OTT Overview

ATRC: the Okura Prestige, Bangkok Thailand
12-13th September 2017

Dr Peter Lovelock
Director, Technology Research Project Corporate (TRPC), Singapore
Director, TRP, University of Hong Kong
Associate Professor, Singapore Management University
Overview

1. OTTs: Competition and Innovation

2. How to Understand OTT Contributions: content, networks, economic growth

3. OTT Disruptions: To Manage or To Nurture?

4. Developing a Framework for OTTs

5. OTTs: To Regulate or Not to Regulate?

6. Key Considerations
OTTs Drive Competition and Enable Innovation
Some of the Biggest Companies in the World Today

- **skype**: The largest international **voice traffic** provider owns no network
  - huge contributor to telco settlement fees in most countries

- **NETFLIX**: The fastest growing **television** network lays no cables
  - huge driver of ‘triple-’ and ‘quad-play’ subs services for local service providers

- **YouTube**: The most watched **video**-sharing portal created no video content
  - significant driver of mobile vdo consumption... in particular in emerging economies

- **facebook**: The most popular **media** provider creates no content
  - huge driver of mobile subs and social connectivity

- **Alibaba Group**: The most valuable retailer has no inventory
  - has created a platform that consumers almost never have to leave
  - e-commerce and telco investor

- **UBER**: The world’s largest **taxi company** owns no vehicles

- **Instagram**: The most valuable **photo company** sells no cameras

- **airbnb**: The largest **accommodation** provider owns no real estate

Didn’t exist 20 years ago!
Equally Enabling *Local Players* to Provide Innovative and Localized Services….

- Myanmar-based MySquar’s VoIP app, CallHome, targeting Myanmar and other Southeast Asian markets.
- VOD streaming service joint venture between Singtel, Sony Pictures, and Warner Entertainment.
- Singapore developed live video streaming app with over 150 million subscribers and over 45 million monthly active users as of July 2017.
- Vietnamese company, specializing in digital content and online entertainment, social networking, and e-commerce.
- E-commerce platform with sites in ID, MY, PH, SG, TH, VN, TW, HK.
- Ride-hailing service originating from Malaysia which has expanded to ID, PH, SG, TH, VN.
- Indonesia-based photo-sharing app PicMix has an international user base of 27 million.
- Manila-based FlySpaces aims to help SMEs with shared accommodation for office spaces.
EXAMPLE: Go-Jek Created to Fulfil the Gap in Public Transport for Low Cost on Demand Rides

Expanded services now includes logistics, payments, food delivery, laundry, massage, ticket purchasing, auto mechanic services and many more

From 2010 to present

20 motorcycle riders → Over 200,000 motorcycle, cars, and truck drivers
EXAMPLE: Vietnam’s Local Language Online Education Platforms

GiapSchool created to fulfill demand from students and young professionals in Vietnam for high quality local language MOOCs available on multiple platforms.

Founder, Dr Giap’s plan:
• Initially translate scientific and technical books from English to Vietnamese
• Has signed up 100+ lecturers to provide online lectures in variety of subjects

In Japan, JMOOC – formed by unis and corps coming together to provide in Japanese – has 143 certified courses, 250,000 unique learners, with 610,000 course enrollments.
• flipped classroom (students watch lectures at home and do homework in class with guidance from classmates and teachers)

In Korea, online lecturers can make up to $4M annually, and routinely make hundreds of thousands of dollars.
EXAMPLE: Myanmar’s E-commerce Platforms Enabling and Accelerating SMEs

- Local B2B marketplace BaganTrade features some 600 local companies, as a platform for local producers to reach larger markets with 30,000+ monthly page views.
- In addition to being a catalyst for SME income growth, BaganTrade educates local digital literacy (e.g., e-commerce strategies) – paving the way for further SME development through innovative e-commerce solutions and deployment.

- Social commerce company MySQUAR, offers a range of localized smartphone applications including m-commerce, voice calls and games
- Reached 6M users by Oct 2016
- Demand encouraged the company to develop new services such as localized VoIP and mobile payments solutions
... Enabling Local Players to *Expand* and Access Other Markets

- *iflix* distributes Western and Asian dramas
- Partnerships with over 150 studios and content distributors globally
- Includes MGM, Disney, Warners, Paramount, NBC Universal, Fox, CBS, BBC, Sony, Discovery, etc

*iflix* now available to 1 billion people across Asia and MENA
What we talk about when we talk about OTTs

• OTTs are at the vanguard of much of the Digital Economy, particularly for consumers (eg: healthcare, e-learning, financial products, e-commerce) in Asia

• Digital platforms change the economics of doing business across borders, bringing down the cost of international interactions and transactions.

