

## Preface

There is no standard definition of over-the-top (OTT) services. A recent Commonwealth study defines OTT as any service that can potentially substitute for traditional telecommunications, for example voice over IP (VOIP) and messaging services.<sup>1</sup> Whereas a study by the European Parliament uses a ‘catch-all’ definition which includes providers of video, music, television, communication, productivity, technology (cloud services) and community services.<sup>2</sup> The Federal Communication Commission (FCC) refers to providers of these services as *edge providers* who use the internet broadband network to deliver services to users. Since broadband service providers (*core providers*) own the ‘last mile’, they act as gatekeepers and are often insulated from competition. More expansive definitions may make sense since all services are ‘bits’ travelling on a general-purpose IP network. However, from a regulatory or competition perspective, putting all service providers in one bucket or labelling them as content or application service providers is not useful. Firm sizes and competitors differ substantially as do business models. Some edge providers use subscriptions, others rely on advertising revenue and some on both. Further, content providers include large firms and owners of copyright but also individual users.

In this vertical relationship between edge and core providers, openness is critical for freedom of speech, civic engagement and preventing core providers from censoring content. From a competition perspective, openness prevents exclusionary behavior by core providers, such as favouring their own or affiliated content. This is the logic behind no blocking or throttling; no paid prioritization and no access charges on edge providers.<sup>3</sup> However, many telecommunications network operators and governments have tried to suppress edge providers either by blocking or throttling services and banning zero-rated services such as Free Basics. Examples include India, Morocco, Egypt, Europe as well as others.<sup>4</sup> Telecommunications companies in South Africa have sought regulatory intervention and argued for a level playing field. They suggest that edge providers should be subject to identical licensing and tax obligations. Others such as China and Russia are seeking to expand the narrow mandate of the International Telecommunications Union (ITU) to include

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<sup>1</sup> Commonwealth Telecommunications Organization, 2016. *Understanding the Dynamics of (Over-the-Top) OTT Services*. Available at: [http://www.cto.int/media/CTOOTTStudyPaperFinal\\_ReviewedDraft04Oct2016.pdf](http://www.cto.int/media/CTOOTTStudyPaperFinal_ReviewedDraft04Oct2016.pdf) (Accessed November 16, 2017).

<sup>2</sup> European Parliament, 2005. *Over-the-Top (OTTs) players: Market dynamics and policy challenges*. Available at: [http://www.europarl.europa.eu/RegData/etudes/STUD/2015/569979/IPOL\\_STU\(2015\)569979\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/569979/IPOL_STU(2015)569979_EN.pdf) (Accessed November 16, 2017).

<sup>3</sup> Katz, M.L., 2017. Wither U.S. Net Neutrality Regulation? *Review of Industrial Organization*, 50(4), pp.441–468.

<sup>4</sup> Stork, C., Esselaar, S. & Chair, C., 2017. OTT - Threat or opportunity for African Telcos? *Telecommunications Policy*, 41(7), pp.600–616.

global internet regulation.<sup>5</sup> In the ASEAN region, Indonesia has recently released draft regulations and Thailand expects to have its own version in place by 2018.

The calls for regulation are built on shaky foundations. The argument usually proceeds in a three-step manner. Step 1, is to arbitrarily define OTT as including only VOIP and messaging or broadly as a ‘catch-all’ as the Indonesian proposal does. Step 2, is to ignore the definition in step 1 and state that OTT is the same as telecommunications (implying they compete). Step 3 is to argue that in order to “level the playing field” telecommunications regulations should apply to OTT providers. One way to level the playing field would be to deregulate and privatize Indonesian telecommunications oligopolies and media conglomerates removing any government ownership, but this alternative is never considered.

While it may be a reasonable starting point to suggest that narrowly defined OTT services which include VOIP and messaging may be substitutes for voice and SMS products provided by core providers, it is a testable hypothesis. Empirical research on the relationship between SMS and voice shows mixed results which vary by country. In some countries, they are substitutes and in others such as Portugal they are complements since consumer behavior depends not just on price but also age, gender and other unobservable characteristics. Broadly the literature suggests that network size plays an important role and the relationship turns from substitution to one of complementarity as network size increases. Similarly, recent research on Norway finds that social and messaging apps (OTT services) complement demand for SMS and mobile voice service. This means that OTT services may not compete with those of telecommunications companies, instead they may stimulate demand for SMS and mobile voice service. These results may or may not hold for Indonesia or Thailand, but call into question the maintained assumptions of those who call for more regulation.<sup>6</sup>

