
***ITU REGIONAL ECONOMIC AND FINANCIAL FORUM OF
TELECOMMUNICATIONS/ICTS FOR Arab Region***

(Manama, Bahrain, 29 November 2015)

**“Over-The-Top” Services:
Enablers of Growth & Impacts on
Economies**

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Introduction

- The telecom industry has had to deal with a continuously changing business and technology environment more than most other industries over the past half century.
1. Evolution of **Data communication** is expected to continue at an accelerated pace over the next decade with already visible impact on National Economy and particularly Telecom Operators
 2. **Operators** have **dominated the communications industry** for more than two decades. Now they are **challenged by new players in a reshaped Eco-system**.
 3. The growing impact of OTT services on telco's voice and messaging revenue a **widely accepted phenomenon**. Are they able to re-think their business models to adapt to a **new digital era**. Will they focus on their core connectivity business? On providing digital services? On finding new revenue streams?...Will they have the Resources to Invest in all these segments?
 4. **Regulators** played an extremely **positive role** in the past decade making the development happen. They are questioned today about ensuring sustainability of the new ecosystem including in ensuring Affordable quality services to the largest Population. **Are they ready for that ?**
 5. **OTT Players** are taking full benefit of Telcos' Infrastructure and Investments to grow their Business. Will they accept to "Contribute " on balanced Value share and Cost/Revenues vs. Net Neutrality Assurance?

Plan



- 1- OTT Services : Enablers of Growth**
- 2- OTT Services : Impact on Economies
- 3- OTT and Regulation Aspects
- 4- Recommendations
- 5- Conclusions



What's OTT ?

“OTT (Over-The-Top) refers to applications and services, which are **accessible over the internet and ride on Operators' networks offering internet access services** e.g. social networks, search engines, amateur video aggregation sites, etc.”

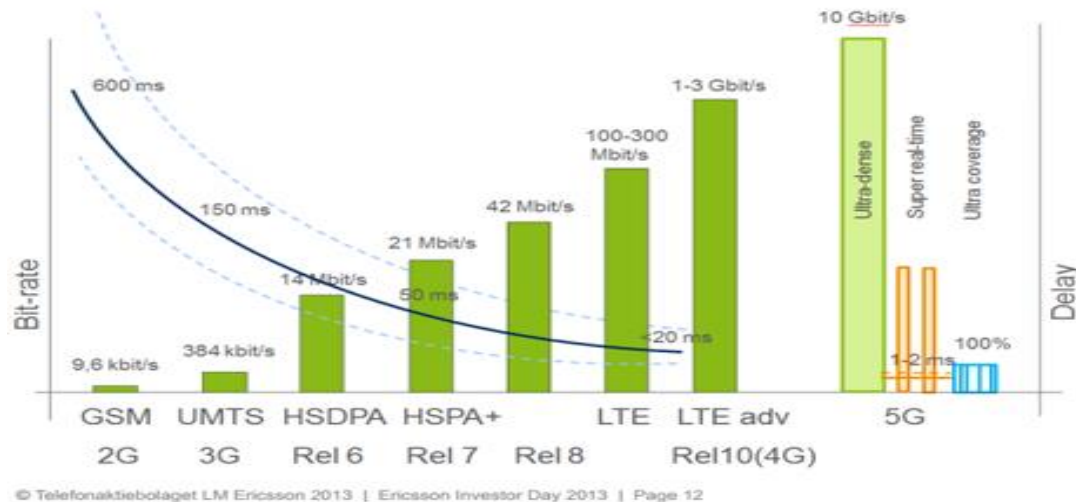
Example of Classification :

| | | |
|----------------|---|---|
| Communications | <ul style="list-style-type: none">• Voice Services• Messaging |  |
| Applications | <ul style="list-style-type: none">• Social Networks• E-Commerce, E-Health,.... |  |
| Video/Audio | <ul style="list-style-type: none">• OTT TV• OTT Video• Streaming |  |

Those Players are Major Enablers and Drivers for Sector Growth

Enablers & Drivers for Growth (1/6)

Continuous evolution of cellular technologies, providing better network capacities in terms of bitrates, latency, coverage, mobility, etc.

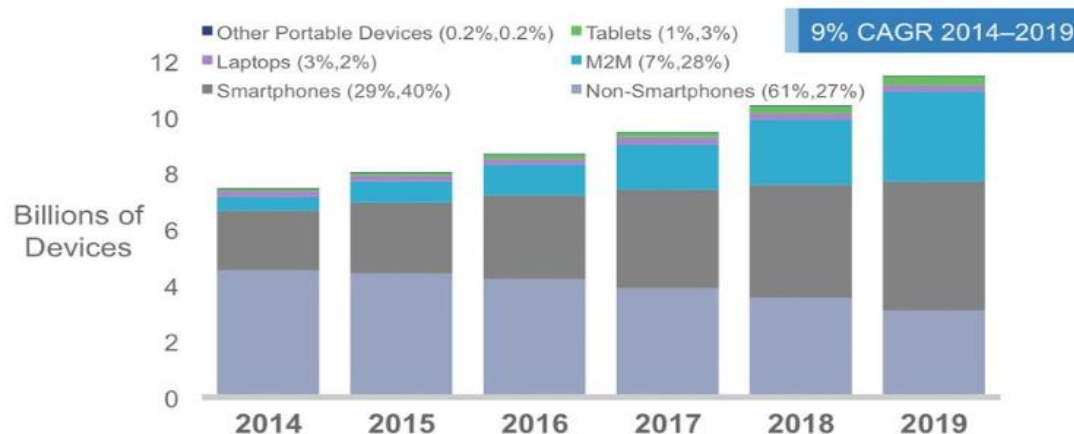


- ▶ Enabling high-bandwidth and real time applications (streaming, online games, etc.)

Enablers & Drivers for Growth (2/6)

Increased Growth of mobile connected devices and connections especially via Smartphones

Global Mobile Devices and Connections Growth



Figures in parentheses refer to 2014, 2019 device share.
Source: Cisco VNI Mobile, 2015

▶ Boosting the global rates of Internet penetration

Enablers & Drivers for Growth (3/6)

New trends in Mobile Phones : Advanced Capabilities



4G technology's support

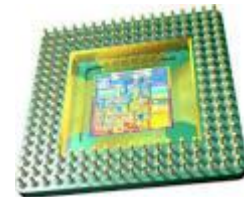
Integrated camera with high resolution



Higher battery autonomy



More Powerful Microprocessors with less energy consumption



Integrated sensors



Enablers & Drivers for Growth (4/6)

Consumers' trends

- **Personalization & Customization**

Consumers' demand for more personalized experience and more customizable access to services of their choice

- **Accelerated consumers' demand for contents**

- **Social Propensity**

- Need of modern consumer to share every emotion, thought and experience instantly
- Sharing of huge quantities of pictures, videos and audios
 - ➔ Explosion of user generated multimedia content which has led to increased sharing & communication among social groups



Enablers & Drivers for Growth (5/6)