• They create markets and user communities with global scale, providing businesses with a huge base of potential customers and effective ways to reach them.

• Small businesses become “micro-multinationals” by using digital platforms such as eBay, Amazon, Facebook or Alibaba to connect with customers and suppliers in other countries...

• … and the ability of small businesses to reach new markets supports economic growth everywhere.

• But more than this, individuals participate in globalization directly, using digital platforms to learn, find work, showcase their talent, and build personal networks.

“More than 1.3 billion people have international connections on social media, and more than 450 million take part in cross-border e-commerce. Data flows now account for a larger share of GDP growth than global trade in goods.”
For Indonesia: *Potentially* Huge Economic Growth

**MARKETPLACES & PLATFORMS TRANSFORMING COMMERCE & GROWTH**

- **Consumer Access**
  - Full Stack of Services
  - Market Intelligence
  - Customer Protection
  - Education & Training

- **Businesses Reach**
  - Digital Marketing
  - Expanded Market Reach
  - Network Multiplier Effects
  - Enhanced Credibility

**POTENTIAL ECONOMIC IMPACT**

- **>100 MILLION** newly included individuals
- **22% increase** new jobs
- **GDP Growth:**
  - *additional 2.8% pa*
- **E-Commerce Growth:**
- **80% growth** revenues for SMEs
For ASEAN: Potentially Transformational Impact

**MARKETPLACES & PLATFORMS TRANSFORMING COMMERCE & GROWTH**

- **Consumer Access**
  - Full Stack of Services
  - Market Intelligence
  - Customer Protection
  - Education & Training

- **Businesses Reach**
  - Digital Marketing
  - Expanded Market Reach
  - Network Multiplier Effects
  - Enhanced Credibility

---

**POTENTIAL ECONOMIC IMPACT**

- **250 MILLION** newly included individuals
- **95 MILLION** new jobs
- **GDP Growth:**
  - $2.6Tr (2016) → $5.1Tr (2020) → $6.8T (2025)
- **E-Commerce Growth:**
  - $15.5B (2016) → $90B (2025: BAU) → $381B (2025: Pot)
- **$11 BILLION** annual reduction in govt leakage
- **1.5x HIGHER** total factor productivity

---

**THREE REQUIRED BUILDING BLOCKS**

- Widespread Digital Infrastructure
- Dynamic and Competitive Services Market
- Compelling Alternative Digital Services and Products
How to Understand OTT Contributions?
on content, network and overall economic and social growth
The Acceleration of Content Creation ...

OTT services enhance the value of networks by creating consumer demand for last mile broadband capacity.

User demand for content

Infrastructure expansion

Adoption

A Virtuous Cycle of Growth for both OTTs and Telcos

Source: TRPC
Policies promoting a virtuous cycle of growth increased broadband providers’ investment by **USD212 billion** between 2011 and 2013

More than any three-year period this century...

.. In the last 3 years that doubled

By 2014, OTT providers had invested **more than USD7.7 billion globally** in data centre networks, submarine cables, and domestic data transport and delivery services

Cisco forecasts that **71% of all Internet traffic** will cross Content Distribution Networks (CDNs) by 2021, up from 52% in 2016

---

**Asia Pacific Average Network Connection Speeds (Mbps)**

- Mobile network
- Fixed broadband
- Wi-Fi network

**APAC Internet Traffic, % Growth Y-o-y**

- Content delivery network internet traffic
- Monthly consumer internet video

*Source: Cisco VNI 2017, TRPC*
Boosting the use of digital technologies, including social media and e-commerce, could increase Indonesia’s annual economic growth by 2%, generate up to 80% higher growth in revenue for SMEs and also make them 1.5 times more likely to increase employment.

Entertainment, social media, news and online games are the initial drivers of adoption.