Telecommunications networks are not the same as OTT services provided on a general-purpose broadband network. A fundamental difference lies in the type of network or market. Telecommunications networks (for both voice and SMS) are one-sided networks, whereas most OTTs are multi-sided networks. In one-sided networks, users perform similar functions on both sides; they can send and receive text messages or they can make and receive voice calls. Despite the modularity of traditional telecommunications (equipment versus transmission for example), these were vertically integrated monopolies or oligopolies (and many still are) and the focus of regulation was on coverage or universal service. They were also dedicated or single-purpose networks such as telephone and cable. Broadband networks

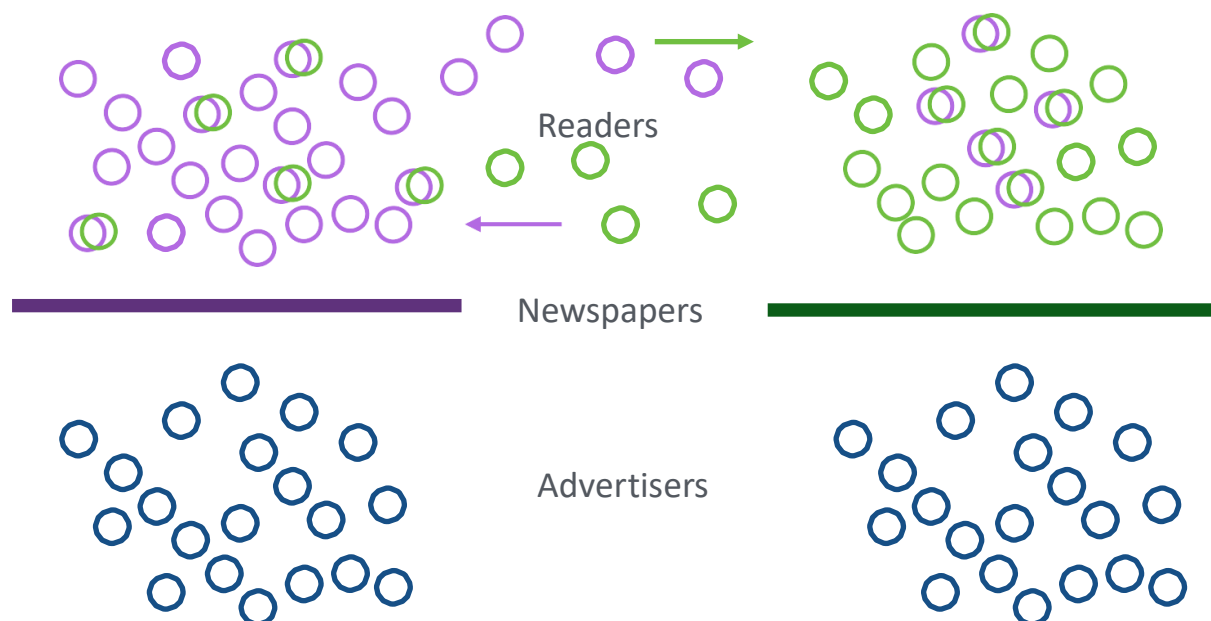
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<sup>5</sup> O’Rielly, M., 2017. International Efforts to Regulate the Internet Continue. Federal Communications Commission. Available at: <https://www.fcc.gov/news-events/blog/2017/04/21/international-efforts-regulate-internet-continue> (Accessed November 16, 2017).

<sup>6</sup> Wellmann, N., OTT-Messaging and Mobile Telecommunication: A Joint Market? - An Empirical Approach. In 28th European Regional Conference of the International Telecommunications Society (ITS): Competition and Regulation in the Information Age. Available at: <https://www.econstor.eu/bitstream/10419/169503/1/Wellmann-rev.pdf> (Accessed November 16, 2017).

are multipurpose and are disintegrated. Edge providers complement the broadband network and most innovation takes place at the edge. Such innovation is often called *permissionless innovation* since it is independent of the network. Edge providers operate at different layers of the network and provide content, search or other services to different groups of consumers. In this way, they bring competition not just to traditional telecommunications firms, but to firms in other sectors of the economy as well. They use different business models and could be two-sided, three sided (content producers, consumers and advertisers) or multi-sided marketplaces. Other than their potential for disrupting incumbents, they also turn some economic concepts underlying competition laws on their head.

