders

³⁸ Duff, S (2014) “The latest statistics on South African Internet penetration” Accessed at <https://www.webafrica.co.za/blog/general/latest-statistics-south-african-internet-penetration/>

³⁹ Netflix poised to shake up South Africa (2016). Accessed from <http://www.iol.co.za/business/companies/netflix-poised-to-shake-up-sa-1972067>

⁴⁰ Statista (2015) “Statistics and facts about the SVoD market”. Accessed at <https://www.statista.com/topics/2702/subscription-video-on-demand/>

(such as Research ICT Africa) and the Internet Service Providers Association (“ISPA”). The purpose of the meeting was to obtain views from different stakeholders regarding the regulation of OTT services in South Africa.

The larger operators (Vodacom and MTN), as well as the smallest mobile operator in the market (Telkom Mobile), submitted that OTT services should be regulated⁴¹. Below are some of their reasons:

- The current playing field is uneven as the network operators are absorbing the operating costs of providing access to their network while the OTT players reap large profits without requiring a licence to operate or having any obligations to develop or invest in the underlying telecommunications infrastructure. In this regard, the MNOs argued that they have invested significant amounts in infrastructure development (for example, Vodacom invested over R13bn in capital expenditure in 2015 to achieve total network coverage of 99.9% across the country, while MTN spent R10.9bn in their network infrastructure⁴²) which the OTT service providers did not engage in, nor contribute towards.
- The MNOs do not have any control over the kind of content carried on their networks and the growth of OTT services is increasing the amount of data carried over their infrastructure network and this places pressure on their infrastructure investment costs. Essentially, the MNOs have to invest heavily in building even faster networks.
- OTT services have reduced the MNOs’ profitability as they absorb the operational costs of running their networks and they have to continue investing further in their networks due to the growth of data demand (as a result of an increase in OTT services). In addition, there has been a decrease in the demand for voice and messaging services.
- The disruption caused by OTT services does not only have regulation imbalances but also has an adverse economic impact. Unlike registered traditional service providers, OTT service providers do not pay taxes and therefore do not contribute to the country’s fiscus.

Accordingly, the three MNOs argued that services which are similar to MNO services should be regulated in the same way as MNO services. These regulations relate to obligations regarding security, legal interception and Quality of Service (QoS) requirements.

The core argument from these MNOs appears to focus on the suggestion that OTT service providers use infrastructure for which they do not pay (and have not invested in), and they are “free-riding” on the costly infrastructure built by mobile operators. This is especially a concern for MNOs as consumers are increasingly replacing mobile voice and SMS services with OTT services. We deal with these concerns further down.

⁴¹ Christoph Stork (2016). OTT-threat or opportunity for African Telcos? ResearchICTAfrica.net.

⁴² Who Owns Whom (2016). The Telecommunications Industry and Retail of Devices

Cell C, on the other hand, was not in favour of the regulation of OTT services. Cell C submitted that there is a need to distinguish between the two types of regulation that MNOs are calling for. The first type of regulation that MNOs are subject to relates to licensing, quality of service requirements, facilities, leasing and interconnection. The second type of regulation encompasses security, privacy and tax. Cell C was of the view that there are regulations in place already that govern the second type of regulation, and any additional regulation of this type needed to follow a “light-touch” approach. With regards to the first type of regulation, Cell C warned against introducing regulation that would stifle innovation and growth. This view was shared by Microsoft and Google. In addition, other OTT service providers such as Facebook argued that they are not network operators and therefore they cannot be regulated in the same way.

ICASA noted that OTT services are currently devoid of any regulatory compliance obligation. They further made a concession that OTT services stimulate demand for network access, but made no direct contribution to infrastructure development. ICASA submitted that there is a need to recognize the impact of OTT services and also to adopt a wait-and-see approach so as not to stifle innovation. They further suggested that there is a need for continual monitoring of the impact of OTTs, and to intervene where necessary. ICASA submitted that they would undertake a research study into priority markets, which included possible OTT service markets.

The DTSP, in its stakeholder consultation process regarding the National Integrated ICT Policy document, received a number of submissions detailing concerns about network operators preventing or discriminating against internet traffic of OTT service providers.⁴³ Essentially, the arguments were that network providers can act as gatekeepers to online services. The Commission’s submission in this respect was that if a net neutrality policy is adopted in South Africa, the rules must be designed in such a way that the policy does not dis-incentivize investments and, at the same time, firms (particularly dominant firms) do not find avenues of subverting the objectives of the policy and behave in a way that is detrimental to rivals and consumers. For instance, rules would need to be designed to ensure rivals are not the subject of anti-competitive practices such as refusals to deal, where access is conditional on terms that place them at a competitive disadvantage against the incumbents and/or vertically integrated firms.