Contents & features

- **Advances in audio/video codecs and streaming technologies** (H-264/H265, HLS, Microsoft Smooth Streaming, etc.)
- **Content Availability & Development of Content Delivery Networks (CDN)**
- **Better offered Features & greater Convenience**

| | SMS | WhatsApp | Line | Viber |
|--------------------|-----|----------|-------------|--------|
| Text | ✓ | ✓ | ✓ | ✓ |
| Characters | 160 | None | None | None |
| Group Chat | × | ✓ | ✓ | ✓ |
| Emoticons | × | ✓ | ✓ | ✓ |
| Stickers | × | × | ✓ | × |
| Photos | × | ✓ | ✓ | ✓ |
| Videos | × | ✓ | ✓ | ✓ |
| Audio | × | ✓ | ✓ | × |
| Location | × | ✓ | ✓ | ✓ |
| Contact | × | ✓ | ✓ | × |
| Walkie-Talkie | × | ✓ | ✓ | × |
| Voice & Video Call | × | × | ✓ | ✓ |
| Others | | | Line Camera | Doodle |

Source: Impact of Over the Top (OTT) Services on Telecom Service Providers , February 2015

Enablers & Drivers for Growth (6/6)



Attractive Business Models

- Various business models which depend heavily upon the market, customer segment and competition. **Examples :**

Subscription based

Users pay a periodical fee to use the service

Usage/Transaction

Users pay for a specific transaction or the resources they use

Advertisements

Users pay attention. This attention is monetized as different types of ads

Freemium

Basic features are free, but premium or convenience features are not

Donations

Some platforms (such as Wikipedia) are funded by donations

Monetization of Information

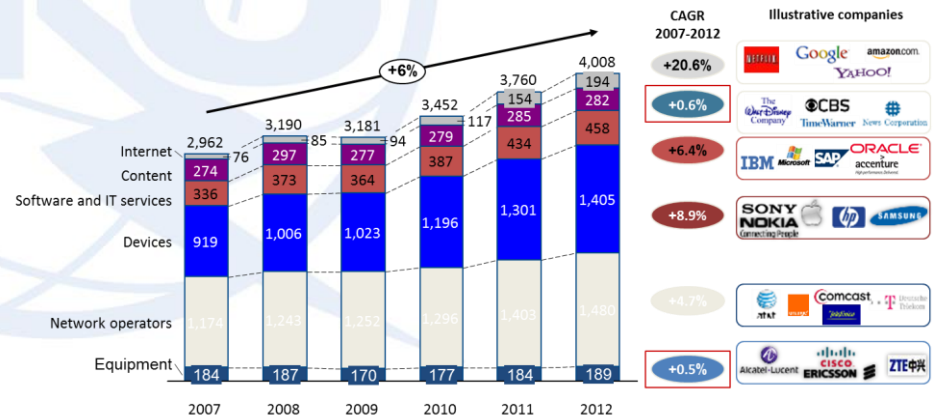
Users disclose their own information and content. Suppliers monetize it

Source: DETECON Consulting & Deutsche Telecom Group, "The rise of OTT players – what is the appropriate regulatory response?", 2014

*All these Factors, associated with **appropriate Regulation that ensured fair competition and fostered innovation** almost worldwide, have led to an outstanding Growth of the sector and its contribution to the national Economies :*

Contribution to GDP (p2016) :

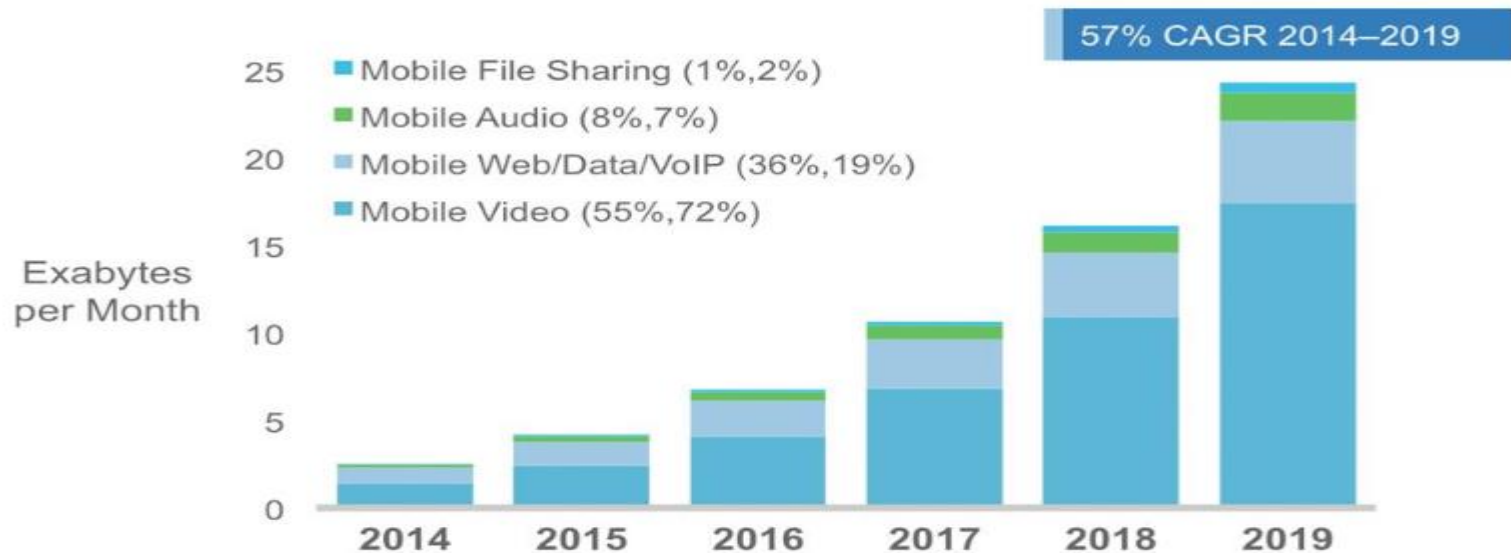
- **Developed Countries : 5,5%**
- **Developing - : 4,9%**



