

The Impact of Over-The-Top Services in Telecommunications Industries

1. Introduction

Over the past decade or so the telecommunication industry has witnessed the proliferation of the smart phones, and a new model of communication. Mobiles users spend more and more time in various digital platforms and therefore consume more data.

Incumbent telecommunications operators provide their own products and services, and enable others to provide theirs, by providing essential infrastructure and data services, resulting in rapid growth of demand of data and its usage.

Amongst digital platforms and services the Over-The-Top services and social networks have skyrocketed. The OTT provides services such as audio, video and other media over the Internet by bypassing the traditional Telco's networks. Since providing these services do not require a technology connection with the Telco networks, they are known as Over-The-Top.

2. Objective of the report

The objective of this paper is to analyse the effects of the Over-The-Top Services in telecommunication sectors and propose a conceptual framework to attempt to:

- Reduce the negative impact of the OTT in the industry
- Increase revenue of telecom operators and those of the governments through tax collection

3. Impact of OTT in Telecommunications Industry Revenue

The shift in mobile users preferences and means of communication, as well as the new technology trends, have contributed to a drastic slump in telecommunications revenue.

The choice of OTT services as a new model of interaction has a direct impact on operators' revenue and that of all stakeholders of the telecommunication industry.

According to a recent report released by Informa's World Cellular Revenue Forecast 2018*, global annual SMS revenue will decrease from \$120 billion in 2013 to \$96.7 billion by 2018.

This fall is essentially due to the increase use of OTT messaging applications in our daily lives.

In its report “The Future of Voice”, Spirit DSP has emphasised that global revenue of voice will decline from \$970.4 billion in 2012 to \$799.4 billion by 2020. As the result of this trend of the OTT VoIP, the worldwide telecommunication industry will register a significant loss of revenue of approximately \$479 billion, which is equivalent to 6.9% of its total revenue.

On the other hand, based on the “Consumer OTT VoIP Outlook:2013 to 2018 report” by Ovum, the OTT Voice will grow by 20%, and as a result, its usage will reach approximately 1.7 trillion minutes by 2018, generating a revenue of \$63 billion.

On the basis of these studies, by 2018, it will be noted that the average total revenue loss in the telecommunication industry will reach around \$43 billion.

4. Effect of OTT in Data Traffic in Networks

The rapid uptake of OTT applications in global telecommunications industry has led to an exponential increase in data traffic. This trend causes severe congestion in Mobile Networks due to a surge demand of video contents.

Based on Cisco Visual Networking Studies, between 2013 and 2018, Mobile data is expected to grow at the rate of 61 per cent, pushing the volume of data from 5 Exabytes to 15.9 Exabytes per month. In the other hand, video traffic will increase from 633 PB to 9103 PB monthly.

This growth of data will push Mobile operators to invest more in network capacity enhancement by requiring more spectrum but also deploying more infrastructure in small cells.

This trend of more data usage and the serious threat of OTT services will force Mobile operators to adopt a new business model, and would have to consider the growth data traffic as another business opportunity, as due to proliferation of OTT communication services, and as consequence loss of voice and SMS revenue, they have noticed a dramatic increase of data revenue. Without the transformation of their business model, mobile operators would be considered as dump pipes instead of traditional broadband network operators.

5. Impact of Lack of OTT Regulation Framework And Technology Neutrality

From a technical point of view, OTTs provide consumers with some ease of communication and, to some extent, quality of service. However, the fact remains that concerns about the absence of established rules of the game, especially, issues related to the competition with the traditional operators, supervision of OTT activities, conditions of use of the personal data, monetization of its data, taxation issues, obligations related to the provision and operation of electronic communication services.

The lack of a regulatory framework is linked, inter alia, to the lack of a reliable definition of OTTs, which has a direct impact on business relationships as well as on the obligations governing telecommunications activities.

5.1. Impact of the absence of a specific regulatory framework for OTTs

Regulating OTTs requires knowing them, but there is not yet a single definition that includes all the parameters allowing a legal framework of OTTs activities.

- Classical definition: Over-the-top service means a service of delivery of audio, video and other media on the Internet without the participation of a traditional Network Operator (such as a cable, telephone company or satellite) in the control or distribution of the content.

The Internet Service Provider distributing the content may be aware of the content of the IP packets circulating on its network, but is not responsible for, nor able to control, the display of the contents of the copyright or the redistribution of the content.

This definition demonstrates the legal limits on certain basic principles, which are notably related to copyright, the use and control of the distribution of content, the protection of personal data voluntarily made available to suppliers of OTT services by users.

- The French terminology has tried to adapt to this technology, proof of its magnitude by designating it by OHFAI, which stands for “*Offre Hors Fournisseur d’Accès Internet*”. This definition confirms the impossibility of defining OTTs by what they really are. Again we limit ourselves here to define them by what they do not provide, i.e. offers related to Internet Service Provision.

This has the consequence of challenging national legislations to find appropriate rules at the national, sub-regional and even continental levels. Thus, in terms of impact, beyond disrupting the market, the absence of legal rules relating to OTTs results in the following shortcomings:

- The lack of protection of personal data.

- The lack of ability to identify the entity responsible for quality of service.
- The impossibility for States to identify users without referring to OTTs who may or may not communicate the requested information.
- The lack of knowledge of personal data use rules
- The lack of protection framework for vulnerable people (minors, handicapped, women, etc.).
- The inability to make emergency calls.
- The impossibility of enforcing security injunctions, especially to listen and traceability.
- The impossibility of determining a tax base or levying royalties.

However, in view of these non-exhaustive shortcomings, it seems that there is a good opportunity to change existing legislation towards a single African model relating to OTTs taking into account the proposed services, the identification of the legal entities responsible of these OTTs, etc.