Consider a simple two-sided market or a platform-mediated network. The platform being a newspaper; in this particular case two newspapers. It has readers on one side and advertisers on the other. A majority of readers usually read one or the other newspaper (they use a single platform) whereas advertisers may advertise in both. Pricing is now more complicated and depends not just on demand and costs, but also on participation since profits are extracted from participation. Advertisers care about the circulation of the newspaper or participation on the readers side – these are cross-platform externalities or network effects.



Readers who subscribe to a single newspaper are ‘captive’, making each newspaper a monopolist that provides access to readers who only read that newspaper. Thus, the readers side is referred to as the monopoly side. Interestingly, competition takes place on the monopoly side of the platform. There is an incentive for each newspaper to cut prices on the monopoly (readers) side, to zero if need be, so as to attract more readers from the other newspaper and in doing so extract higher prices from advertisers. This is why some OTT

services are provided ‘free’ and not because of lower regulatory costs as claimed by the ITU in one of its explainers’.<sup>7</sup>

This simple example also turns predatory pricing (a competition offence) on its head. Prices are often below cost in OTT services, but this is due to the nature of the network. Dominance is a second outcome since under certain conditions, these networks tend to tip and evolve to a ‘winner-take-all’ situation. Consumer welfare is often underestimated since it is difficult to quantify the direct and indirect network externalities. Since consumer benefits are underestimated, the traditional regulatory standard of measuring static efficiency gains needs to be replaced by dynamic efficiency considerations. Static efficiency refers to preventing waste of existing means, whereas dynamic efficiency is about creating new means and ends for tomorrow through innovation and entrepreneurship. Multi-sided markets are more complex and not well understood since platform owners use a variety of strategic instruments other than pricing. They include investments, technology rules and contracting choices.<sup>8</sup>

Generally, it is assumed that OTT services are ‘free riders’ since innovation at the edge leads to more demand for infrastructure and higher capital costs for broadband providers. It is argued that OTT service providers make no contribution to these capital costs. A recent OECD study suggests that this issue is not settled and it could be that investment in broadband leads to more innovation at the edge. If the latter is true, the answer is not regulation, but for government and core providers to invest more in infrastructure.<sup>9</sup> The OECD study suggests that the new dynamic needs to be understood before rushing in to apply old rules to new situations. OTT services are clearly not the same as telecommunications, yet many governments including those of Indonesian and Thailand appear to assume that they are – this is a false premise.

Indonesia’s Ministry of Communication and Informatics recently released draft regulations for the provision of OTT services in Indonesia. The goals of the regulation are to provide legal certainty; to increase economic growth and promote “equality in healthy competition”; to develop the domestic creative industry as well as to protect Indonesian consumers and Indonesian sovereignty.<sup>10</sup> OTT services are defined to include applications and content provided over the internet through a telecommunications network operator.

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<sup>7</sup> See page 2 in ITU Explainers: Over-the-Top (OTT) Services. Available at: <https://www.gp-digital.org/wp-content/uploads/2017/10/itu-ott-1.pdf> (Accessed November 13, 2017).

<sup>8</sup> Boudreau, K. & Hagiu, A., 2008. Platform Rules: Multi-Sided Platforms as Regulators. In A. Gawer, ed. *Platforms, Markets and Innovation*. Cheltenham, UK and Northampton, MA, U.S.: Edward Elgar, pp. 163–191.

<sup>9</sup> OECD, 2016. Digital Convergence and Beyond: Innovation, Investment and Competition in Communication Policy and Regulation for the 21st Century. Available at: <http://dx.doi.org/10.1787/5jlwvzzj5wv1-en> (Accessed November 16, 2017).

<sup>10</sup> <http://www.amcham.or.id/fe/5610-next-step-for-app-based-services-in-indonesia> (Accessed November 12, 2017) and Revised Draft Regulation, unofficial English translation by AmCham Indonesia, August 4, 2017.

Broadly the regulations require OTT service providers to have a local physical and economic presence (such as a representative office, local bank account as well as a tax identification number) and to use the national payments gateway for any paid services. In addition, OTT service providers have to abide by data protection and privacy laws. They are to cooperate with the government to filter and censor content as well as assist law enforcement agencies in “interception and evidence collection”. Local users should be able to call a local call center which is expected respond to any complaints within 48 hours. Users are entitled to compensation equivalent to losses due to “failure and/or negligence” by OTT service providers. In cases of non-compliance, the government will direct telecommunications companies to use “bandwidth management” and telecommunications companies that don’t comply will be “impugned with sanction”. In addition, the regulation seeks to establish a national OTT policy body to assist the Minister in policy making.

