

Regional Standardization Forum
Emerging Economic,
Regulatory and Policy Trends
in a Fast-Changing Digital World

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“Impact of OTTs: A PNG Case”

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50 | ITU-T
REGIONAL
GROUPS
1968-2018

Outline

1. OTTs: Benefits and Issues
2. PNG Case



PNG At Glance

Land

463,000 sq. kilometers, 30% is Inhabited Land
Eastern part of the 2nd largest Island in the world

Population & Culture

800+ languages spoken by nearly 8 million people, i.e. 0.1% of world's population, we speak over 12% of known languages in the world.

PNG

Biodiversity

Over 200,000 known species
World's tallest tree, smallest parrot, longest lizard, largest pigeon and largest butterfly are all found in PNG.

Economy

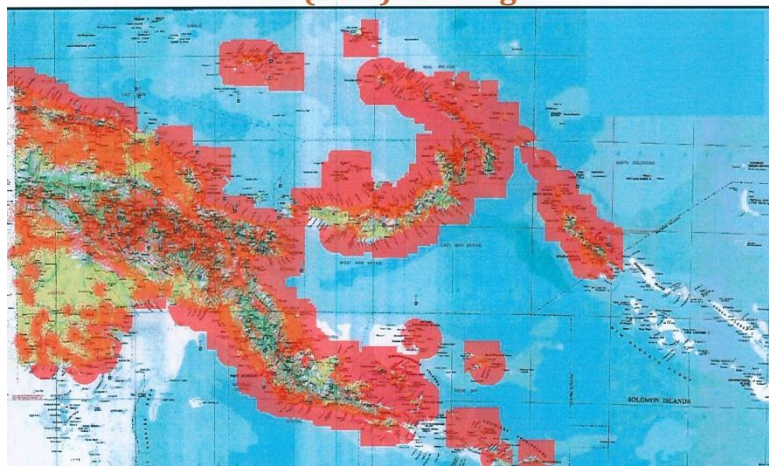
Real GDP PGK69 billion (2017)

Nearly 80% population in rural areas engaged in subsistence-level activities

Source: PNG Treasury

PNG ICT

2G (GSM) Coverage



3G (UMTS) Coverage



Total Subscribers: 3.2 million

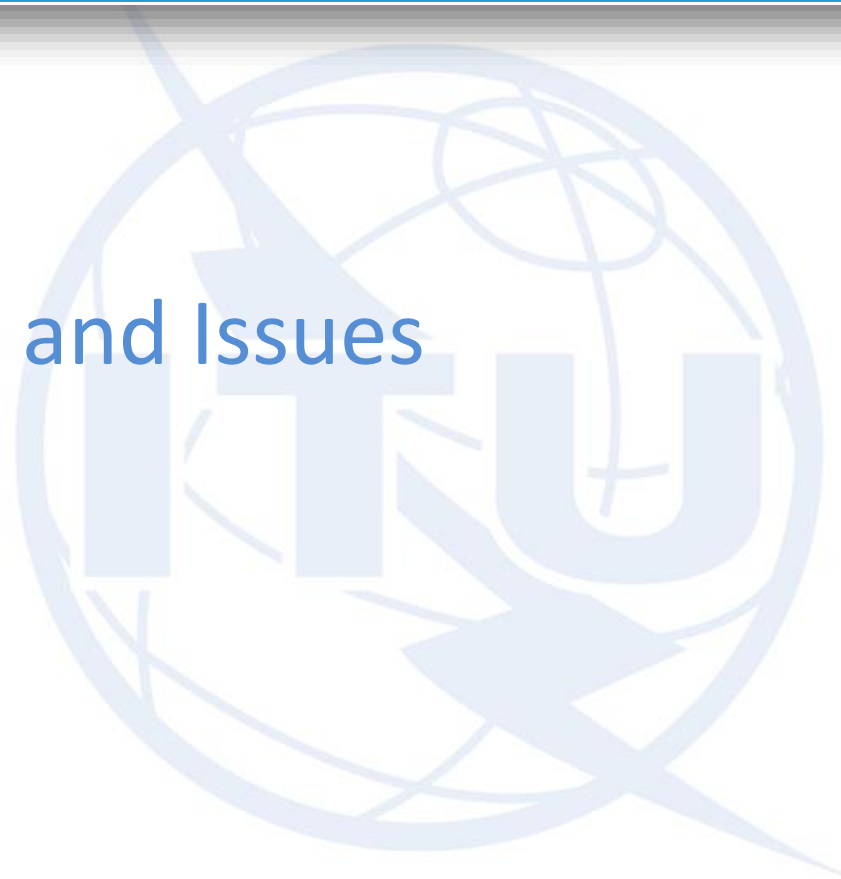
Mobile Broadband Subscribers: 0.9 million