Locally relevant content helps as seen in Cambodia’s rapid growth in penetration rate after Facebook in Khmer was launched.
One study found that a 10% increase in Rich Interaction Applications (RIA) usage added an average USD5.6 trillion in global GDP, far exceeding the economic benefits of basic telecom services, including:

- **E-commerce** – enables SME access to global markets
- **E-health** – extending healthcare services to the un- and under-served
  - Reducing waiting times in congested urban areas
  - Establishing the basis for transforming to home care from institutional care
- **E-education** – enabling people, including those from marginalised groups, to access quality education
  - Enabling the prospect of affordable life-long training and skills upgrading
  - Enabling transformation of education to personalized, accelerated, learning
- **E-government** – increasing citizenship engagement
  - Increasing government reach
  - Increasing delivery of services (e.g. e-voting, e-filing)
  - Increasing flexibility and nimbleness of government
- **E-wallets and E-finance** – boosting financial inclusion by bringing formal financial services to areas unserved or underserved by physical banks
EXAMPLE: E-health in Indonesia

- There is a maldistribution of specialist doctors in large countries, especially affecting rural areas.
- In Indonesia, 95% of households are located more than 5km away from a health facility, and health expenditure is less than 5%, with 40% of population uninsured.

**HaloDoc** connects users to a network of 20,000 licensed doctors, 1,000 certified partner pharmacies through medical delivery service ApotikAntar, and licensed medical laboratory services.

- E-health in Indonesia is expected to grow at a CAGR (2016-2020) of 13.9% to reach a market volume of **USD99m in 2020**.

Bunda Medical Centre’s deployment of **Philips' Mobile Obstetrics Monitoring** solution increased early detection of high-risk pregnancies 3-fold and helped expectant mothers to receive necessary treatment for a safe delivery. Within the 1-year pilot programme, not a single woman died from preventable causes related to pregnancy and childbirth through early monitoring and risk stratification.

In Vietnam, the **Digital Immunisation Registry by PATH** set up a web-based application that allows local medical staff to use smart phones in managing individual immunisation records and vaccine deliveries. Within a year, it reduced waiting times from 1 week to 30 minutes, people vaccinated on schedule increased 14%, and newborns were registered 8.5 days after birth on average, rather after 5 weeks.
Example: E-commerce in Thailand

- Thailand’s e-commerce market is poised to **grow to USD123 billion by 2020**, almost double from its size of USD72 billion in 2016.

- Over 50% of e-commerce purchases are made over mobile.

- Thailand is world’s largest social commerce market with **51% of online shoppers having purchased directly via social media**.

- C2C social commerce conducted over platforms such as Instagram, Facebook and Line contribute to **one-third of total Thai e-commerce gross merchandise value (GMV)**.

Communications platform **Line** has become a key channel for e-commerce companies to communicate with their Thai consumers.

Its **Line@** platform allows SMEs to use a familiar interface to reach a wider audience by pushing content including market material to users that subscribe to their accounts, for no fixed monthly usage fees.
New businesses are often required to seek multiple regulatory approvals and licenses, which often involve complex and time-consuming processes.

To start a public entertainment outlet, for example, licences need to be approved by at least seven agencies regulating business registration, use of premises, food hygiene, liquor distribution, fire safety and tax collection.

Other examples of e-governance in Singapore are MyInfo, OneInBox and eCitizen portal. Users can use these services to carry out one-stop government transactions and to access government-related information that concerns them.

The Singapore government has developed more than 300 mobile services that help citizens access government services with greater convenience.

The Singapore government’s online application system for integrated services, Online Business Licensing System (OBLS) – now LicenceOne, reduced the average licence processing time from 21 to 12.5 days, and new business registration reduced from 5 days to just 2 hours.

This resulted in estimated savings of SGD11.4 million in just its first year.
EXAMPLE: E-wallets in Myanmar

- Formal financial services are believed to account for less than 10% of Myanmar’s real GDP, with the Burmese people having shied away from an inefficient and over-regulated banking and finance sector.

- The World Bank estimates that 92% of Burmese rely on their own funds for business operations, and less than 20% of the population have access to any form of formal financial service.

Mobile financial service Wave Money was able to sign up more than 100,000 users in three months by addressing gaps in the formal financial sector.

For example, Wave Money has 75% of its activity occurring outside standard banking hours.

