ITU-D Study Groups

Question 3/1 and Question 4/1 joint session on the Economic Impact of OTTs on National Telecommunication/ICT Markets

Tuesday, 1 October 2019 (Room K, ITU)

OTTs provide an opportunity and a risk	**Mobile Internet access is the default business model**	**Mobile broadband network coverage is key to success**	**Focus on stimulating network investments**
Operators may benefit from increased use of OTTs by investing in broadband networks and growing data revenues or attempt to cling on an out-dated business model. This is ultimately a business decision.	African operator groups have all seen fast-growing data revenues. Investment into telecom infrastructure in the past 15 years has mostly been into faster and better broadband.	Operators with extensive 3G+ coverage can grow their data revenues, while operators with mostly 2G network coverage are vulnerable to declining voice and SMS revenues.	Policy-makers should be more concerned with stimulating network investment into 3G+ and less with attempting to protect out-dated business models of operators.

EVOLVING BUSINESS MODELS ARE DRIVEN BY OTT APPLICATIONS

The mobile business model is inevitably evolving from voice and SMS to a mobile Internet access model. The first generation of mobile phones provided voice services, the second generation brought SMS to consumers, and ever since 2.5G it has been about better and faster data. Social media applications drive broadband adoption and data consumption. Policy-makers and regulators should be more concerned with stimulating network investment into 3G+ and less with attempting to protect out-dated business models of operators.

Operators have argued that OTTs have cannibalised voice and SMS revenues and warned that the resulting decline of overall revenues leads to lower investment in network infrastructure; substandard quality of service; lower tax revenues and lower licensing revenues. We investigate this claim by using publicly available information from mobile operators across Africa to analyse trends in voice, SMS and data revenues. We analyse three factors impacting revenue trends: changes in usage patterns across voice, SMS and data, the impact of regulatory interventions and the choice of business model.

How do OTTs fit into the business model of MNOs?

The view that OTTs are causing a decline in operator revenues is based on a simplistic understanding of the source of telecom revenues. Generally, revenues depend on many factors, among them the number of subscribers, subscriber profiles, product design, retail prices, level of competition in the sector and regulation. These factors can be grouped into three categories:

- **Economic factors:** Demand for mobile services as a function of population, GDP, exchange rates;
- **Regulatory environment:** Market structure shaped by the number of Mobile Network Operators (MNO), fairness of competition and transparency and predictability of regulations;
- **Operator strategies:** Product design, response to other operators and own business model.

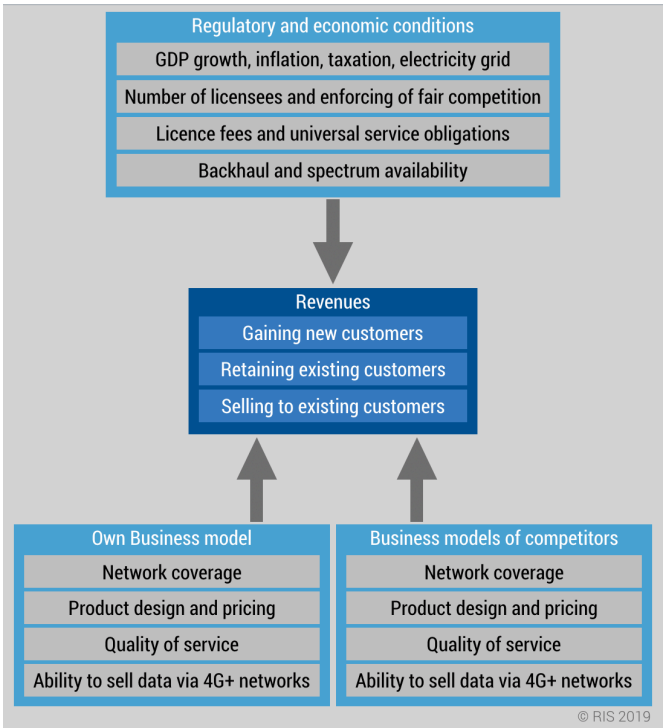


Figure 1: Factors impacting operator revenues

Assessing the claims by MNOs that OTTs harm their profits needs to take all three factors into account.

The Internet Value Chain

The Internet value chain has five distinct segments: Content rights, online services, enabling technologies, connectivity and user interface (Figure 2). MNOs are part of the connectivity segment of the Internet value chain. Each segment has its own investment requirements, operational risks, legal implications and revenue opportunities.