4G (LTE) Coverage



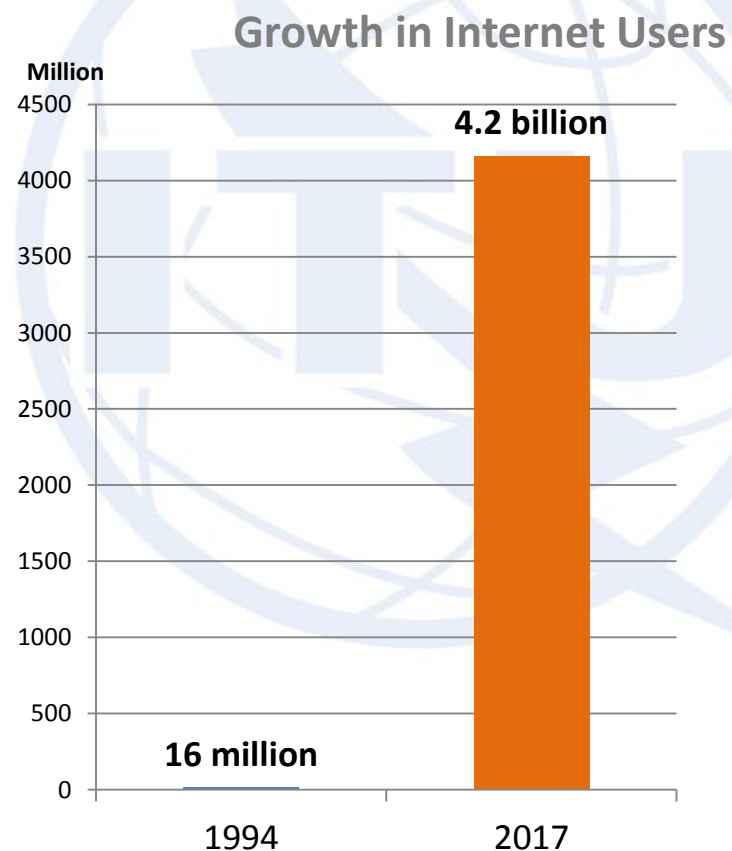
Source: NICTA

1. OTTs: Benefits and Issues
2. PNG Case



OTTs: Benefits & Issues

- Background
 - Growth in demand for ICT services



Source: ITU

OTTs: Benefits & Issues

- Definition of OTTs



defines OTT as;

“An application accessed and delivered over the public Internet that may be a direct technical / functional substitute for traditional international telecommunications services (Determined Recommendation ITU-T D.262, 2018)”

- ITU uses a limited definition of OTT services. However, from common literature, a more broadened definition would include those internet players that have significant impact on the network infrastructures and the economics of telecom operators:

	Examples		TYPE
Over IP Communications Services		Skype, WhatsApp, Viber, Facebook Messenger, WeChat, Line	OTT
Media Services		Youtube, Netflix, Spotify, Watchever	OTT
Internet Players in Commerce		Ebay, Paypal, Amazon, Alibaba, etc.	Internet Players
Social Networking/Media		Facebook, Twitter, LinkedIn,	Internet Players