In addition, one argument that has been raised to counter the argument by the MNOs of “free-riding” is that the MNOs gain from increased data revenue as consumers use more OTT services. The issue of “free-riding” is not necessarily true because consumers who use OTT services such as WhatsApp or Netflix, either on their mobile devices or computers (using mobile or fixed networks), are charged a price by their mobile or fixed line service provider for using data. Specifically, the users of these services pay the mobile or fixed networks in the form of data charges every time a message is sent and received, or a video is downloaded. And for OTT services, where a message is sent or a call is made, both the sender

⁴³ DTSP submission to the Parliamentary Portfolio Committee on Policy and Regulatory options for over-the-top services in January 2016.

and receiver are charged a price for using data. This is different from traditional mobile voice and SMS communication where only the sender is charged. So, while the cost of communication may be lower for each individual party, it is important to remember that both parties pay mobile operators when using OTT services. Ultimately, consumers are paying for the use of the network operators' infrastructure through data charges.

Further, it is argued that while OTT service providers may not be paying network operators for using their networks, the introduction of OTT services has resulted in a significant increase in data usage (and smartphone usage) and this has increased data revenues for network operators. As shown earlier, the revenues of Vodacom and MTN shows that data revenues have been increasing significantly and while voice and messaging revenue has been declining, total revenue has not been significantly affected.

Broadcasting

There has not been much noise about the regulation of OTT services in the broadcasting sector. Netflix only entered South Africa in January 2016. As such, it is still too soon to observe the effect of its entry on pay-tv. In addition, internet access in South Africa with regards to fixed broadband is still not fully developed – internet penetration from fixed broadband was a scant 5.3% according to Statistics South Africa's general household survey report of 2015.⁴⁴ Further, it would seem that in South Africa, these online broadcast platforms are seen as complements to the current traditional pay-tv service offerings.⁴⁵ However, as the international experience has shown, over time these online platforms do develop and become direct competition to the traditional platforms. In countries like Canada, traditional broadcasters have called for the regulation of these services as they are facing increased competition from Netflix⁴⁶. If Netflix and other VoD services become more popular in South Africa and start competing with pay-tv, South Africa could also be faced with calls to regulate these services.

Policy and regulatory challenges in respect of OTT

As previously indicated, the regulation of disruptive technologies brings with it complications in respect of market definition in antitrust proceedings. As a point of departure, it is important to note that while services may seem to be substitutable from an end-user perspective (e.g. WhatsApp messaging and SMS), the services are not delivered to the end-user using similar platforms. Thus, while from a demand side perspective, two services may be substitutable; they may not be substitutable from a supply side perspective. As such, although some online services may be used for similar purposes as the corresponding traditional services, regulatory regimes are not necessarily aligned.⁴⁷ This is because

⁴⁴ Mzekandaba, S. (2016) "SA's Internet user numbers surge". Accessed at http://www.itweb.co.za/index.php?option=com_content&view=article&id=153224

⁴⁵ VOD platforms on the rise in SA. Accessed at: http://www.itweb.co.za/index.php?option=com_content&view=article&id=152057

⁴⁶ Broadcasters call for CRTC to regulate Netflix service. Accessed at <http://www.theglobeandmail.com/report-on-business/broadcasters-call-for-crtc-to-regulate-netflix-service/article4192329/>.

⁴⁷ European Parliament (2015), "OTT Players: Market dynamics and policy challenges". Director General for Internal Policies.

many of the definitions used in legislation today relate to the means by which services are delivered (or how they are paid for) rather than the nature of the services themselves and how they are perceived by end-users.⁴⁸

As will be discussed in greater detail in the following section, the OECD recently held a Global Forum on Competition (“Global Forum”) with a specific focus on “*The impact of Disruptive Innovation on Competition Law Enforcement*”⁴⁹. The Global Forum benefitted from submission by the United Kingdom, United States of America (“US”), Australia, Brazil, Indonesia, Japan and Canada. With respect to the submissions at the Global Forum, there was a view that while there is no consensus on the relationship between competition and innovation, competition policy should, however, ensure the protection of disruptive innovation. This requires less focus on static efficiency price competition as an analytical approach; and more focus on dynamic efficiency, investment and innovation. In this regard, the Global Forum was of the view that there should be a move away from static market definition towards a solid theory of harm approach, particularly where (i) the incumbent traditional service provider has market power; (ii) the target firm (in the context of a merger) is a disruptor; and (iii) the conduct or merger under consideration prevents the deployment of disruptive innovation.

Further, traditional services are usually subject to sector-specific legislation (e.g. ICASA for telecommunications and broadcasting in South Africa) which may not be applicable to online service providers. For example, mobile telephony operators are subject to regulations dealing with access to their networks. These regulations do not apply to online service providers as these service providers are content providers and they do not have a network. Online service providers use the network of mobile operators to provide content. As a result, it is often the case that the common regulations that govern both online and traditional services are less prescriptive rules that deal with consumer protection and data protection.⁵⁰

However, there are some online services where the regulation that applies to traditional service providers can also be applied to the online service providers. For example, the National Land Transport Act is currently being amended to include a new section that allows for the regulation of operators using technology platforms.

Other concerns that have been raised with regards to regulating OTT and sharing economy platforms have been in relation to jurisdictional issues and the payment of taxes. Many of the online service providers are international companies and this raises questions as to which country’s rules should govern.