While online services made up the bulk of the value in the value chain in 2015 (47%), social media and communication applications make up less than 3.4% of the total online services at USD 55 billion. The main value contributors are e-retailers.[1]

Considerable investment is required for an MNO to expand upstream or downstream of the Internet Value Chain. MTN launched its own social media application with built-in payment functionality called MoMo in March 2019, for example. This is a strategy to generate revenues outside the traditional telecommunication sector, aimed at advertisement and financial services revenues.

It's all about personal data

The actual battle is not that of self cannibalisation, replacing voice and SMS with data revenues, but one of maintaining information leadership. For years, MNOs were in the lead, knowing where their customers are in space and time, whom they communicate with and when. While this information is still available to MNOs a more potent and detailed information source has risen in terms of social media and online shopping. The information that Amazon and Facebook have about a particular customer is likely to be more valuable than what an MNO knows about the same customer. To enter this market is a business decision, not a regulatory function.

Evolving business models

The number of OTT users and OTT traffic is steadily increasing. If OTTs cause a decline in revenues, then one should be able to see a systematic decline in revenues over time and also for all countries and most operators.

The overall impact of OTTs on the financial performance of mobile operators depends on whether data revenue growth can make up for potentially declining voice and SMS revenues. Social media led to the explosion of mobile broadband adoption and usage and consequently to a massive upgrade in mobile network infrastructure across Africa.

With OTTs being increasingly used for voice and message communication, the general trend is a transition from voice and SMS towards data as a primary source of MNO revenues. The transition from a voice and SMS to mobile Internet access-business model is inevitable. MNOs will eventually become mobile Internet access providers, distinguishing their products by speed and quality of service, and competing with other forms of access, such as Public WiFi and connectivity in places of work, study and home. MNOs will no longer charge for Voice and SMS, only for bandwidth and or data consumption.

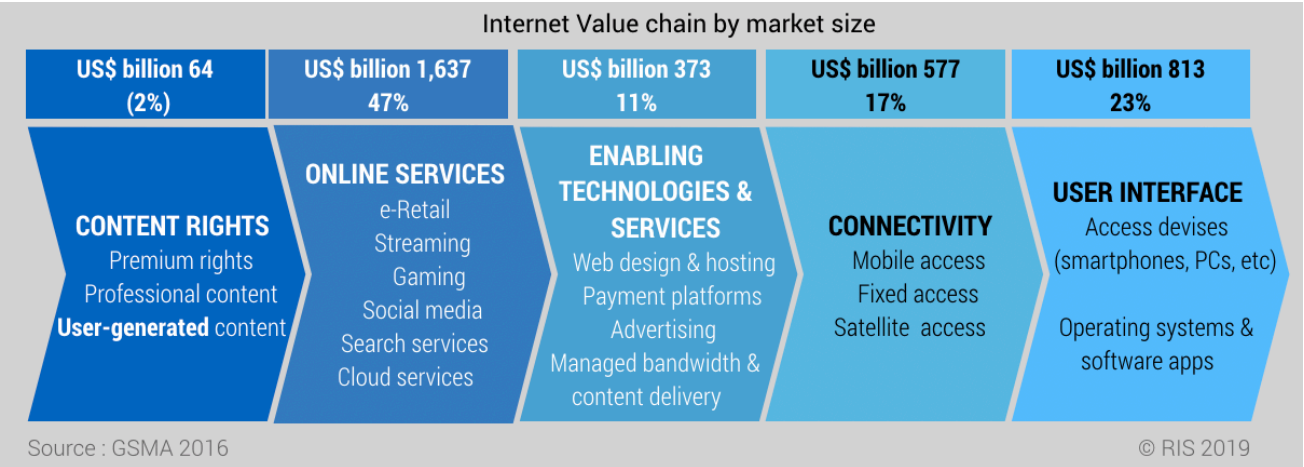
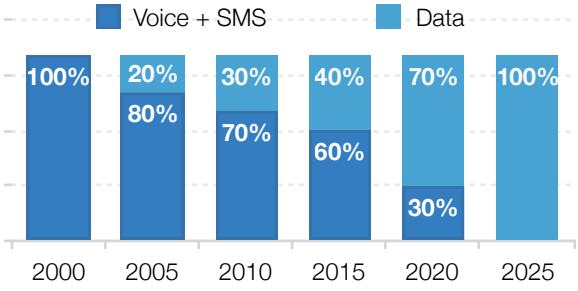


Figure 2: share in market size of global Internet value chain in 2015

[1] The Internet Value Chain: A study on the economics of the Internet, May 2016, https://www.gsma.com/publicpolicy/wp-content/uploads/2016/05/GSMA_The-Internet-Value-Chain_WEB.pdf.