Source : OCDE Digital Economy 2015, Internet Society , Africa's internet 2014

....and the Growth is expected to continue

Traffic: Mobile Data Boosted by Mobile Videos Services



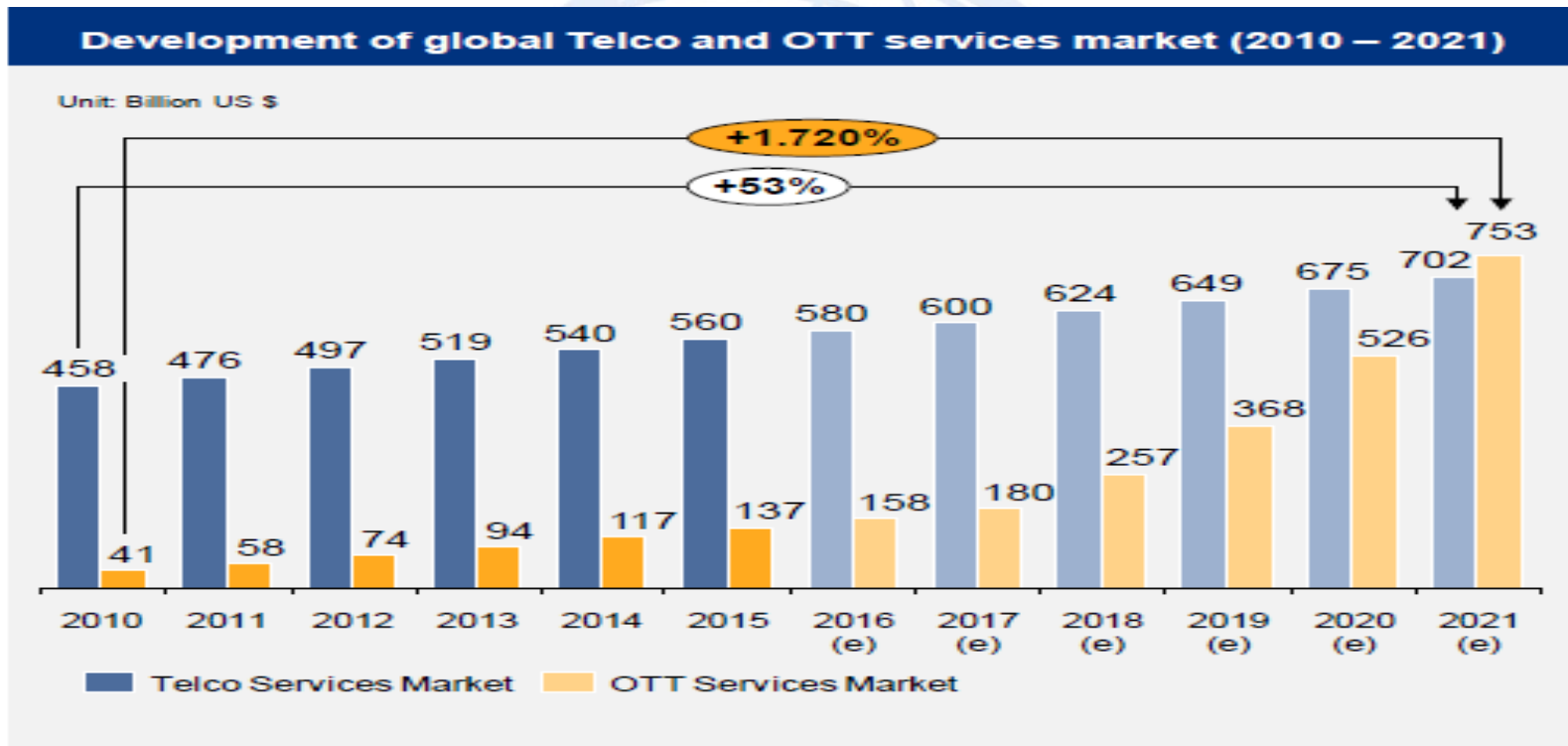
Figures in parentheses refer to 2014, 2019 traffic share.
Source: Cisco VNI Mobile, 2015



Video services and fast growing demand will make Mobile Networks “Struggling” to cope with it !

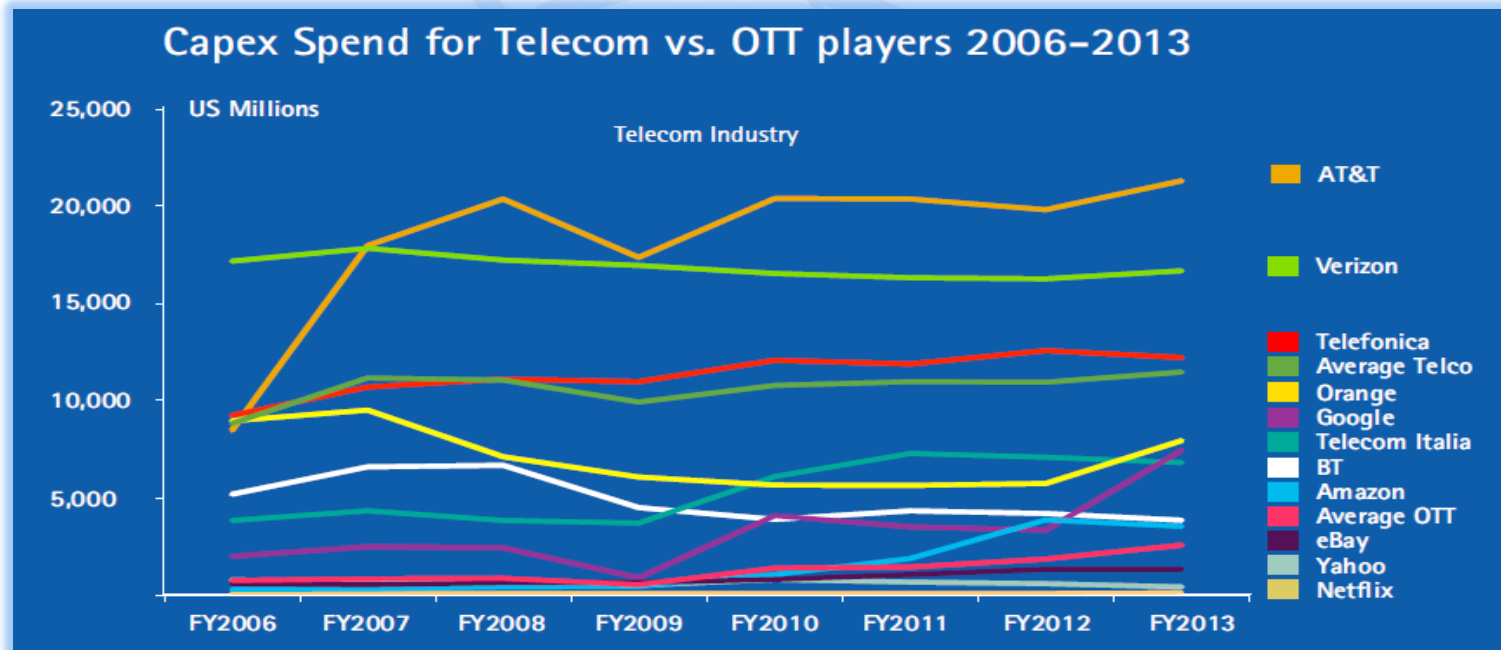


...with Growing Revenues for OTT and Stagnation of Telcos !



Source: IDATE - World Internet Services Markets 12/2013 and Detecon Forecast (e)

... considering past capex contribution



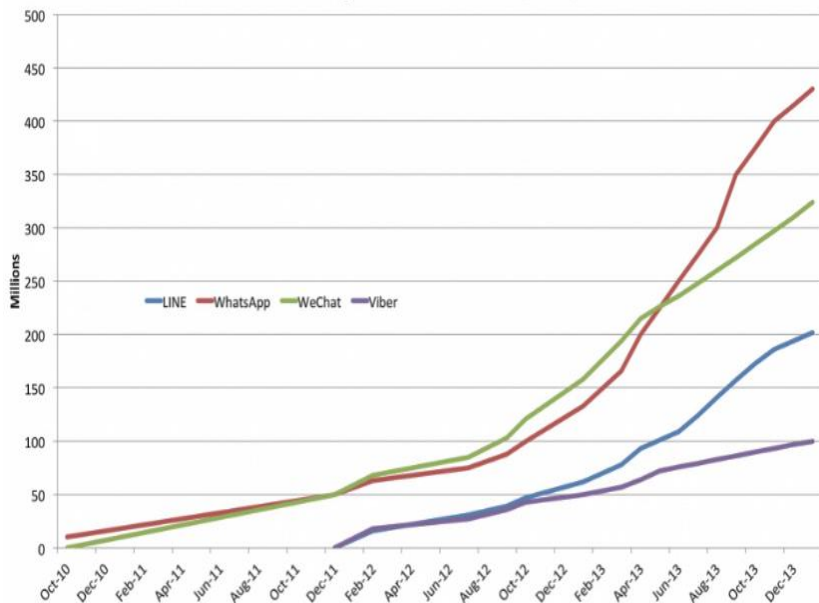
As % of revenues, the difference is huge