OTTs: Benefits & Issues

Common Benefits & Opportunities

- **Improved Societal welfare**
 - Main beneficiaries of OTT services are consumers. For them, OTT services have clear advantages in terms of cost, convenience, amenity and innovation.
 - Consumers benefit from reduced cost (zero cost of freemium services) of the alternative online voice & messaging services.
- **OTT services exerting competitive pressure on traditional services is also a good thing for a number of reasons;**
 - OTTs can play a crucial role in exerting competitive pressure on price of traditional telephony services.
 - Lesser effort or interventions by regulatory authorities may be required to restore price distortions in the traditional telephony markets (voice & SMS) as more and more users go IP for their voice and messaging needs.
 - Authorities can focus on security, privacy and quality of service issues that are concerns for OTT services.

OTTs: Benefits & Issues

Common Benefits & Opportunities

- **Increased use of data volumes by OTT services may result in,**
 - Improved revenue stream for telecom operators on the data, **but** it can also put significant pressure on critical network infrastructure that telecom operators may not be prepared to handle,
 - Infrastructure providers are having to invest massively in higher and higher capacity infrastructure (both access and core) to meet this demand.
- **Impact on Network Infrastructure Investment**
 - Telecom operators continue to make most of their revenue through the traditional services. A fall in revenue in their core business chills new investments in the network infrastructure.
 - The impact is aggravated by the fact that many Telcos' business models include flat rate data plans
 - Telecom operators will have to adapt their business models

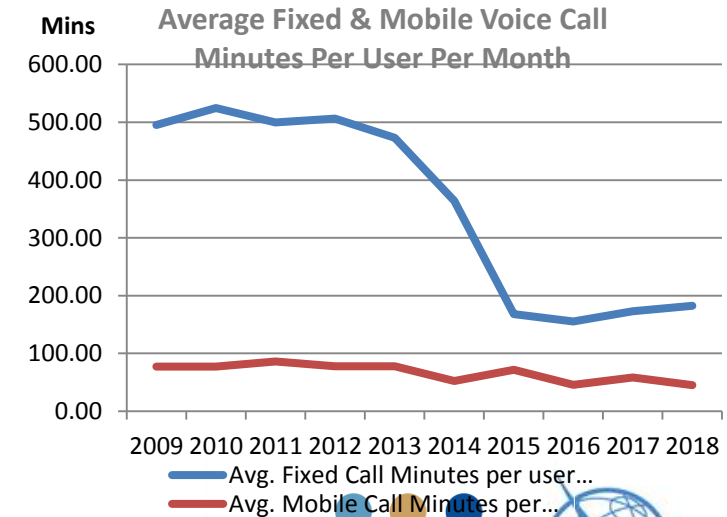
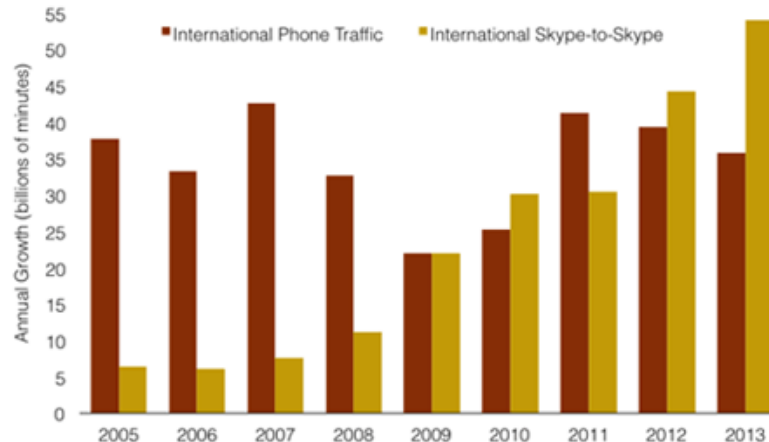
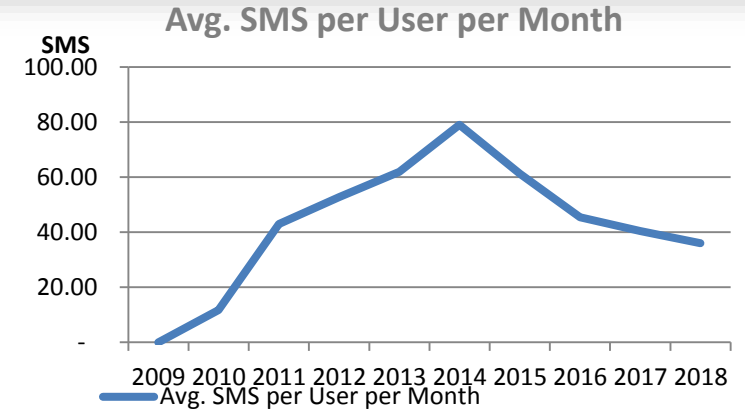
Common Issues