International perspective on the concerns raised in respect of OTT service providers

⁴⁸ Ibid.

⁴⁹ Organisation for Economic Co-Operation and Development, (2015), “The impact of Disruptive Innovation on Competition Law Enforcement”, DAF/COMP/GF(2015)16.

⁵⁰ Ibid.

In its background note to the Global Forum, the OECD raised the concern that regulations that may prevent the entry of disruptive firms are generally not mindful of the competition implications of their positions. As a result, the OECD is of the view that disruptive entry can induce tensions between regulation and competition policy, especially in instances where such entry renders existing regulations obsolete.

In 2015, the European Union published the outcomes of its research study into the market outcomes and the policy challenges that arise as a result of the introduction of disruptive technologies such as OTT. The study sought to explore, *inter alia*: the current and emerging business models employed by OTT service providers; and evaluate the regulatory environment for online, as opposed to traditional services in the media and telecommunications space in Europe. Some of the key issues and findings of this study are related to those concerns that have been raised in South Africa and these are discussed below.

MNOs in Europe have expressed the concern that they invest in costly infrastructure to provide mobile telephony services and OTT service providers simply use this infrastructure to compete with MNOs on substitutable services, without paying the network operators for the use of their infrastructure. A similar argument was raised in a number of jurisdictions including the US, Chile, Netherlands and Brazil. As a result there was a concern that traditional service providers could throttle or block the internet traffic of OTT service providers over their network. The argument raised by governments and regulatory authorities in these jurisdictions was that if legislators did not step in and define access to the open internet, fixed and mobile network operators who provide broadband connectivity (over which OTT services are provided) could have both the ability and incentive to throttle or block online services which compete with their own voice and messaging services.⁵¹

This concern led to the introduction of the net-neutrality policy in many of these jurisdictions. Net-neutrality essentially means that internet traffic has to be treated equally, without discrimination, restriction or interference regardless of sender, receiver or content. The policy prevents MNOs from interfering with the internet traffic of OTT service providers on their network even though they compete with them.

Internationally, there are mixed findings with regards to regulating OTT services. The European Commission has indicated that it may propose for the change of the EU legal framework to allow national regulators to regulate at least those OTT services and platforms that provide functional substitutes for electronic communication services. The European Commission is proposing for a Digital Single Market and the roll out of super-fast broadband infrastructure which requires network operators to invest significantly in their infrastructure. The network operators in Europe have argued that they do not have an incentive to commit large investments in infrastructure as OTT services are reducing the network operators' revenues from voice and SMS services. The telecoms operators are hesitant to give OTT

⁵¹ European Parliament (2015), "OTT Players: Market dynamics and policy challenges". Director General for Internal Policies.

service providers free access to high-speed broadband infrastructure if they are not allowed to receive payment for access and if the OTT services are not subject to similar regulation as the network operators.⁵² As such the European Commission is considering the introduction of OTT regulation. However, details of the exact type of regulation and when this regulation will come into effect are not yet available.

Italy also announced in June 2016 that the communications regulator is considering the introduction of OTT regulation. OTT service providers could be required to pay operators for using their networks. The proposed payment to operators should be “equitable, proportionate and non-discriminatory,” and serve as compensation for the investment telecommunications operators have made in building their networks as well as the telephone numbers used by messaging apps for their services. In turn, the OTT service providers could be allowed to charge consumers for value-added services.⁵³

India, on the other hand, decided against OTT regulation in 2014 because it was of the view that the mobile operators are compensated by the increased data revenue they generate from their subscribers for using OTT services.⁵⁴

Developments in South Africa to date

In South Africa, the DTSP is considering the introduction of a net neutrality policy as a means to address the concerns indicated above.⁵⁵ In addition, ICASA has indicated that it will conduct an inquiry into the provision of OTT services in South Africa. The aim of such a market inquiry is to determine whether regulation is necessary. For now it appears the regulator has adopted a “wait and see” approach.

A DESCRIPTION OF APP-BASED TAXI CAB SERVICES AND THEIR GROWTH IN SOUTH AFRICA

Globally, the transport sector has been disrupted by the entrance of shared economy or ride-sharing transport service providers like Uber, Lyft and Sidecar. Despite the existence of numerous global shared economy service providers, only Uber has entered South Africa thus far. In addition to Uber, there have been a few local entrants such as Snappcab, Zebra cabs (which has migrated from being a traditional to an app-based cab service) and Ryda but these players do not appear to have made significant inroads in the South African market. The emergence of such firms threatens to reduce metered taxi associations’ participation in the provision of private transport / cab services. These service providers are efficient and rely on a smartphone application that uses the customer’s smartphone to detect their specific location using the Global Positioning System (GPS), and instantly connects the customer to the nearest available

⁵² EU intends to regulate OTT services, article by Baker and Mackenzie (March 2016). Accessed from <http://www.lexology.com/library/detail.aspx?g=1c21db98-3fb8-491c-ae8a-18e247e8b036>

⁵³ Tarifica’s weekly news bulletin (29 June 2016).