Source : Accenture- The new Digital Operator, 2014

Growing Share of OTT's (1/4)

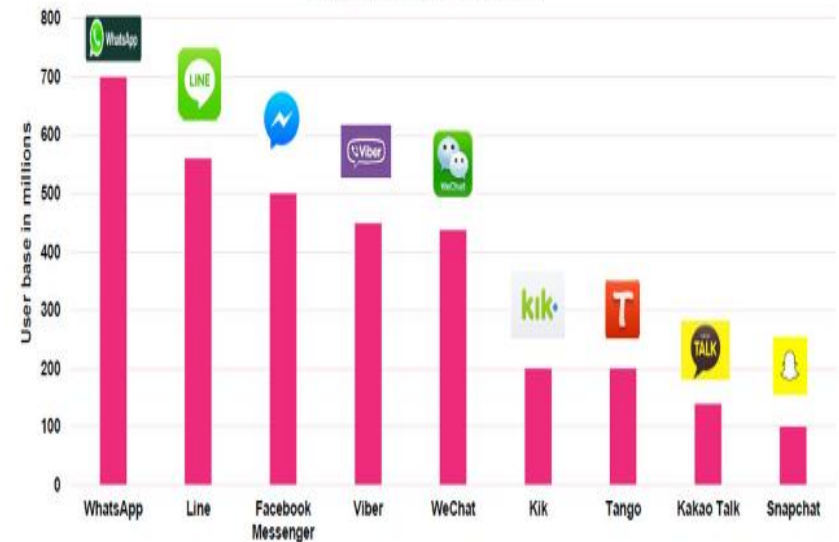
Voice & Messaging

WhatsApp, WeChat, LINE, And Viber
Monthly Active Users (Global)



Global OTT Messaging Services

2014 user base in millions

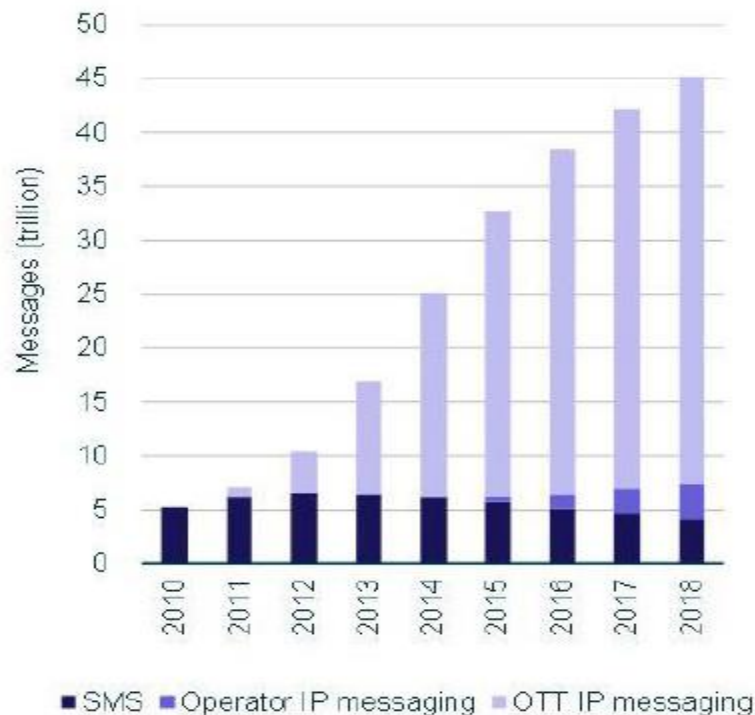


Source: DETECON Consulting & Deutsche Telecom Group, "The rise of OTT players – what is the appropriate regulatory response?", 2014

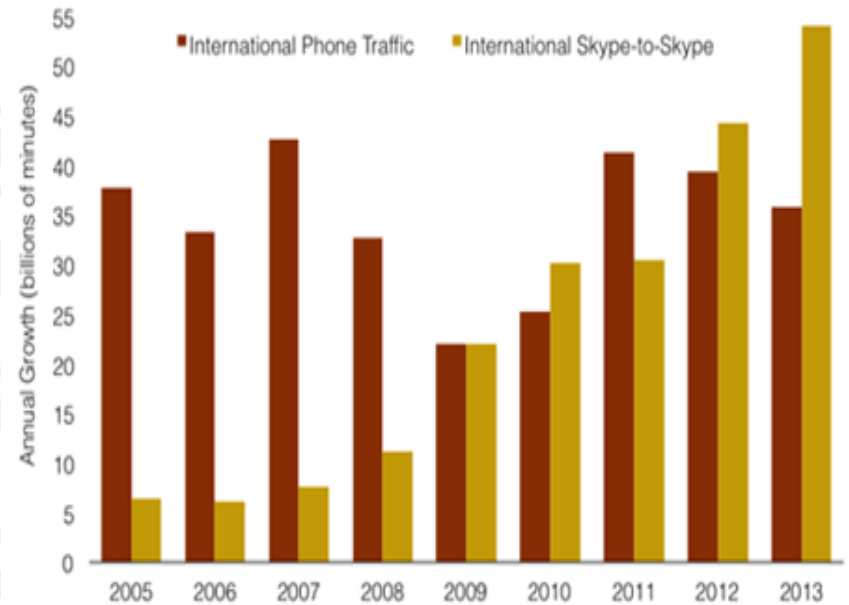
Growing Share of OTT's (2/4)

Voice & Messaging

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



Increase in International Phone and Skype Traffic



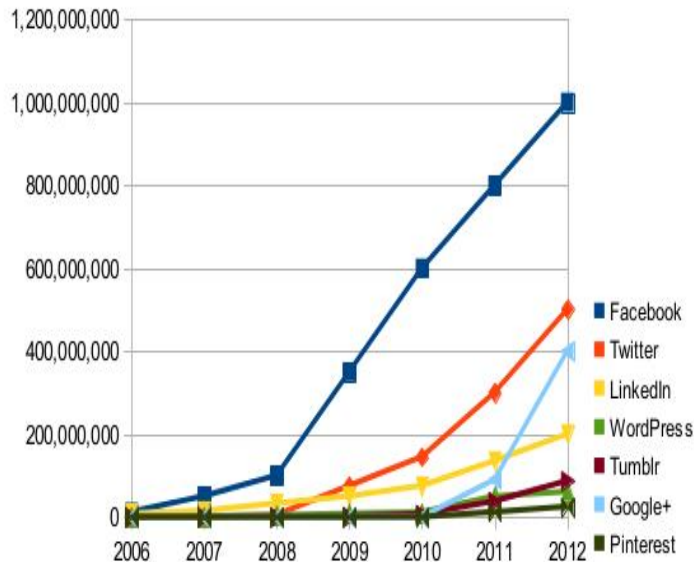
Source: TeleGeography

© 2014 PriMetica, Inc.