In the Philippines, PayMaya, which launched in Sep 2015, had a million users and processed around USD4 billion in transactions by end-2016. The millennial market accounts for more than 60% of PayMaya’s users.

Bangko Sentral ng Pilipinas (BSP) aims for e-payments to have a 20% share of the total payments industry by 2020.
Financial Sandboxes

- FinTech Regulatory Sandboxes serve as accelerators for technological innovation, and are increasingly being established by financial regulators around the world.

- As innovation accelerates, the Sandbox approach could become a permanent fixture, enabling regulation to evolve with better information about technology and the technology-driven services being offered.

- A Sandbox:
  1. *Intends to encourage experimentation* using the most current and innovative technologies;
  2. *Allows fintechs and FSIs to demonstrate their assessment of the innovation with the regulator* without any judgement or preconceptions; and
  3. *Provides guidance, particularly for new entrants*, perhaps not yet licensed, on how to develop and comply with legal and regulatory requirements.

The **Monetary Authority of Singapore (MAS)** launched a FinTech Regulatory Sandbox to promote innovation and to “limit an over-abundance of caution” by start-ups and established financial institutions when launching new products.

The Sandbox aims to transform Singapore’s financial sector by: increasing efficiency, improving risk management, creating new opportunities, and/or improving people’s lives.

**Bank Negara Malaysia (BNM)** launched a Financial Technology Regulatory Sandbox Framework with the aim to encourage development and deployment of fintech solutions so as to modernize the financial sector. The Malaysian Sandbox again reduces the regulatory constraints in launching innovative products or services.
OTT Disruptions: To Manage or To Nurture?
OTT Technologies make the same product more affordable and accessible so that a far larger population can afford it, want it, and be able to use it.

Disruptive Innovations are a natural and highly desirable consequence of technological evolution.

They encourage traditional operators and service providers to leave their comfort zone to become competitive innovators of new services.

Telcos’ voice and SMS revenues being cannibalised by OTTs: Consumer migration to OTT services will cost network operators nearly USD104 billion in 2017; 2020, it is estimated that OTT message volumes will be 10 times larger than SMS.

By 2020, it is estimated that OTT message volumes will be 10 times larger than SMS.

Without adapting, telcos’ networks will become “dumb pipes”.

Throttling bandwidth, imposing surcharges and degrading traffic are used to defend profit margins from OTT rivals.
Should Not be Viewed as *Us vs Them; Either/Or*…

<table>
<thead>
<tr>
<th>Compete</th>
<th>Or</th>
<th>Defend</th>
</tr>
</thead>
<tbody>
<tr>
<td>• In order to maximise returns on their infrastructure investments, telcos are forced to innovate beyond providing basic access services, and this could mean looking to develop their own OTT products</td>
<td>• Especially orchestrated by a dominant player, such methods prevent OTT services from gaining traction and preserve traditional service revenue. However…</td>
<td></td>
</tr>
<tr>
<td>• Telcos have the advantage of being able to leverage existing subscribers and operations for: bundling, local market advantage, brand presence, carrier billing, targeted marketing etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Create a lean telco that focuses on growing its digital business – Infrastructure sharing/ spinning off passive infrastructure to dedicated infrastructure operators (e.g. TowerCo/FibreCo)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Adapt business model to match flexibility in pricing structure and service delivery offered by OTT service providers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Leverage GSMA’s Rich Communication Services, an initiative to achieve enhanced SMS features and global interoperability through IP-based communication</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ EY’s Digital TMT Ecosystem Value Forecast \]

Instead…

Source: Informa, Ovum, GSMA, EY
Regardless of the type(s) of OTT service offered, OTT providers and telcos are increasingly pursuing **promotional partnerships and bundled services**

- Ovum recorded more than 200 such partnership deals in 2015
- Revenue-sharing can boost telco metrics including monthly ARPU and churn rates
- According to Detecon, bundling OTT services with access service products can **lift ARPU by up to 22%**
- Depending on the each party’s strategy, there are two distinct ways through which this cooperation model can be pursued:
  a) Telco offers bundled OTT to market its own broadband/pay TV services
  b) Telco offers paid and/or unpaid services of its OTT partner(s) without data cap or for a discounted price

---

**OTT-Telco Collaboration**

In Indonesia, online content and applications drove over USD6.6 billion in economic value for consumers and telecom operators in Indonesia in 2015.