⁵⁴ DTSP presentation to the Parliament Portfolio Committee on Telecommunications and Postal Services in January 2016.

⁵⁵ The ICT policy review discussion paper accessed from <http://www.dtps.gov.za/mediaroom/popular-topics/415-ict-policy-review-discussion-paper.html>

driver. By using location detection, customers easily connect with the nearest driver in a short period of time. This innovation is therefore attractive to consumers as it leads to a shorter waiting and travel time rendering the service more reliable than traditional metered taxis.

Figure 3 below sets out an overview of the process of requesting and using an app-based cab.

Figure 3: Process of requesting an app-based cab



Source: The 5-Step Uber Playbook That Will Disrupt the On-Demand Economy.

App-based applications work in four stages as illustrated in the figure above. The first stage is where customers use a smart device to request for a ride. In stage 2, the application connects the nearest driver with the customer using (GPS). The car is delivered in stage 3 and the electronic payment is made in the last stage, once the passenger exits from the car. Stage 2 and stage 4 are automated by software.

The discussion below will focus on Uber given that it is the largest app-based service provider in South Africa. Uber has grown significantly in South Africa since its entry in 2013. Uber services are now available in five South African cities i.e. Johannesburg, Pretoria, Cape Town, Port Elizabeth and Durban. In 2014, Uber recorded 1 million trips; however, it managed to double these figures and recorded 2 million trips in the first months of 2015⁵⁶. In 2014, the average waiting time for an Uber cab was 10 minutes, however, at present, this time has decreased significantly and it varies across cities. Customers currently wait for an average of 4.2 minutes in Johannesburg, 4.6 minutes in Durban and 3.5 minutes in Cape Town⁵⁷.

CCRED conducted a study on passenger transport in South Africa in 2015.⁵⁸ The CCRED study found that Uber's customers were of the view that the "Uber" application makes it easy to order a cab from any location, at any time. Customer also indicated that it is much quicker and efficient to request a ride with Uber compared to traditional taxis which are usually located at central depots or central places such as bus stations or train stations. Moreover, the study found that there is a wide gap between prices charged by Uber and traditional metered taxis for both short and long distances.⁵⁹ Essentially, the study

⁵⁶ SA Uber users log over 2 million trips in 2015's first half. Accessed at <http://www.moneyweb.co.za/news/tech/sa-uber-users-log-over-2-million-trips-in-2015s-first-half/>.

⁵⁷ SA Uber users log over 2 million trips in 2015's first half. Accessed at <http://www.moneyweb.co.za/news/tech/sa-uber-users-log-over-2-million-trips-in-2015s-first-half/>.

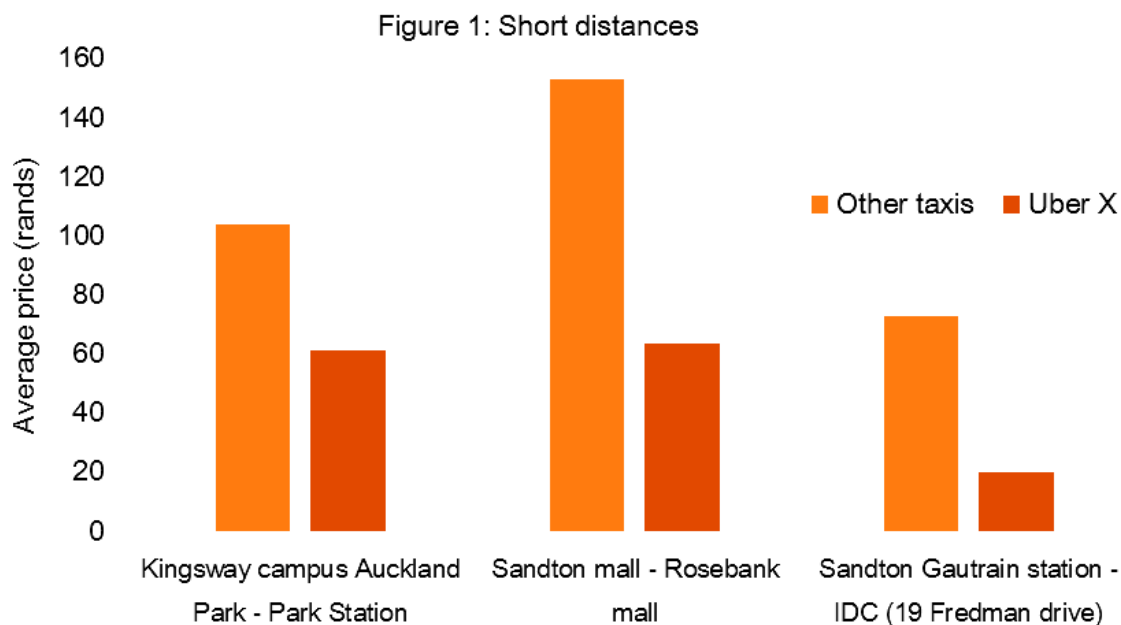
⁵⁸ Dube S.C. (2015). Uber: a game-changer in passenger transport in South Africa. CCRED Quarterly Review accessed from <http://www.competition.org.za/review/2015/11/22/uber-a-game-changer-in-passenger-transport-in-south-africa>

⁵⁹ Ibid.

demonstrates the consumer welfare enhancing effects of effective disruptive technologies in traditional markets.