Thailand is considering a similar approach and although the particulars are not expected till 2018, like Indonesia it expects OTT companies to establish a local economic presence.<sup>11</sup> Earlier this year the National Broadcasting and Telecommunications Commission (NBTC) asked OTT operators to register with it by July 22, 2017. In addition, it appealed to advertisers in Thailand, asking them to show “corporate good governance” by not advertising on major OTT network platforms.<sup>12</sup> Many companies including YouTube, Facebook and Netflix did not register by the July deadline but some have offered to engage with the NBTC.

Calls for regulating OTT services are usually instigated by core providers on the basis of declining average revenue per user (ARPU) however these as well as total revenues have been rising in Indonesia and are expected to continue to do so in the coming years. Interestingly, voice and SMS unit prices have also been rising – not a response one would expect from an industry threatened by ‘free’ OTT services.<sup>13</sup> Mobile revenues in Thailand are also expected to grow over the coming years due to higher data use and an expanding subscriber base.<sup>14</sup>

As media reports indicate, it is more likely that these regulations are about taxation, since advertising revenue is shifting from traditional domestic channels to online international channels.<sup>15</sup> Indonesia has a poor record of tax compliance and government tax revenues as a proportion of Gross Domestic Product (GDP) are among the lowest (14.3%) in the region. Furthermore, the government is keen to increase these revenues so as to boost its sovereign

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<sup>11</sup> <http://www.nationmultimedia.com/detail/Economy/30326503> (Accessed November 10, 2017).

<sup>12</sup> <http://www.nationmultimedia.com/news/business/EconomyAndTourism/30319481> (Accessed November 10, 2017).

<sup>13</sup> DBS Group Research, 2016. Industry Outlook Telecommunications (Indonesia). Available at: [https://www.dbs.com/aics/templatedata/article/industry/data/en/GR/042016/telecommunications\\_indonesia.xml](https://www.dbs.com/aics/templatedata/article/industry/data/en/GR/042016/telecommunications_indonesia.xml) (Accessed November 22, 2017).

<sup>14</sup> DBS Group Research, 2016. Industry Outlook Telecommunication (Thailand). Available at: [https://www.dbs.com/aics/templatedata/article/industry/data/en/GR/072016/telecommunications\\_thailand.xml](https://www.dbs.com/aics/templatedata/article/industry/data/en/GR/072016/telecommunications_thailand.xml) (Accessed November 22, 2017).

<sup>15</sup> See: <http://www.connectedasia.com/new-ott-regulations-in-indonesia-and-thailand-inching-towards-a-level-playing-field/> (Accessed November 22, 2017).

debt rating which is lower than that of its peers.<sup>16</sup> Tax efficiency concerns have been raised by many countries. As a G20 country, Indonesia has been involved in international discussions (OECD/G20) on ‘Base Erosion and Profit Sharing’ (BEPS). The answer may lie in multilateral efforts to regulate tax havens and more importantly this issue concerns many multinationals and not just providers of OTT services. Individual country efforts to regulate a small subset of multinationals will not solve the bigger issue.

Rarely do calls for OTT regulation take into account the consumer perspective and nor do they acknowledge the large benefits consumers as well as businesses obtain from these platforms. Increasing the costs of doing business will harm those in lower income brackets, who benefit the most from OTT services. The regulations are also impractical because while a few large firms may well have the resources to set up local offices and call centers, an overwhelming majority of OTT suppliers are small firms located all over the world.

It appears that both the Indonesian and Thai proposals for localization as well as the online advertising and data localization policies of Vietnam have less to do with economic regulation and more to do with data nationalism and censorship; which together imply control.<sup>17</sup> The paper by the Asia Internet Coalition on ‘Smart Regulation and OTT Growth’ discusses these issues at greater length.

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<sup>16</sup> See: <https://www.bloomberg.com/news/articles/2017-11-21/indonesia-needs-higher-revenue-to-win-moody-s-upgrade-like-india> (Accessed November 22, 2017).

<sup>17</sup> See: <https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2017/march/key-barriers-digital-trade> (Accessed November 22, 2017) and Kuner, C., 2015. Data Nationalism and its Discontents. *Emory Law Journal*, 64, pp.2089–2098.

<sup>18</sup> The views expressed here are my own and should not be attributed to any other individual or organization.