Of this, USD3.6 billion was paid to telecom operators for Internet access.

In Thailand, a greater appetite for online video services increased consumers’ **willingness to pay for upgrades** to fibre-to-the-home (FTTH) broadband services.
Besides: We’ve Been Here Before

Netheads vs. Bellheads

- Terminology: Wired article
- Different goals
  - Unified network vs. internetwork
- Separate node types
  - Vs. only gateways and hosts
- Separate link types
  - Switching, trunk,
  - Vs. All links “uniform”
- Pairwise reliability of elements and links
  - Vs. reliability only via redundant paths
- Databases provided for lookups as part of network
  - Vs. no DB needed, all DBs external to network
Developing a Framework for OTTs

Over-the-top (OTT) services can be defined as digital content distributed over the Internet that bypass traditional communication delivery channels to reach end users, and can potentially complement, collaborate or supplant not only traditional telecoms and media services but also a whole range of traditional industries.
OTT at a Glance

OTT in ASEAN as of Jan 2017...

339.2 million Internet users
53% penetration

305.9 million active social media users
47% penetration

Messaging apps are popular

are leading the pack ...

... overtaking previously popular apps
We can think of OTT services as broadly belonging to three categories:

**Direct substitutes** of traditional telecoms services

![ LINE, WhatsApp, iflix, Viu ]

**The Others**

![ Lazada, JOOX, Grab, TrueMoney, Garena, Spotify ]

Not direct substitutes, but possess **enhanced qualities** of a traditional telecoms service
Drivers to Disruption

1. Previously, major changes came from growing competition within the traditional telecoms market.

2. Recent disruption comes some years after the economics of telephony itself was transformed (or disrupted) by digital technologies.

3. Emerging digital technologies can be used to enhance existing services and introduce new ones, but equally can be adopted by new entrants to challenge the business models and markets of incumbents.

4. Multiple new business models have emerged from data competition to retain and attract new customers.

5. The application of legislation is today based on sectoral definitions.

6. Increasingly this does not reflect the way in which consumers perceive the services they consume.

Service definitions need to evolve to reflect consumers’ perceptions of services rather than the underlying technologies.
1. Alternative voice/ SMS services
   a) ‘Free’ text and voice services, which can be funded by:
      i. selling customer data to advertisers,
      ii. adverts in the service, such as pop-ups
   b) Subscription services

2. Alternative pay TV services
   a) Advertising-driven ‘free’ video-on-demand (AVOD), where the adverts either appear in the video, or wrapped around it. Many AVOD services are owned by studios, broadcast networks, or cable networks
   b) Subscription video-on-demand (SVOD) paid directly to an OTT operator. Subscriptions are usually renewed automatically and fees are paid in fixed intervals (e.g. per month/year)
   c) Transactional Video on Demand (TVOD) are one-off payments, also paid directly to the OTT operator

3. New categories of apps and content
   a) ‘Free’ downloads
   b) Free max allows ‘free’ usage up to a ceiling, and payments thereafter, or payments for enhancements, such as purchasing items used in a game
   c) Data monetization, which entails OTT operators selling users’ data to advertisers and other companies
   d) Apps to access non-free or semi-free services, such as online payment apps for e-commerce sites, subscription-based access to newspapers, entertainment sites, etc.
   e) Subscriptions to online services, such as newspapers
   f) Purchased apps, such as a photography app or games
   g) Crowdsourcing and Donations to start-ups and to websites such as Wikipedia
   h) Peer-to-Peer (P2P) Lending for personal commercial loans
# OTT Business Models