Figure 4 below provides estimates of short distance prices between Uber and four anonymous taxi companies in Gauteng.⁶⁰

Figure 4: Short distance price comparison between Uber and metered taxis



Source: Uber: a game-changer in passenger transport in South Africa

The distance from Kingsway campus Auckland Park to Park Station is 6.5km and costs approximately R100 if a metered taxi is used and approximately R60 if Uber X is used. The distance from Sandton mall to Rosebank mall is 5.2km and costs approximately R158 if a metered taxi is used and approximately R62 if Uber X is used. The distance from Sandton Gautrain Station to Fredman Drive is 1km and costs approximately R70 if a metered taxi is used and approximately R20 if an Uber X is used.⁶¹

The figure depicts that Uber cabs are significantly cheaper than traditional metered taxis. For a 5.2km distance, from Sandton mall and Rosebank mall, the price difference is approximately 154% between using a metered taxi and Uber X. For a 1km distance from Gautrain Station to Fredman Drive, Uber charges approximately 250% less than a metered taxi.

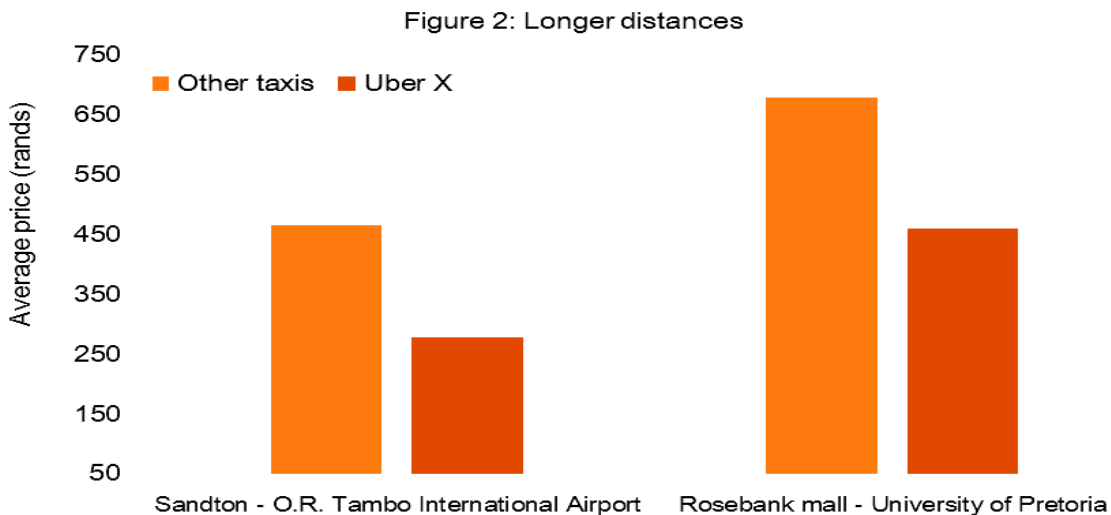
Figure 5 below provides price estimates for long distance trips.⁶²

Figure 5: Long distance price comparisons between Uber and metered taxis

⁶⁰ The quotations were obtained on the 18th of September 2015, between 14:30–15:30.

⁶¹ Dube S.C. (2015). Uber: a game-changer in passenger transport in South Africa. CCRED Quarterly Review accessed from <http://www.competition.org.za/review/2015/11/22/uber-a-game-changer-in-passenger-transport-in-south-africa>

⁶² Ibid.



Source: *Uber: a game-changer in passenger transport in South Africa*

The distance from Sandton to O.R Tambo International airport is 36.5km and costs R450 if a metered taxi is used and R260 if an Uber X is used. The distance from Rosebank mall to the University of Pretoria is 54.6km and costs R660 if a metered taxi is used and R450 if an Uber X is used.

Notably, the difference between prices of Uber and metered taxis is lower for long distance trips. In the 36.5km trip, the difference is 73% and 46% for a 54.6km trip with Uber still being cheaper in both cases.

Conclusion

Uber's business operations in South Africa have seen significant growth in respect of the usage of the service by consumers. It appears that there is no clear evidence of traditional or incumbent service providers responding to the introduction of such competition, either by reducing price or improving quality in respect of their traditional service offerings. Instead, some of these incumbents, such as Zebra cabs, appear to have adopted the newly introduced technologies and seem to be gearing themselves up to compete in these "new markets". In terms of the shared economy platforms, the move towards an app-based platform by traditional service provider Zebra cabs is an encouraging sign that traditional service providers are beginning to embrace the developments introduced in the market.