Growing Share of OTT's (3/4)

Social Media

Social Media Growth 2006-2012



<http://www.dstevenwhite.com>

TOP SOCIAL PLATFORMS: GROWTH IN MEMBERS AND ACTIVE USERS DURING 2014

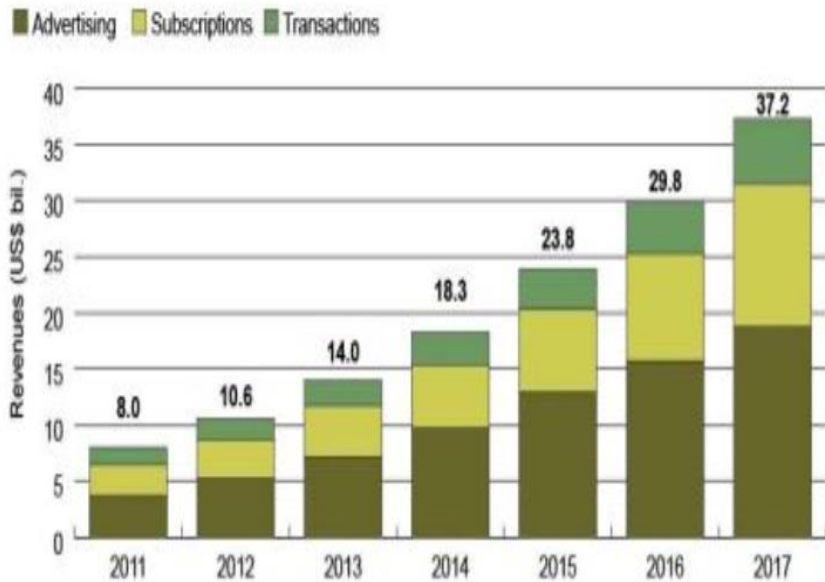


Source: GlobalWebIndex, 2015

Growing Share of OTT's (4/5)

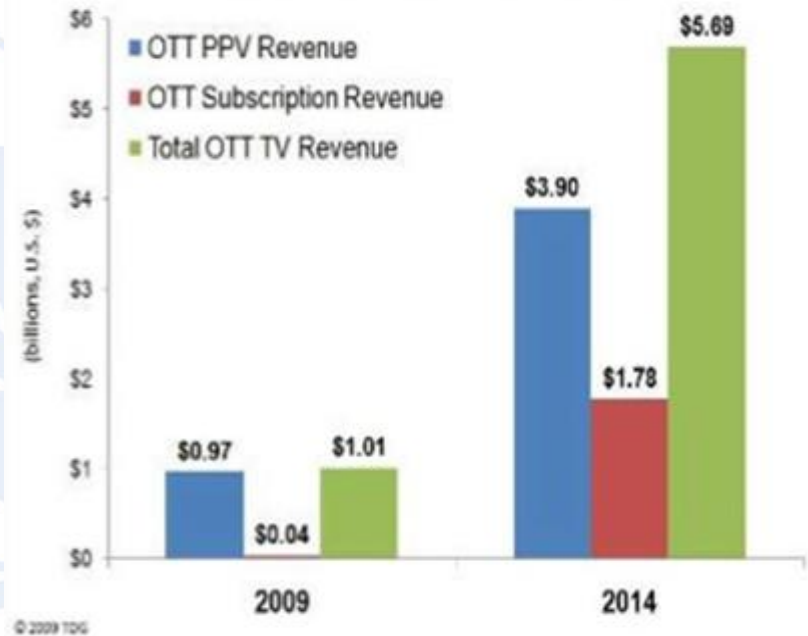
Media & TV

OTT media revenue forecast



Informa Telecoms and Media

Annual OTT TV Revenue - 2009 and 2014



© 2009 TDG

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Economic Impacts of OTT Services (1/2)

At Countries' Level – Opportunities

- ICT Sector Growth (*)
- Optimize Transportation, Save energy
- Productivity Gains, Cost Reductions
- Create new jobs
- ..and **Macro-economic Benefits** :
 - Opportunities in Digital economy for developing Countries
 - Main Benefits for countries where OTTs are based

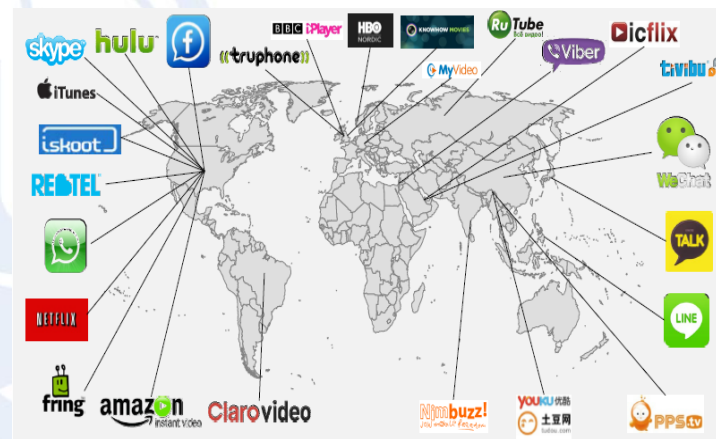


() Driven, in most of Developing countries at more than 60% by telecom Operators*

Economic Impacts of OTT Services (2/2)

At Countries' Level - *Threats*

- Threat on “Vulnerable” Economies, due to imbalance between value creation and value creation : Difficulty for traditional and local companies to compete with global players (Global market, scale effect, power of negotiation, content deals, etc...) (*)
- **Tax Losses**
 - ✓ OTT players, location-agnostic benefit from the ww variable tax rates
 - ✓ Reduced tax resources for “consumer” States since users purchase goods/ services on global tax “free” market



Economic Impacts of OTT Services (2^b/2)

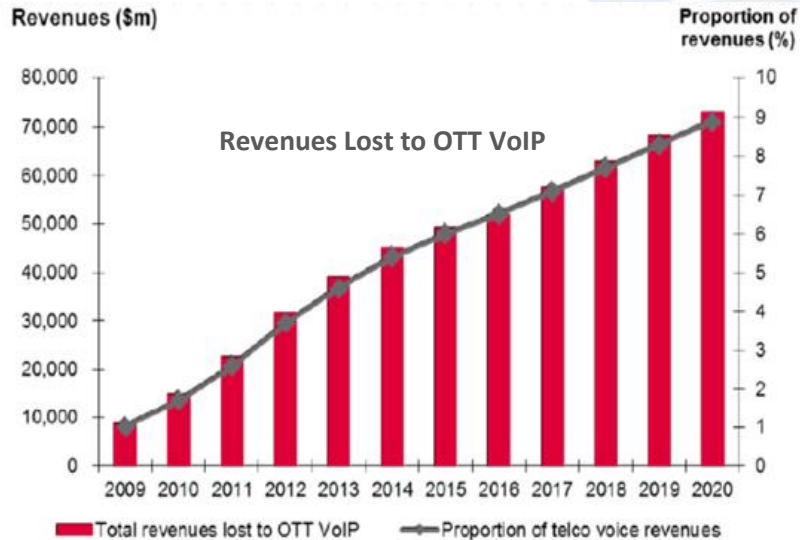
At Countries' Level – Tax vs profit of Major's

| | Capitalisation boursière (février 2015) | CA (Monde) | Profit (Monde) | Impôt / CA (USA) | Impôt / CA (hors USA) | Impôt / profit (USA) | Impôt / profit (hors USA) |
|------------------|---|------------|----------------|------------------|-----------------------|----------------------|---------------------------|
| | Md\$ | Md\$ | Md\$ | % | % | % | % |
| Google | 370 | 59,8 | 14,5 | 5,7 | 2,2 | 26,4 | 8,6 |
| Apple | 748 | 170,9 | 50,2 | 19,1 | 1 | 61 | 3,7 |
| Facebook | 223 | 7,9 | 2,8 | 32,9 | 1,5 | 31,2 | (pertes) |
| Amazon | 175 | 74,5 | 0,5 | 0 | 0,5 | 1,6 | (pertes) |
| Coca-Cola | 183 | 46,9 | 11,5 | 5,8 | 6,3 | 47,2 | 18,8 |
| Pfizer | 216 | 51,6 | 15,7 | 10,5 | 7 | (pertes) | 12,5 |
| GE Company | 223 | 146,0 | 16,2 | -2,8 | 3,4 | -31,9 | 26,1 |
| Procter & Gamble | 203 | 84,2 | 14,8 | 7,7 | 2 | 28,1 | 16,9 |