Voice is no longer the primary service and has been replaced by data, not only because of revenue trends but also because this is where the last decade of mobile network investment has gone into. The business model of MNOs has to evolve, along with the technology they deploy. Figure 3 displays an illustration of this transition.

Figure 3: Illustrative trends towards "Access" only business models



Apart from competitive pressure, the trend described in Figure 3 depends also on smartphone penetration and 3G+ network coverage. The migration to a mobile Internet access business model will take longer for countries that have little 3G and 4G coverage and low smartphone penetration. Insufficient 3G+ network coverage is one of the main reasons why some mobile operators struggle to generate enough data revenues to compensate for declining voice and SMS revenues.

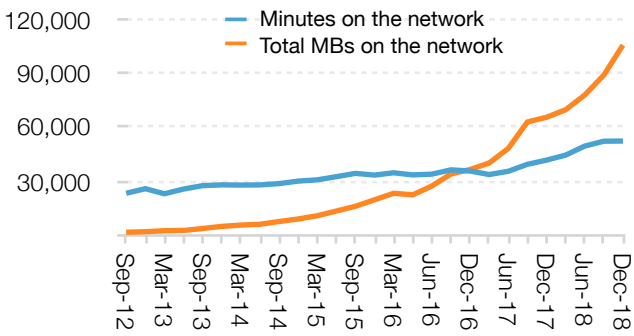
Voice traffic s still growing

The trends described in the previous sections is reflected in publicly available revenue and traffic data. Figure 4 shows, for example, the trend for voice and data traffic on Airtel's Africa network. While voice traffic has grown more slowly between 2012 and 2018, data traffic has seen exponential growth.

What Airtel's financial figures show is that the claim that MNOs are seeing lower voice traffic as a result of OTTs is wrong, voice is still increasing overall. The lack of mobile broadband coverage and low smartphone penetration are the primary reasons why many MNO's in Africa still see increasing voice and SMS traffic.

The transition from an analogue-centric business model based on voice and SMS to a digital mobile Internet business model for MNOs with national coverage my thus be only partial or delayed. This provides an opportunity for new entrants to gain market share rapidly as the case of India's Jio powerfully demonstrates.

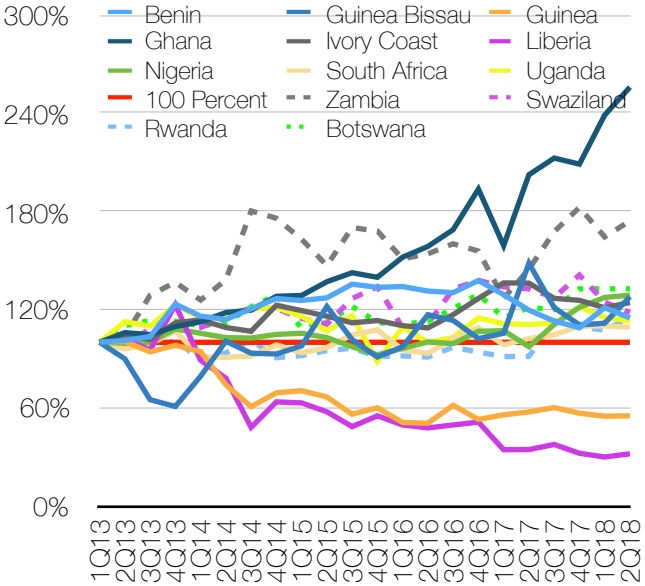
Figure 4: Minutes and MB on Airtel's Africa network



MNO revenues reflects a companies ability to seize opportunities and mitigate risk

Looking at the revenues of MTNs operations in Africa reveals that most of its operations have managed to increase revenues since 2013 (Figure 5).