Substitution Effects

- It is a widely accepted phenomenon, that consumers substituting traditional telephony and broadcasting services for OTT services resulting in loss of revenue for telecom operators.
- “ITU-T Economic Impacts of OTTs Technical Report 2017, concludes that, “the usage trends... are strongly suggestive of substitution that is consistent with the concerns over revenue expressed here”.
- However, “the cause is not proven, but the observed trends are suggestive of substitution effects”.

- The TeleGeography report is from 2014 and a lot has happened in the past 4 years
- There is no doubt in 2018 about the substitution effect of OTT for some users – however, there is a complex situation here, namely:
 - There may be continuing growth of legacy services
 - There may be some substitution – it is undeniable in the case of SMS, where social networking and other OTT messaging services have eroded the SMS usage levels globally
 - But users might be encouraged to use voice and messaging services far more with impact for both legacy and OTT services.

OTTs: Benefits & Issues



Source: TeleGeography

OTTs: Benefits & Issues

Common Issues

- **Regulatory Imbalance**
- Concerns are that OTT operators are not subject to the same level of national regulatory constraints, license fees and taxes, which are imposed on telecommunications network service providers
- OTTs are not subject to service standards including customer service and performance standards

Obligated or Constrained by National Regulation?		
Telecom Operators	Area of Regulation	OTT providers.
✓	Licensing, fees & taxation	✗ Limited/Non Existence
✓	Privacy, security and QoS	✗ Limited/Non Existence
✓	Interconnection and Network Neutrality	✗ Limited/Non Existence
✓	Universal Services Obligation and Access to Emergency Services	✗ Limited/Non Existence

OTTs: Benefits & Issues

Regulatory Options

- **What must be done to address the downside effects of OTTs?**
- Some regulatory options can be considered;