CALLS FOR THE REGULATION OF APP-BASED TAXI SERVICES IN SOUTH AFRICA

In respect of Uber and other app-based taxi services, Geradin (2016) argues that in order to retain the consumer welfare enhancing aspects of these services, regulators ought to create a regulatory framework that allows for such technologies and traditional service providers to compete on a level playing field⁶³. Further, the author argues that traditional service providers can also embrace the dynamic

⁶³ Geradin, D., (2015), Should Uber be Allowed to Compete in Europe? And if so How? Competition Policy International.

shift in the competitive landscape in these markets by, for example, relying on other existing online platforms.

Uber is becoming very popular in South Africa (and globally) and metered taxis have been calling for the regulation of Uber. The entry of Uber into the local taxi industry was met with hostile challenges around regulations, particularly the fact that they were not subjected to regulation in the same way as metered taxis. Globally, allegations of unfair competition practices have been levelled against Uber in several cities such as Washington, Paris, Mexico City, Lisbon in Portugal, Bandung in Indonesia and Cape Town in South Africa, amongst others.⁶⁴ South Africa's Metered Taxi Council is arguing that Uber is engaging in unfair competition practices and it does not comply with local transport regulations. Metered taxi operators have alleged that Uber is using aggressive below-cost pricing and operating without metered taxi permits which are charged on an annual basis or as a once-off payment (approx. R1 500.00) according to section 54 and 62 of the National Land Transport Act No.5 of 2009.⁶⁵ The Commission has already received a complaint from the Metered Taxi Association with regards to Uber's pricing in South Africa.

In addition, there are also arguments that Uber does not comply with transport rules and regulations for metered taxis such as; sealed meters for the purpose of determining the fare payable, detailed description of the specific route, stipulated minimum and maximum fares per kilometre, displaying of approved rates on the vehicle and on the sealed meter, vehicle standards and safety specifications.⁶⁶ It appears that Uber's business model has enabled it to bypass local transport rules and regulations including successfully adopting technological solutions to overcome local transport regulatory barriers.

In response to the concerns raised, South African regulators are currently amending the National Land Transport Act to include a new section for Transport Network Operators that caters for the regulation of operators using technology platforms such as Uber. In this regard in March 2016, Cabinet approved the National Land Transport Amendment Bill, to allow Uber operators to operate as metered-taxi operators. In addition, Uber taxis are also allowed to use smartphones instead of meters.⁶⁷

INTERNATIONAL DEVELOPMENTS IN RESPECT OF APP-BASED TAXI SERVICES

There have been a number of cases involving Uber which have been investigated by international competition authorities. The most prominent case is the class action lawsuit for price fixing in the United States of America ("US"). However, Russia has also dealt extensively with app-based cab drivers, which is discussed first.

⁶⁴ Dube S,C. (2015). Uber: a game-changer in passenger transport in South Africa. CCRED Quarterly Review accessed from <http://www.competition.org.za/review/2015/11/22/uber-a-game-changer-in-passenger-transport-in-south-africa>

⁶⁵ Ibid.

⁶⁶ Ibid.

⁶⁷ Business Day article entitled "Bill allows Uber to use smartphone instead of meter", accessed from <http://www.bdlive.co.za/business/transport/2016/03/08/bill-allows-uber-to-use-smartphone-in-place-of-meter> on 21 July 2016.

In July 2015, the Federation of Russian Car Owners (“FRCO”) filed a complaint on behalf of taxi drivers to the General Prosecutor, the Public Chamber, and the Federal Antimonopoly Service (“FAS”) requesting that these authorities must check the activities of app-based taxi cab service providers such as Uber, Gett and Yandex.Taxi in Russia. The FRCO alleged that these firms abused their dominant position by decreasing prices and monopolizing the taxi transportation market. The FRCO also alleged that Uber, Gett and Yandex.Taxi created illegal competition on the market because they have no cars of their own and do not hire drivers, but sign partner agreements with companies that provide cars under taxi lease contracts. The FRCO argued that these actions allow these companies to set monopolistically low prices and that such pricing behaviour forced other taxi market participants (i.e. taxi drivers) to adopt unprofitable pricing in order to compete with Uber, Gett and Yandex.Taxi.

In October 2015, the FAS held that it does not consider that Uber, Gett and Yandex.Taxi are dominant in the transport market and that these firms’ main business activity is the collection and transfer of information between users of taxi services and carriers. Accordingly, the FAS found that these firms operated in a separate market to traditional taxi cabs and thus made no adverse findings against the respondents. The FRCO subsequently appealed the FAS’ findings to the Russian Prime Minister, Dmitry Medvedev.

Subsequent to the FRCO launching the complaint with the Russian Prime Minister, in April 2016, the Ministry of Transport amended the bill *on state regulation of taxi transportation*, and the app-based taxi cab service providers were obliged to negotiate the tariffs with the taxi carriers. The FAS responded by arguing that this would amount to a cartel arrangement. In addition, the Moscow transportation department threatened to ban Uber unless the company agreed to special terms established by the collaboration agreement. The collaboration agreement provides that Uber agrees to work only with licensed taxi drivers who have a state permit to drive a taxicab and that Uber is obliged to share its car movement data with the city’s transportation authorities. The sharing of transportation data is aimed at improving the city’s new intelligent transportation system. Similar agreements were also signed with Gett and Yandex.Taxi.