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>Services funded by viewing advertisements or the collection of data to sell to advertisers</td>
<td>Google, Facebook, Line, Pinger, Apps like Spider Man, Angry Birds etc.</td>
</tr>
<tr>
<td>Unit pricing</td>
<td>Revenue derived from offnet calls and messages or terminating incoming calls</td>
<td>Microsoft/ Skype, Viber</td>
</tr>
<tr>
<td>Hardware</td>
<td>Services add value to the device and promote market presence within a segment defined by device ownership</td>
<td>Apple, Samsung, Blackberry, Nokia</td>
</tr>
<tr>
<td>Subscription</td>
<td>Recurring charge either for basic service or additional features</td>
<td>Microsoft/ Skype, Viber, WhatsApp, payTV services, Game Apps like Lumosity</td>
</tr>
<tr>
<td>Software Licensing</td>
<td>Services can be bundled with hardware or offered on a white-label basis</td>
<td>Microsoft/ Skype, Apps like Minecraft, Heads Up etc.</td>
</tr>
<tr>
<td>In-app purchases/content</td>
<td>Users can purchase extra features such as stickers or download content such as games</td>
<td>Kakao, Line, Tencent (WeChat), Apps like Bad Land</td>
</tr>
</tbody>
</table>
1. **Choose your platform.** An understanding of the factors driving OTT voice, messaging, media and cloud is key to choosing the appropriate business models, positioning and determining whether your competitive posture is offensive or defensive. Above all, be clear about where, when, how, and with whom you are going to compete.

2. **Redefine value propositions and business models.** The OTT surge is forcing a rethink on value propositions. While OTT services are evolving fast, consumer behaviors are shifting faster, so operators have to create business models that are both agile and adaptable, and whether partnering will be the best way to do it.

3. **Create new platforms and approaches.** The mantra of the new digital era is *customer experience*. Delivering a memorable one will require new technology solutions, but more important is deeper integration of network IT, product and service development, and mobile, fixed and media assets.

4. **Rethink organizational approaches.** OTT media and video services compel more creative approaches to organization structures, skills, systems, and mindsets.

5. **Remain flexible and ready to adjust.** Understand changes in consumer behavior and creatively adjust strategies accordingly.

6. **There is no one OTT strategy.** Indeed, each platform – voice, messaging, media, and cloud – demands a different strategy.
Perhaps the question to ask is: **What is *not* OTT?**
OTTs: To Regulate or Not to Regulate

- REGULATIONS
- OTTs
- INVESTMENT
- COMPETITION
- NET NEUTRALITY
- SECURITY
Why Regulate?

When is regulation necessary?

Regulations are necessary to address inefficiencies from market failures which may result in economic and social costs.

3 **fundamental** questions to ask before considering regulating:

(i) **What** market failures is the regulation trying to address?

(ii) Will regulation deter new entrants and discourage innovation?

(iii) **How** practical and enforceable is the regulation?

*Given the broad-based nature of OTT enablement, have the potential for unintended consequences been comprehensively addressed before regulating?*
## Reasons for Regulation

### Traditional

<table>
<thead>
<tr>
<th>Strategic Importance of Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Viewed as strategically important</td>
</tr>
<tr>
<td>- Critical National Information Infrastructure (CNII)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scare Public Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Already use spectrum, rights of way, distribution channels</td>
</tr>
<tr>
<td>- Already have publically assigned phone numbers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consumer Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Regulated protection for price, QoS, misleading advertisements</td>
</tr>
<tr>
<td>- Number portability and right to recourse</td>
</tr>
</tbody>
</table>

### OTT

<table>
<thead>
<tr>
<th>Strategic Importance of Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Generally not viewed as strategically important</td>
</tr>
<tr>
<td>- Generally not viewed as CNII</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scare Public Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Run on top of ISPs existing infrastructure</td>
</tr>
<tr>
<td>- Network management is key</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consumer Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Protections may cover:</td>
</tr>
<tr>
<td>- VoIP needed for emergency calls, harmful content</td>
</tr>
<tr>
<td>- Subscriptions and payments</td>
</tr>
<tr>
<td>- Use of data</td>
</tr>
</tbody>
</table>

*A key consideration should be on the nature of the market the OTT operates in, how their business models work, and how they differ from traditional service providers*
Reasons for *not* Regulating

**Competition:** Promoting free and fair competition will address market failures which leads to more affordable and accessible services.

**Innovation:** Increased competition also leads to more market innovation and more innovative or value add services for consumers.

**User digital rights:** In free markets users enjoy freedom of expression and access to information.

**Unintended consequences:** Over regulating may lead to fewer service and content options for consumers which may lead to a vicious circle of falling Internet adoption and digital economy contractions.
Chile is the first country in the world to enact a law in 2010 safeguarding the principles of net neutrality and establishes transparency obligations for ISPs. According to official numbers from the local telecommunication authority, SUBTEL, between 2009 and 2012, the number of mobile connections increased from 600,000 to nearly 5 million, while fixed connections increased from 1.7 to 2.2 millions. The costs to users also decreased in 2012 of up to 50% in the price of services.