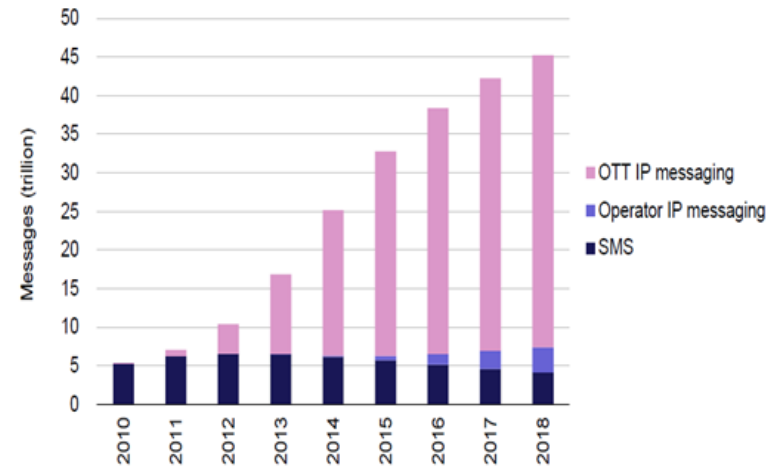
Source : Expert Report For European Commission on Digital Taxation . May 2014.

OTT Impacts on Telecom Operators (1/4)

Loss of Traditional Revenues to OTT



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



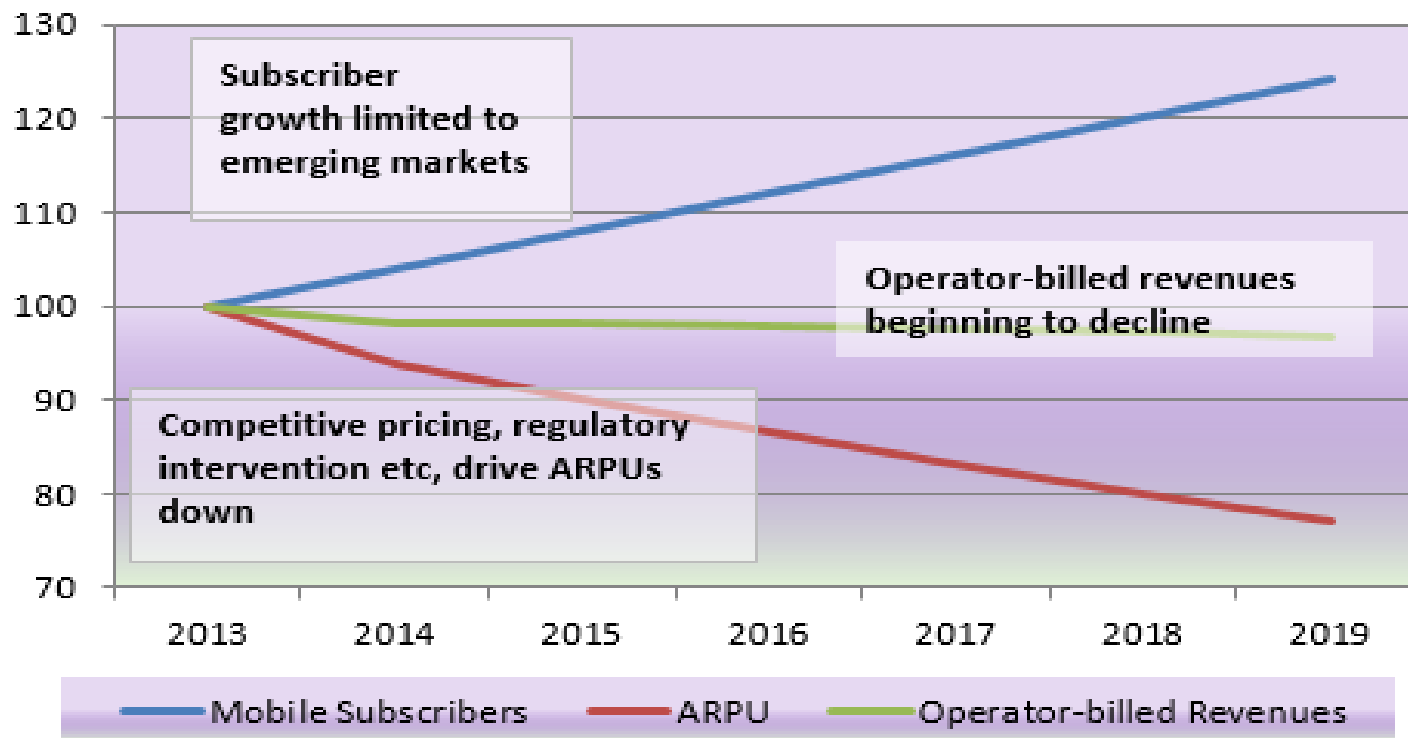
© Analysys Mason Limited 2014

Source: Ovum

- Growth of VoIP CAGR of **25% between 2012 and 2017**
- Loss to OTT Revenues in **2016** expected around **50 B\$** both in voice (**7%**) and messaging (**28%**). Cartesian – Study , 2014

OTT Impacts on Telecom Operators (2/4)