The uniformity of the new rules will allow a balanced market, governed relations between Operators and OTTs on the one hand and between Regulators and OTTs on the other hand.

5.2. *Impact on technology neutrality*

Technological neutrality is a principle that the law should not discriminate between the various techniques that may be used to achieve and maintain the integrity of the information. In addition, the law should not privilege the use of one technology over another. In other words, the law should give all technologies the same legal recognition based on conditions that do not entail the obligation to act according to particular norms or standards.

The objectives of technological neutrality are aimed not only at adapting the rule of law to contemporary society, but also at establishing fundamental principles of non-discrimination, technological neutrality and functional equivalence.

In practice, and for the case of the Internet (services, applications and content including OTT) this implies, obligations imposed by certain legislations (such as the US and the EU) to the operators. These obligations are:

- Internet Service Providers (ISPs) cannot prohibit online access to content, applications or legal services (Facebook, Deezer, Facetime for example). This is known as "no blocking".
- Internet Service Providers cannot slow down or speed up certain offers for the benefit of others. This is known as "No Throttling". It aims to avoid having a two-speed Internet.

- No additional fees for offers wishing to speed up their content. This is the "No prioritization" intended to ensure free and equal access to the Internet for all.

In such a context, technological neutrality benefits OTTs but not traditional Operators in addition to other obligations (see above). To make this technological neutrality effective between the various actors of the sector on the basis of equity, the preliminary definition of criteria of appreciation is necessary, it is among others of:

- The equivalence of the medium.
- The neutrality of the medium.

Indeed, if the medium used is the same, namely the electronic medium, the tools and the investments made are not neutral because at the expense of the Operators and for the benefit of the Over-the-top service providers (OTTs).

Hence the relevance or even the obligation to define legal rules, consensual criteria of technological neutrality to guarantee equitably a competitive market open to all market players without discrimination. Meanwhile some states have tried to manage the rise of OTTs in their territories by taking measures that are more or less effective.

6. OTT Management Implications

Over The Top (OTT) are among these emerging services that are fastly transforming Information and Communication Technologies. Their appearance on the markets has shaken up the habits as well as the classic models and raised questions at the legal, economic and technical levels.

Therefore, in terms of management, and in a context marked by the lack of guidelines on the one hand, and divergence of interest on the other hand, several approaches are under experimentation. Below are some examples:

6.1. *Blocking OTT*

Although it violates the principle of technological neutrality, it was the initial response of the licensed Operators. It seems a simple option but requires prerequisites without which it could be ineffective or even dangerous (risk of popular outcry or uprising). In view of the place they now occupy in consumer daily habits and the convenience they provide to consumers, the OTTs should only be envisaged when local suppliers of the same types exist.

Among the countries that have experimented with the option, only those who have the option to offer this alternative (China, for example) have managed to sustain it. Arguments

in favour of this option say that, in addition to guaranteeing the use of OTT by users, this option has the advantage of ensuring that advertising revenues generated by the use of subscribers data is the responsibility of the providers of these locally registered services.

6.2. Bundling with OTT

In this case, licensed Operators bundle traditional services (voice, SMS) with OTT services into a single offering (dedicated data for no-fee social media, free OTT, basic free internet packs). This option makes it possible to both satisfy the need to use OTT and to ensure the sustainability of the traditional services (revenue preservation) of licensed Operators. For example, to date, operators in 21 African countries have partnered with Facebook to offer free basic packs on their platforms

6.3. Partnering with OTT

The bulk of OTT revenue comes from the exploitation of data from licensed Operator subscribers who use OTT services. The partnership consists of establishing a win-win partnership between OTT service providers and Licensed Operators, with a commercial agreement guaranteeing licensed operators a portion of these revenues. The support of the Regulators is essential to the success of this option. Beyond guaranteeing the commercial agreement between OTT service providers and licensed operators, Regulators' involvement will allow them to identify possible regulatory leads (tax, technical, etc.) related to activities of foreign OTT service providers.

6.4. Developing Own OTT

This is for an operator to develop its own bypass service (Deutsche Telekom offers a WhatsApp alternative with its immmr service). Such a strategy would facilitate the transition to a discounted access model.

7. Conclusion and Recommendation

In this study, it is outlined that Telco's market power where traditionally source of income, predominantly based on voice and SMS subscriptions, has been eroded due to higher OTT services competition. These OTT services such as Whatsapp, Skype, Viber, WeChat, to name the few, neither contribute to direct income of Telcos nor the governments' tax revenues. Heavy usage of mobile data caused by the OTT revolution necessitates additional network investments, which is another challenge, due to lack and difficulty in obtaining additional spectrum.

To adapt in this technology revolution, mobile operators must devise strategies and new business model. In the other hand, governments and regulatory agencies must take a determining stance towards these OTT players, namely:

- Mobile operators to create their own OTT applications. T-Mobile USA, Telefonica, and Orange have launched respectively Bobsled, Tu Me and Libon that offer free voice and text messages.
- Governments and regulatory agencies in partnership with Telcos to identify voice and text messages that go through IP traffic and charge these services. This is under study and consideration by ARPTC, the D.R. Congo regulatory agency.
- Governments and regulatory agencies to increase data charges to offset the loss caused by these OTT services.
- Governments and regulatory agencies to block OTT services. This is highly challenging due to VPN apps available in the market, and some applications such as Viber change signatures on a daily basis.

As outlined by Marcelo Cataldo, CEO of Tigo Colombia (TigoUne) in his recent interview, Telcos' growth is being harmed by regulators' failure to deal with fast-paced transformation in the industry. Thus, he urged stricter laws and regulation against OTT players.

Members of Council of African Regulators must take a bold and coordinated action against the OTT services, such as one mentioned above, and other countries will follow suit.