Figure 5: MTN Revenue in percent of Q1 2013 revenues

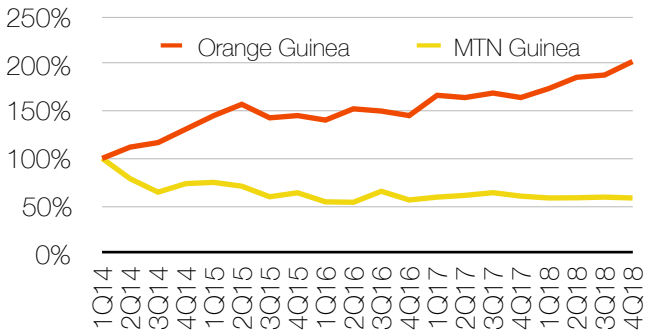


Only two MTN operators had declining revenues when expressed as a percentage of 2013 revenues: MTN Liberia and MTN Guinea. Both countries had declining revenues due to macro-economic shocks (e.g., Ebola outbreak). All the other countries have increased revenues. However, Orange Guinea managed to increase revenues while MTNs revenues declined.

MTN's revenue developments demonstrate two important points:

1. The general revenue trends are positive despite growing numbers of OTT users and OTT traffic.
2. Revenues and profitability are mainly the results of an operators ability to seize revenue opportunities and mitigate risk.

Figure 6: Revenue developments of MTN and Orange Guinea in percent of Q1 2014 revenues



Unintended consequences of regulatory interventions

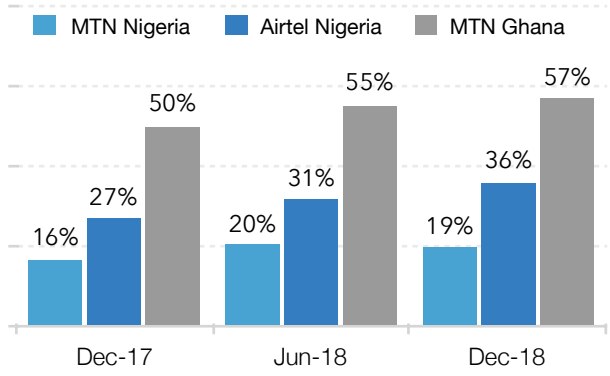
The gains and pitfalls from the changing business models are neatly illustrated by two case studies: MTN Nigeria compared to Airtel Nigeria and MTN Nigeria compared to MTN Ghana.

Over the past few years, MTN Nigeria has had several significant disputes with the regulator:

- On 10 June 2016, as a result of not complying with SIM registration procedures, MTN agreed to pay a fine of 330 billion Naira (USD 1.67 billion).
- MTN lost 8.8 million subscribers between December 2016 and June 2017 due to the SIM registration requirements imposed by the NCC.
- MTN has been in a dispute with the Central Bank of Nigeria over the "alleged improper repatriation by MTN Nigeria of USD 8.1 billion between 2007 and 2015".[2]

MTN Nigeria acknowledged in it's 2019 Q1 results presentation that it invested less in its data network as a result of the regulatory disputes.[3].

Figure 7: Data as % of voice revenues



Airtel seized this opportunity to gain market share and rolled out 4G to over 130 cities[4] while MTN seems to have coverage in only 9 cities.[5] The result is that MTN's data revenues as a percentage of voice revenues declined, while Airtel's increased (Figure 7).

The impact of regulatory intervention and resulting lack of investment in the data network is demonstrated even within MTN itself. In neighbouring Ghana, where MTN faced less regulatory challenges, data in relation to voice revenues is nearly three times that of MTN Nigeria. MTN's experience in Ghana and Nigeria is illustrative of the importance of business model choices and the role of regulatory factors.

Conclusion

Our analysis demonstrates three important points about OTTs impact:

1. The general revenue trends are positive despite growing numbers of OTT users and OTT traffic.
2. Regulatory interventions may have unindexed consequences including impairing network investments. Policy-makers and regulators should be more concerned with stimulating network investment into 4G+ and less with attempting to protect out-dated business models of operators.
3. Revenues and profitability are mainly the results of an operators ability to seize revenue opportunities and mitigate risk. Operators may benefit from increased use of OTTs and roll out faster broadband networks to grow data revenues or try and cling on the analogue minute and SMS business model for as long as they can, which is ultimately a business decision.

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[2] https://www.telegeography.com/products/commsupdate/articles/2019/01/03/mtn-resolves-nigeria-repatriation-dispute/

[3] https://www.mtn.com/wp-content/uploads/2019/05/MTNN-Q1-2019-local-analyst-presentation.pdf, page 15

[4] https://www.telegeography.com/products/commsupdate/articles/2019/08/06/airtel-offers-4g-home-broadband-service-in-130-cities/

[5] https://allafrica.com/stories/201808230562.html