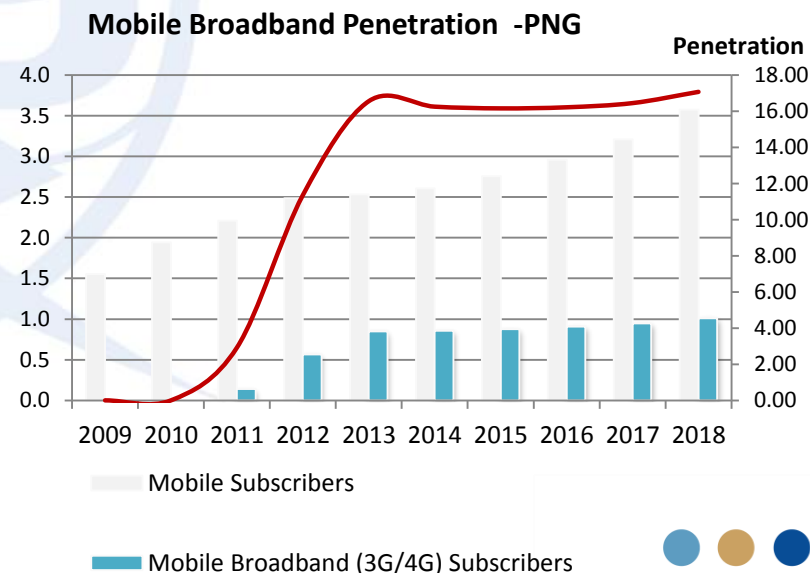
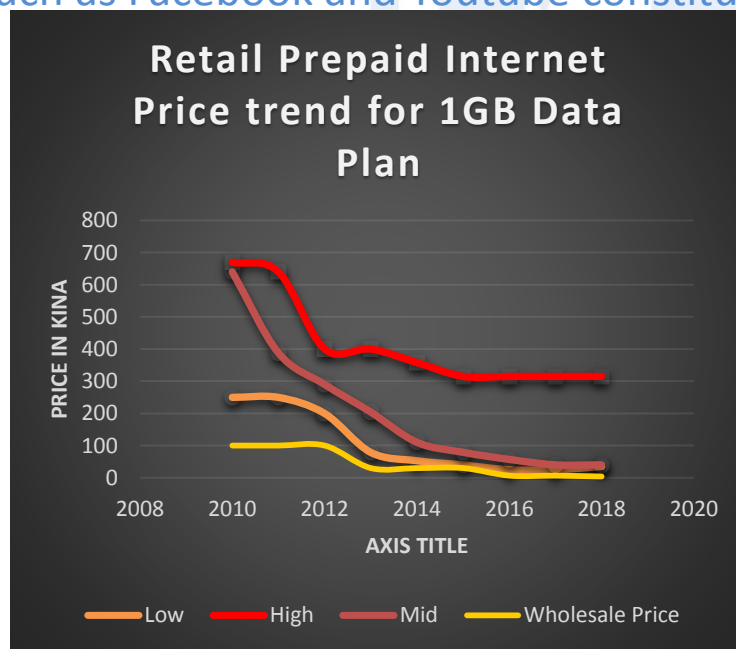
Regulatory Options	
NO REGULATION	to do nothing and let the market adjust to the development of OTT services in its own way and at its own pace
LIGHT-HANDED REGULATION	to lay down some very broad principles that relate to consumer protection and competitive fairness (the latter would include net neutrality policies);
	to review and selectively repeal existing regulation that prevents network operators and legacy service providers from effectively competing or cooperating with OTT service providers;
	to seek to impose some regulatory constraints on OTT service providers, in exchange for allowing them to operate over national telecommunications networks
FULL REGULATION	to subject all OTT players to the same level of regulations as traditional telecom operators.

1. Brief Discussion on OTT Issues
2. PNG Case



PNG Case – Broadband Penetration & Cost

- Steady (but slow) growth in broadband penetration as well as reduced cost of accessing broadband over the past few years have contributed to a high level of demand and consumption for data services.
- OTT services such as Facebook and Youtube constitute a significant proportion of data volume consumed



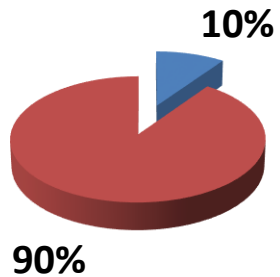
Source: NICTA

PNG Case – Growth in Demand for Data

- Demand and consumption for data services has grown exponentially in the recent past
- Since 2011, when mobile broadband services was initially launched, total volume of data consumed increased from 29 Terabytes to 7 Petabyte in 2018
- Most data today is consumed using mobile devices