Another key competition law-related case is the much-publicised class action lawsuit for price fixing launched by Mr Spencer Meyer against Uber’s C.E.O. Mr Travis Kalanick in December 2015⁶⁸. The crux of the allegation is that Mr Kalanick facilitated an unlawful horizontal agreement between Uber’s driver partners through the use of the Uber pricing algorithm. In May 2016, Uber joined the case as a necessary party to the litigation.

The Uber pricing algorithm essentially entails a base fare amount plus an amount for the duration of time spent in the car as well as an amount based on the distance travelled. This pricing algorithm also

⁶⁸ Spencer Meyer vs. Travis Kalanick, United States District Court (Southern District of New York), Complaint: 1:15 Civ.9796, ECF Case.

continuously monitors the demand patterns for drivers in various locations so that in those areas where is high demand, the fares in that area are increased with the activation of the so-called “surge pricing”.

The complainant in this matter alleged that Mr Kalanick, who is not only the co-founder of Uber but also an occasional driver, coordinated with Uber’s partner drivers (who accepted the pricing algorithm as part of its terms and conditions) to use the pricing algorithm for the pricing of the Uber service and thus limited competition between these drivers. The complainant argued that the effect of this was that consumers were prevented from negotiating prices with individual drivers since they did not compete on price as a result of this pricing algorithm.

This case brought to light the question of characterization, with the complainant alleging that the fact that Mr Kalanick is an occasional driver gave this agreement a horizontal character. Uber and Mr Kalanick, on the other hand, argued that this was a vertical arrangement in terms of which individual drivers entered into agreement with Uber.

In his opinion and order dated 31 March 2016, Judge Rakoff cited the *United States vs. Apple Inc.* and *Laumann vs. National Hockey League* cases⁶⁹ which held that “*where parties to vertical agreements have knowledge that other market participants are bound by identical agreements, and their participation is contingent upon that knowledge, they may be considered participants in a horizontal agreement in restraint of trade.*” In this regard, the Court found that “*plaintiffs have plausibly alleged a conspiracy in which drivers sign up for Uber precisely “on the understanding that the other [drivers] were agreeing to the same” pricing algorithm, and in which drivers’ agreements with Uber would be “against their own interests were they acting independently.*” The Court further held that the drivers’ ability to benefit from the reduced price competition essentially constituted a “*common motive to conspire*” a la *Apex Oil Co. v. DiMauro*⁷⁰.

In further characterizing the alleged conduct, the Court referred to case law which stated that “*Courts have long recognized the existence of “hub-and-spoke” conspiracies in which an entity at one level of the market structure, the “hub” coordinates an agreement among competitors at a different level, the “spokes.” These arrangements consist of both vertical agreements between the hub and each spoke and a horizontal agreement among the spokes to adhere to the [hub’s] terms, often because the spokes would not have gone along with [the vertical agreements] except on the understanding that other [spokes] were agreeing to the same thing.*”

The litigation in respect to this case is still on-going as Uber filed notice to appeal the judgement. This notwithstanding, the case raises some interesting issues, specifically the potential for online or app-based platforms such as Uber to facilitate collusive outcomes in markets.

⁶⁹ *United States vs. Apple, Inc.*, case number: 791 F. 3d 290, 314 (2d Cir. 2015); and *Laumann vs. National Hockey League*, case number: 907 F. Supp. 2D 465, 486-87 (s.d.n.y. 2012).

⁷⁰ *Apex Oil Co. v. DiMauro*, case number: 822 F.2d 246, 254 (2d Cir. 1987).

COMPETITION CONCERNS THAT MAY ARISE IN THE AFFECTED INDUSTRIES

As disruptive technologies become popular and increasingly compete with traditional service providers, there may be potential competition matters that could arise. This section will discuss some of the potential concerns that could arise.⁷¹

Refusal to access

Mobile and fixed line networks could attempt to deny access or provide access on terms and conditions (e.g. quality of service) which prevents OTT service providers from competing effectively in the market. This concern may not arise in South Africa as government is considering the introduction of a net-neutrality policy. However, such a policy will need to be crafted in a manner that does not allow dominant firms to find avenues to subvert the objectives of the policy.⁷²

Predatory pricing

Questions have been raised about whether sharing platforms could engage in predatory pricing to force rivals out of the market. This could potentially arise in two ways:

- The platform offers very low prices such that competitors cannot match the price; or
- The platform reduces its commission from each transaction, allowing suppliers (drivers in the case of Uber) to achieve higher margins on that platform compared to what they would earn on competing platforms.