Netherlands was the first EU nation to pass a net neutrality law in 2012, revised in 2016 to ensure that telcos and ISPs treat all internet traffic equally and cannot favor one Internet app or service over another.

Since 2016, the Telecom Authority of India (TRAI) has prohibited telcos from charging differential rates for data services, thus prohibiting Facebook’s Free Basics and Airtel Zero platform by Airtel. Still actively discussing net neutrality with multiple stakeholders.

Singapore’s regulator has issued guidelines since 2011 stating that ISPs are allowed to sell “fast lanes” for a fee as long as they continue to provide good service levels to average users. ISPs are however not allowed to block legitimate Internet content, or degrade access to websites, apps or services to the point that they become unusable.
Examples of Regulations Around the World (2/2)

European Commission proposing the European Electronic Communications Code (ECC) which includes regulating OTT communications in the same manner as traditional "electronic communications services" ("ECS")

Federal Communications Commission (FFC) proposing to repeal 2015 “Open Internet rules” which will make net neutrality voluntary and will allow telcos to block, throttle, or prioritize OTT services

Colombia passed regulations in Jan 2017 to tax all Internet-based service paid through a credit card with a 19% VAT

The Korea Communications Commission (KCC) ruled in Jun 2012 to allow telcos to charge subscribers when they use mobile VoIP services, including OTT services

Voice and video communication OTT services are blocked in Saudi Arabia, with Viber first blocked in 2013
Key Considerations
Net Neutrality

The principle of Net Neutrality is that ISPs should enable access to all content and applications regardless of the source, and without favouring or blocking particular products or websites.

- This means that all legal electronic communications content delivered over the Internet must be treated equally, without favouring one product over any other.
- ISPs may not charge different per unit delivery rates for premium, high demand, or operator/ISP owned content.
- It also implies that ISPs may not block, throttle, or charge more for, or inhibit any legal content including OTT messaging, voice, video or other content, hence the conflation of OTT issues with Net Neutrality.
- The Net Neutrality principles have generally been supported by users and content providers who do not have commercial interests in ISPs.
- The Net Neutrality principles tended to be resisted by operators and ISPs who fear abuse of their networks leading to network congestion and/or unfair dominance of limited broadband networks by well-resourced content providers.
- The Net Neutrality debate is, to a large extent, more about how far can market forces replace regulation to ensure a desirable outcome.
Why Consumer Protection?

Telecoms, broadcasting and other traditional services are regulated to protect consumers from unfair, deceptive, and fraudulent business practices. These include:

- accessibility,
- price,
- service,
- transparency,
- consumer recourse and others

In an increasingly digital world first concerns revolve around data privacy and cyber security. Increasingly, however there are concerns around recourse and transnational liability.

Generally OTTs do not fall under consumer protection regulations and use Terms of Service agreements. As has been noted, OTTs are highly consumer responsive, so poor consumer service is often seen to provoke its own policing in customer reference.
In their research, two professors from York University and the University of Connecticut found that nobody reads online contracts, license agreements, terms of service, privacy policies and other agreements. In an experiment, participants all clicked ‘Yes’ to abide by the terms of service which included giving away their future first-born children.

Some examples of what you may not have realized you agree to:

**Your networks and connections.**
We collect information about the people and groups you are connected to and how you interact with them, such as the people you communicate with the most or the groups you like to share with. We also collect contact information you provide if you upload, sync or import this information (such as an address book) from a device.

Our automated systems analyze your content (including emails) to provide you personally relevant product features, such as customized search results, tailored advertising, and spam and malware detection. This analysis occurs as the content is sent, received, and when it is stored.
## Who to Trust?

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Consumers <em>trust</em> regulators to ensure companies which are registered locally are legally obliged to provide consumer protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OTT</strong></td>
<td>Do consumers <em>trust</em> OTT providers to ensure adequate consumer protection when there may be no manner for legal recourse?</td>
</tr>
</tbody>
</table>

Two major aspects of consumer protection for OTTs:
- Privacy: safeguards on user data to prevent abuse, misuse, and protected
- Cyber security: protecting users from cyber threats and illegal activities

Apart from regulations other means to foster consumer protection include voluntary industry codes of conduct, Internet principles, etc.
What about Privacy?