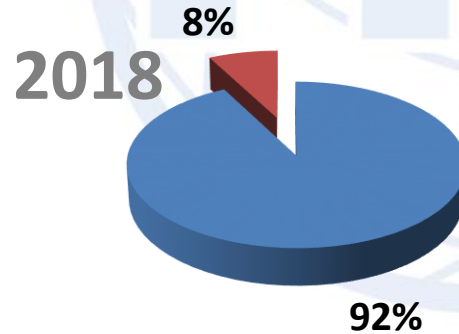
Proportion of Data Usage by Mobile Devices

2011

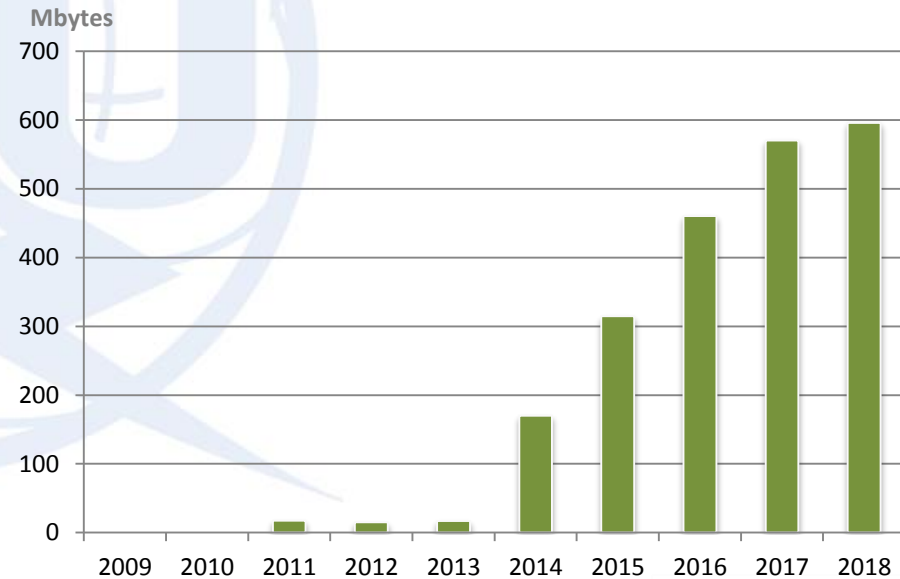


■ Mobile
■ Fixed

2018



Avg. Mobile Data Usage (Megabytes) per User per Month

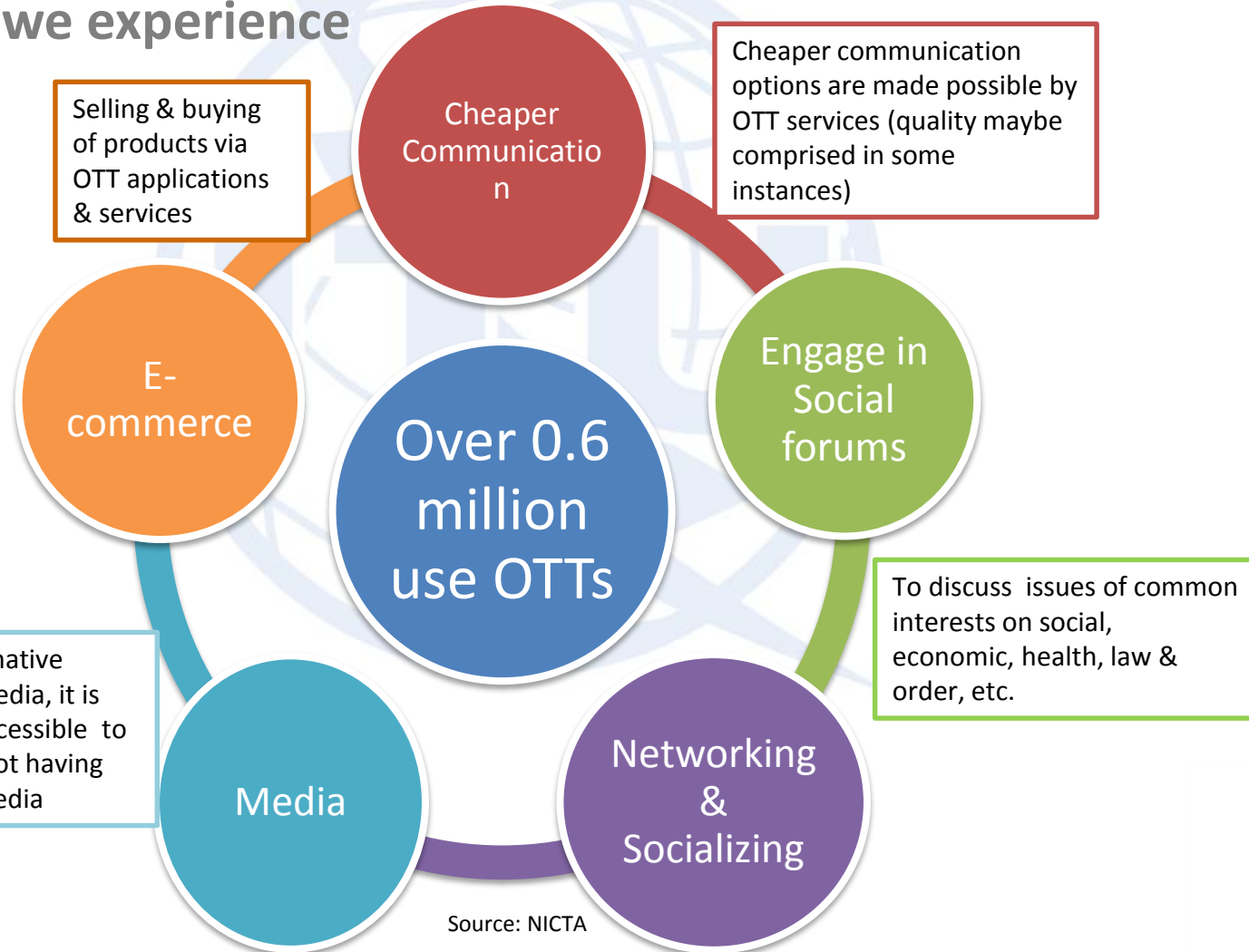


■ Avg. Mobile Data Usage (Megabytes) per User per Month

PNG Case – Benefits and Opportunities

- Benefits as we experience

PNG society has immensely benefited from OTT applications and services.



Source: NICTA

PNG Case – Benefits and Opportunities

- Benefits as we experience

OTT services are also exerting competitive pressure on traditional services

-In smaller markets such as ours in Pacific Island countries where market is dominated by a single operator or few operators, OTTs can play a crucial role in exerting competitive pressure on price of traditional telephony services.

Competitive Pressure

26 toea (US\$0.08)/SMS (2011)

3 toea (US\$0.009)/SMS (2017)