Lower ARPUs but Higher Traffic

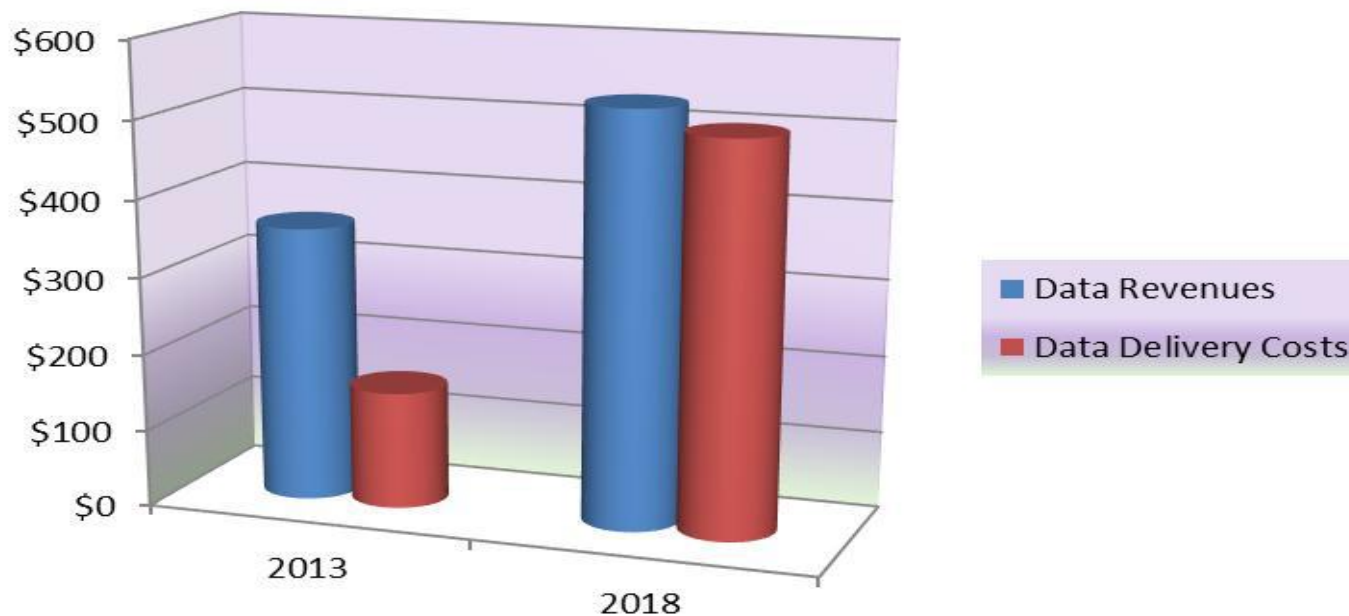


▶ ARPU decline continues, stagnation of revenues

Source : Juniper Research, Oct 2014

OTT Impacts on Telecom Operators (3b/4)

Imbalance Cost vs Revenues - Data

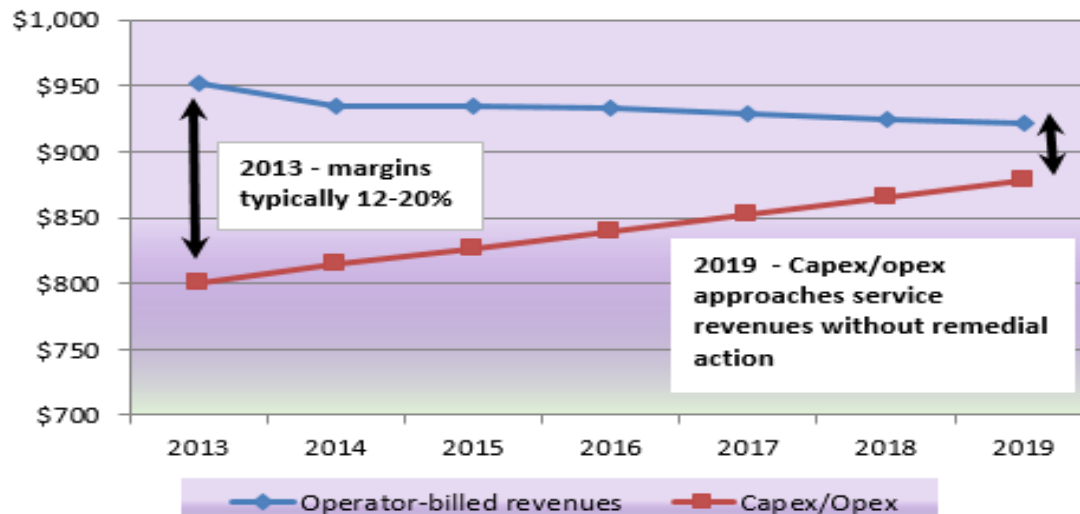


Source : Juniper Research, October 2014

OTT Impacts on Telecom Operators (3/4)

Threat to Investment

Global MNO Service Revenues vs Capex/Opex (\$bn)



Source : Juniper Research, Oct 2014

→ Lower telecom Contribution to the national economy and state income

→ Slower(!) BB -Qos-deployments in rural/low income areas

It is to note that OTT are highly contributing to the global Investment (Data Centers, Servers, F.O Links, Applications dev, etc....)



OTT Impacts on Telecom Operators (4/4)

Virtuous Circle

(Mutual Interest)

While OTT benefit from broadband networks, Telcos also benefit from **increased demand for bandwidth driven by applications. Auto Sustainable system !**

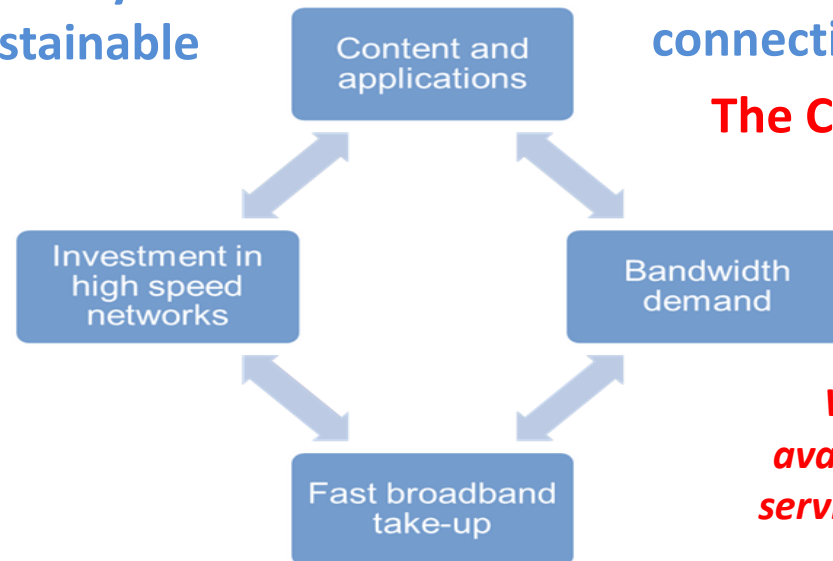
OR

Vicious Circle

Disconnect between Source of Revenues and Costs for any Actor in the Chain

Profit Crunch → less Investment and then less connectivity/usage/Revenue:

The Chain can be Broken



With inevitable impact on availability and Affordability for services to the largest population

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OTT's world



1. No Regulation (own policy/rules)
2. No service license required, no interco Obligation
3. Disruptive models (free, freemium, Ad based etc)
4. The World as Market Place
5. Scalable investment (no obligation of availability)
6. Reduced direct employment
7. IP-based, Internet-based standards (IETF)

Compared ...to Telco's



1. Subject to National Obligations : License, Tax regime
2. Close Regulation (SLAs, USO, Pricing, Control...)
3. High pre-investment required and Local Resources Cost (Frequencies, etc..)
4. Mostly Local Market space and Rules
5. Traditional business models

Regulatory Imbalances (1/4)

Licensing

Operators



OTT Players

Must purchase license from gov. to operate

Often not subject to specific licensing

Accessible Market

Operators



OTT Players

Only serve customers within the regulated jurisdiction

Serve any user, any where

Taxes

Operators



OTT Players

Local and national taxes

Locating operators in low cost locations and tax havens

QoS

Operators



OTT Players

Licenses include requirements for SLAs

- No QoS guarantee
- QoS issues blamed on network provider

Regulatory Imbalances (2/4)

| Pricing Regulation | | Interconnexion | | | |
|---|----|--|---|----|--|
| Operators | VS | OTT Players | Operators | VS | OTT Players |
| Regulators' approval is needed in advance | | <ul style="list-style-type: none"> <input type="checkbox"/> No need for authorization <input type="checkbox"/> Loose agreement is offered which is subject to change at any time | Required as part of regulatory regime → Additional costs | | "Over-The-Top" of the network → no interconnection requirements |

| Net neutrality | | |
|--|----|--|
| Network Operators | VS | OTT Players |
| Best effort data transport without discrimination, independent of source or nature of data | | No obligations (control over content and freedom of choice concerning customers) |