The manner in which a sharing platform could engage in predatory pricing is more plausible through reduced commissions for the platform rather than lower prices. This is because lower prices would mean that it is not only the platform sustaining losses but also the suppliers (drivers). It is unlikely that individual suppliers would be willing to sustain such losses (absent compensation from the platform) over an extended period of time in order to assist the platform to maximize profits at a later stage. Individual suppliers do not have the market power or the ability and incentive to engage in predatory pricing. However, the platform could reduce the commission it earns while maintaining the same level of consumer prices. In South Africa, when Uber reduced its prices in winter 2016, drivers were compensated by Uber so as to not decrease the revenues earned by the drivers.

It is possible for a particular platform to offer sustained low prices over a period of time to drive out competitors. However, it is not clear whether they would have the ability to subsequently raise prices or commissions once their rivals have exited the market. This will depend on the extent to which scale and

⁷¹ Largely drawn from the Deloitte Access Economics study for the Australian Competition and Consumer Commission in 2015.

⁷² The Commission made a submission on the net-neutrality policy options to DTPS as part of the Commission's submissions on the ICT policy review discussion paper in 2015.

network effects gained through driving out competitors are sufficient to prevent entry in the future. The extent to which scale and network effects create high barriers to entry for sharing platforms is yet to be established. In Australia, this issue has been raised but the Australian authority has not conducted research on this as yet.

The Commission also received a complaint in relation to Uber. It is also noteworthy that a number of competition cases have been opened against Uber in jurisdictions such as India, and the US.

Horizontal and vertical integration

As platform businesses grow, they start offering additional products and services off their platform either through horizontal or vertical integration. For example, WhatsApp entered the market by offering messaging services but it now offers voice calling services. Similarly, Uber now provides a food delivery service.

These trends raise the prospect of integrated platforms with market power using that market power to force or incentivise their suppliers and/or consumers to support the integrated business model in order for the platform to maximize revenues. This could also allow an integrated platform to cross-subsidise across the different arms of its business and make it difficult for the non-integrated platforms to compete. In order for the platform to engage in this type of leveraging, it must be dominant in at least one of the markets it operates in. At present it is unlikely for this concern to arise, however, if certain platforms do become dominant, it is possible for such concerns to arise.

Exclusive dealing

Sharing platforms such as Uber could impose exclusivity on the drivers in order to maximize the number of consumers and drivers on its platform and minimize the numbers on its competitors' platforms. However, while the incentive to engage in this conduct may exist, it is not clear whether they would be able to sustain such a strategy. Drivers could retaliate and join competing platforms especially if barriers to entry are low and new platforms could enter the market easily. Internationally, Uber faces competition from Lyft and Sidecar. It is possible that these competitors may enter South Africa in the future. However, if Uber manages to significantly integrate and gain dominance in South Africa before other firms enter the market, such exclusivity concerns could arise.

RECOMMENDATIONS

The introduction of disruptive technologies in the broader ICT and shared economy sectors has brought about a new dimension of competition and a change in how these markets have traditionally operated. These changes have resulted in significant consumer welfare enhancing benefits which must be encouraged and preserved. On the other hand, concerns regarding an uneven regulatory environment; especially given that industry-specific regulation currently does not provide sufficient regulation to protect traditional service providers, have been raised by the incumbent service providers in these sectors. Regulators and competition authorities globally are confronted with the question of how do countries balance a fair and equitable regulatory regime while maintaining competition (brought by these disruptive innovations) with its concomitant consumer welfare benefits.

Literature has shown that sector regulators need to be mindful of the fact that a blanket approach to regulation cannot be adopted as online services may not fall within the legislation governing a particular sector due to the manner in which the services are provided. In the case of OTT services, the online service providers are content providers whereas the traditional operators are active in the network and therefore subject to rules relating to access. The same types of regulation are not applicable to content providers. In addition, the entry of OTT and the sharing economy has resulted in significant benefits to consumers in terms of price and quality of service and as such regulators need to be mindful that innovation is not stifled in an attempt to protect incumbent firms.

While these technologies are at present new, even on a global scale, regulators are aware that it is possible that these technologies may overtake traditional services in the not too distant future. This is a function of increasing demand for these technologies. Therefore there is a need for considering a tailored regulatory framework that takes into account the nuances of these specific technologies given that these are different from the manner in which traditional service providers are regulated.

In designing this framework, there is a need to appreciate the consumer benefits that arise from the introduction of these technologies and therefore the regulatory framework must not only balance these considerations, but also ensure that they are encouraged. Perhaps a light handed approach to regulation may be better in order to be sensitive to the nascent stage at which these technologies are and also to allow for innovation.

The foregoing notwithstanding, there are potential competition concerns that may arise in future and the Commission must keenly watch these. Already there are indications of potential bundling and diversification into other markets such as Uber entering the food delivery market and WhatsApp offering voice calling. There are also complaints with regards to the pricing of Uber. As such, the role of advocacy in sensitizing such disruptive firms of the potential competition concerns that could arise in the long-run cannot be overstated. Similarly, such advocacy must extend to industry regulators to sensitize them of the benefits of designing a pro-competitive regulatory environment in relation to these disruptive technologies. Further, competition authorities can use other tools at their disposal, such as market

studies, in order to continuously monitor developments in these markets in order to better understand and appreciate the competitive dynamics therein.

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