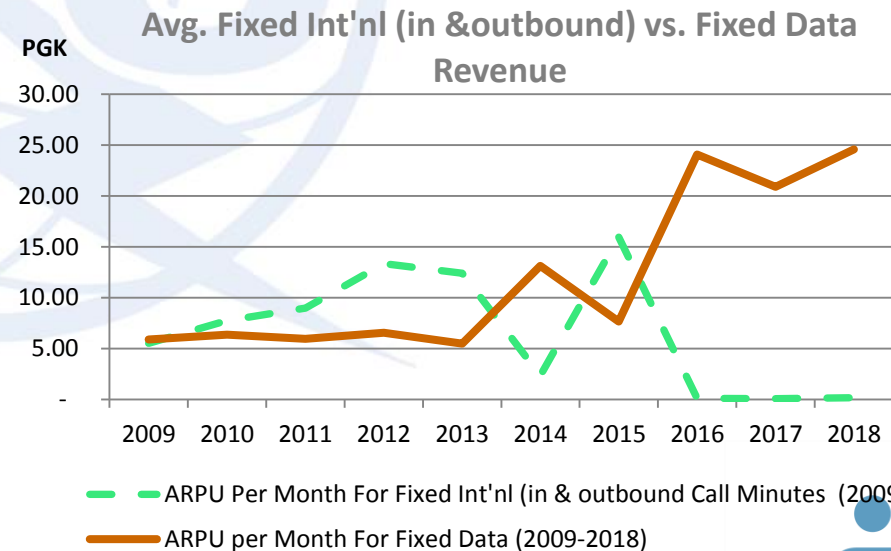
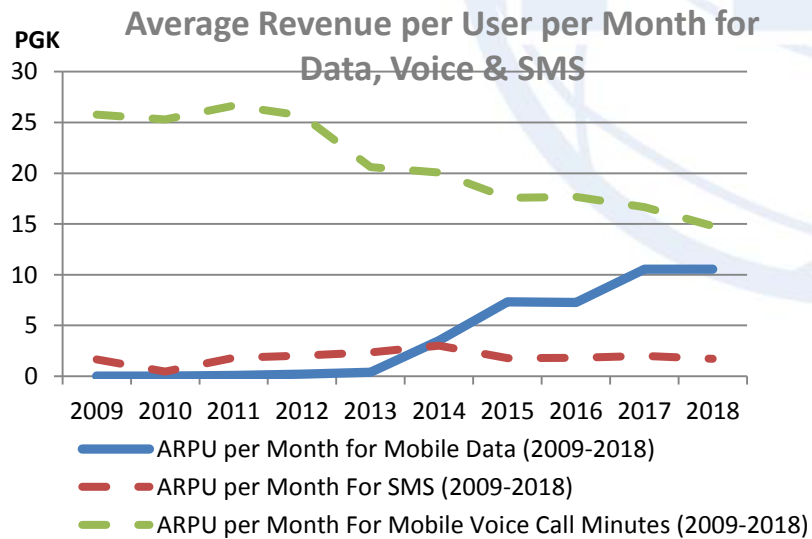
Average reduction in retail price per SMS

Source: NICTA

PNG Case – Issues

Decline in Voice & SMS revenue & Growth in Data Revenue

- Much similar to the global phenomenon, PNG's traditional voice & SMS traffic & revenue are in decline
- We cannot confidentially say that this is a result of OTT services cannibalizing traditional voice & SMS revenue.
- **On the other hand,** growth in average revenue per user for data services increased steadily.
- It can be said that, decrease in voice & SMS revenue most likely are compensated by growth in data revenue.



Source: NICTA

PNG Case – Issues

Security and Privacy

- Issues on consumers privacy and security when using OTT services are also concerns for PNG.
- Our level of capacity to detect and address such issues are limited to none, which is a great cause of concern.

Quality of Service

Quality of services for voice of IP services are still improving in PNG.

A related issue: Abuse or irresponsible use of OTTs such as social media has recently been a concern. It encroaches on the privacy of OTT users and exposes vulnerable users to exploitation and abuse.

PNG Case – Regulatory Issues

- At the moment there is no specific regulation targeting OTT services. For two main reasons, 1. Our regulatory regime was designed at that time for only legacy networks, and 2. Given the complexity of OTT issues and their business model, its pretty difficult to develop regulations or understand how best to deal with OTTs when necessary.
- Obviously the benefits of OTT services have greater positive effect on the PNG society at large. Any regulation must enhance, not suppress them.
- OTTs are here to stay. Hence , telecom operators will have to adapt to the changes to come up with proper business models that work for them. And we are here to help them achieve that.
- Despite a few concerns in the areas of privacy, security and QoS, it is too early to say that regulating OTTs is the best approach to take given that the consequences are untested, and bad outcomes may affect the numerous consumer benefits PNG users are enjoying at the moment.
- Going forward, we are open to the wisdom & experience of others to understand how they address or a thinking about addressing some of these issues .

End of Presentation

- THANK YOU!