Awareness
• Are users fully aware of how their data is being collected and used, and would that change their behaviours if they did?

Protection of personal data privacy
• Are there personal data privacy protection regulations which cover OTT services?

Cross border data transfers
• Are there restrictions on data transfers (particularly for ‘sensitive’ data such as health and financial data)?
• How does that impact the ability of OTTs to provide services or for users to benefit from cloud services?

Location tracking
• How do OTTs use location tracking apps? Can they be abused? (e.g. Uber’s God view)
• Can authorities use such services to track users on grounds of national security?

Right-to-be-Forgotten
• Should there be rules on RTBF?
What about Cyber Security?

Security
- Are OTT services secure from illegal cyber attacks, and how to ensure they remain responsible?
- How can OTTs encourage safer cyber hygiene for users? Should it be their responsibility?

Cyber threats
- Do OTTs safeguard users from cyber threats such as snooping, phishing, spam?
- How do OTTs help users recover in the event of a cyber attack?

Transparency
- What provisions are there for legally approved surveillance or government requests for data?
- Should OTT services provide data and security breach notifications to users?
Key Issues Toward Regulation (1/2)

OTT Influence upon Infrastructure Investments
- Reduce market share and revenues of traditional telcos and broadcasters, which can negatively impact investment into infrastructure and ROI for investment
- OTTs add value by creating a growing consumer demand for last mile broadband capacity
- CDNs can reduce load on int'l connections, reduce latency and maximise video quality for end users

Net Neutrality
- principle of net neutrality is that Internet service providers should enable access to all content and applications regardless of the source
- ISPs would like to charge more to high bandwidth OTTs using their networks

OTT Media Neutrality
- OTTs can pick and choose which content they deliver to the end user
- Monopoly power greatly increases concerns on the neutrality of content

Consumer Protection
- Telecoms are regulated to protect consumers on many ways: price, service, transparency, etc
- OTTs standardly do not fall under these regulations and use Terms of Service
Key Issues Toward Regulation (2/2)

Competition
• Genuine competition promotes innovation
• ‘Level playing field’ for incumbents, entrants and new enterprises will spur competition

Data Protection
• Many countries have personal data protection
• Many customers are not aware they are ‘opting-in’ to the use of their data

Cybersecurity
• Risks of cyber-attacks as telecom and broadcast go digital and go IP
• Protecting CNIIIs and regulations on data/security breach notifications

Data Transfer
• Cross-border data transfer of personal data is prohibited in many cases
• Data ownership rules require consent of user

Taxation
• Should OTTs pay local tax in areas where they operate, and if so how to enforce?
# Overview of 2-day Program

<table>
<thead>
<tr>
<th>Day 1: 12 September 2017</th>
<th>Day 2: 13 September 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session I</strong>: OTT Overview and Setting the Scene</td>
<td><strong>Session IV</strong>: Financial Impact and Regulatory Issues</td>
</tr>
<tr>
<td><strong>Session II</strong>: New Business Opportunities</td>
<td></td>
</tr>
<tr>
<td>• New services: Delivery/ billing and payment issues</td>
<td>• Financial impacts (taxation for OTT)</td>
</tr>
<tr>
<td>• Financial impacts (taxation for OTT)</td>
<td>• Legal and regulatory framework</td>
</tr>
<tr>
<td><strong>Session III</strong>: Impacts on Telecommunications Network</td>
<td><strong>Discussion V</strong>: Consumer protection</td>
</tr>
<tr>
<td>• Network investment</td>
<td>• Trust and security</td>
</tr>
<tr>
<td>• Open Internet/ Net neutrality</td>
<td>• Information privacy</td>
</tr>
<tr>
<td><strong>Regulator Session I</strong>:</td>
<td>• Consumer recourse</td>
</tr>
<tr>
<td>• Summary of Discussion I-V</td>
<td><strong>Regulator Session II</strong>:</td>
</tr>
<tr>
<td>• Way forward</td>
<td>• Way forward (cont.)</td>
</tr>
<tr>
<td>• Way forward</td>
<td>• Wrap up</td>
</tr>
</tbody>
</table>
Thank you