Regulatory Imbalances (3/4)

| Number portability | | USO & similar Fees | |
|--|-----------|---|-------------|
| Operators | VS | Operators | OTT Players |
| Obligation to offer number portability between providers | | Contribution to USO and specific local fees | No |

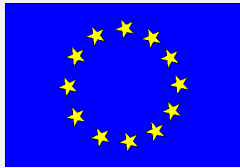
| Infrastructure/Network | |
|---|--|
| Operators | VS |
| <input type="checkbox"/> Unbundling, open access to Infrastructure obligations, | <input type="checkbox"/> Proprietary Infra with no obligations |

Regulatory Imbalances (4/4)

| Public Safety services | | Privacy | |
|------------------------|---------------------|--|--|
| Operators | VS | Operators | VS OTT Players |
| Mandatory | No such obligations | Strict data protection and privacy requirements by Law | Practiced on a limited and generally voluntary basis |

Examples of National Regulation/Legislation (1/6)

European Region



EU

- ❑ Two rules were approved in April 2014:
 1. *to ensure equal access of firms and individuals to online services*
 2. *to harmonize rules across national borders to create a unified European market*
- ❑ Individually, (e.g. in France, Spain), OTT providers have been blocked when offering voice services that connect to the PSTN
 - **Justification:** OTT's are acting in this regard as Telcos and should fulfill the same Telco's obligations (offer emergency services, LI, etc.)

EU is actually working on Digital Agenda 2020 that should address OTT subject)




Examples of National Regulation/Legislation (2/6)

European Region

| | |
|--|---|
|  <p>Netherlands</p> | <ul style="list-style-type: none">❑ Second country globally to include net neutrality principles into a law (2011)❑ Telecom operators are prevented from blocking or charging consumers over and above the regular data charges, for using VoIP based apps and other internet-based communication services |
|  <p>UK</p> | <ul style="list-style-type: none">❑ OFCOM permits experimentation with new business models that rely on certain forms of traffic management (the “best effort” Internet is then protected) |



Examples of National Regulation/Legislation (3/6)

American Region

| | |
|--|---|
|  <p>USA</p> | <p>New FCC draft internet rules were released on March 12, 2015 (will take few years to be finalized)</p> <ul style="list-style-type: none">➤ Objective: ensure reasonable network management (no blocking, no throttling, no paid prioritization) |
|  <p>Chile</p> | <ul style="list-style-type: none">❑ In July 2010, net neutrality principles have been introduced in the National Telecommunications Act❑ “zero-rating” was recently banned in May 2014 |
|  <p>Canada</p> | <p>The CRTC has banned zero-rated mobile video streaming of carriers own services</p> |



Examples of National Regulation/Legislation (4/6)

Asian Region

| | |
|---|---|
|  <p>Singapore</p> | <ul style="list-style-type: none">❑ Specific licenses for VoIP connecting to PSTN❑ Peer-to-peer not licensed, subject to competition law |
|  <p>South Korea</p> | <ul style="list-style-type: none">❑ The KCC announced “Net Neutrality (NN) and Internet Traffic management Guidelines” in 2011 (Transparency, No blocking; No unreasonable discrimination, Reasonable traffic management)❑ It is legal for telecom operators to charge their customers extra fees to use VoIP apps or block their use entirely |

Examples of National Regulation/Legislation (5/6)

MENA Region

| | |
|--|--|
|  <p>UAE</p> | <ul style="list-style-type: none">❑ OTTs blocked because of legal intercept problems❑ Viber App was banned in June 2013 |
|  <p>Egypt</p> | <ul style="list-style-type: none">❑ Legislation expected soon (NTRA), but none at present❑ VoIP using mobile network is forbidden (<i>because international calls have to go via the international gateway</i>) |

Examples of International Legislations (6/6)

MENA Region

| | |
|--|--|
|  <p>KSA</p> | <ul style="list-style-type: none">❑ OTT only allowed if they work with licensed telecoms companies (<i>according to TRA</i>)❑ VoIP defined as a regulated activity |
|  <p>Kingdom of Bahrain</p> | <ul style="list-style-type: none">❑ Voice services connected to PSTN only allowed for license holders❑ Foreign providers not actively marketing their services in the country will not be pursued |

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Challenges for Regulators



“We have to :

- Protect our citizens’ interests,
- provide incentives to the industry,
- attend to national-level needs and issues,
- create and sustain investor confidence, and..
- remain mindful of future needs of the consumers and the industry. “

Dr. Syed Ismail Shah,

Chairman of Pakistan Telecommunication Authority, April 2015

Challenges for Policy Makers



Affordable Access Africa

Affordable Access is not just a matter of **connecting people** at the ‘**Bottom of the Pyramid**’ with the cheapest devices and **lowest price/quality** connectivity. African connectivity is expensive in relation to income and in relation to global ‘like for like’ price comparisons. Businesses and business people in Africa do not want basic services, they want effective services at affordable rates and many of the answers lie within the Continent. **A coordinated and concerted effort by Policy Makers, Service Providers, Investors, Solution Providers and Major end Users will move Africa towards the goal of making Access Affordable, bringing all of the associated Socio Economic benefits**

Moto of IAD Summit 2015 Victoria Falls, Zimbabwe

Some Recommendations - General



At National Level :

Assessment of the on-going Transformation of Digital Economy and its Impact on National Economy and Population



At TRA Level :

- Perform consistent Study on the on-going sector transformation and the impact on the sustainability and affordability of access to service/quality to largest population)
- Organize Public debate for appropriate framework (public consultation, etc..)



At Service Providers Level :

- Collect, measure and share consistent data on the impact of sector evolution on their business and their future.

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Conclusions



- ❑ The Important evolution of Data communication as well as other technological, economical and appropriate regulatory role has led to the development of OTT Services worldwide and the very positive global Eco-system growth.
- ❑ This development have raised new Challenges for the national economies regarding the sustainability of digital eco-system. **The most visible today is the impact on Telecom Operators business model.**
- ❑ National regulators are in front line to **establish an adequate regulatory framework** which protects the interests of all stakeholders, guarantee fair competition and ensure sustainability of the evolving ecosystem.
- ❑ Due to the global aspect of these challenges, NRA and States need to work in **close cooperation** with Operators and other stakeholders.

Questions



- Is there an Issue today ?
- If so, have we sufficient visibility and data to act ?
- Shall such issue be considered as pure business matter (i.e to be solved between business actors) or shall the impact on the citizens and the national economy require implication of National Authorities (NRA,..) ?
- To what extent a national authority can deal alone with such issue (at national level) considering that the actors and markets are being more and more Global ?
- What role can Regional and international Organizations play in this regard ?

Our World's Continuous CHANGE & EVOLUTION

It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change !



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TELECOMMUNICATIONS/ICTS FOR Arab Region***

(Manama, Bahrain, 29 November 2015)

Thank you for your Attention

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Main References and useful documentation

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