

Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan
Jawaharlal Nehru Marg
New Delhi 110 002

April 24, 2015

Re: Consultation Paper on Regulatory Framework for Over-the-top (OTT) services

We are two academics who study internet policy and regulatory issues around the world. We offer our comments in response to your consultation paper. No compensation was taken in preparing these remarks. They reflect our views and not necessarily those of the organizations with which we work.

This submission includes an overview of the differences between OTT and TSP's traditional services. It then describes the concept of dynamic competition in which different technologies compete. OTTs are a credible form of technology competition to traditional telecom providers. As such many countries have updated their regulatory frameworks to reflect this reality. In some cases there is a call to require that OTTs maintain the same obligations as telecom providers (e.g. interconnection, number portability, emergency services etc). We don't necessarily have the answer for India, but it is worthwhile to ask the question.

We are working on an empirical study of zero rating in the US, Europe, and Latin America. We would like to include India in our study but we are saddened by the events in India where net neutrality advocacies with expert abuse of digital tools can succeed to hijack a fair and democratic discussion. In short, don't ban what you don't understand. For academics such as us, we need to have data to study. If models are outlawed without ever being tried—we never get the chance to assess the consumer benefit they provide. For further discussion, see the attached articles about zero rating. Two relevant papers on net neutrality are included.

We have been active in this debate in Europe and the US, providing regulators with expert commentary. Above all, we urge the Indian regulator to conduct a proper Regulatory Impact Assessment (RIA) before issuing any net neutrality rules. An RIA is a defined process and steps of (1) problem definition; (2) identification of alternative options; (3) data collection; (4) comparison of options; (5) preferred policy options, and (6) monitoring and evaluation of indicators.

We also suggest that soft law and guidelines for net neutrality have proven slightly more effective in deterring violations than hard law for net neutrality. These are results from a forthcoming paper analyzing net neutrality rules in 20 countries.

Introduction

Many countries¹ have looked at the issue of OTTs and have asked questions similar to the ones posed by TRAI. There is an ongoing debate as to the best policy to balance the many needs of stakeholders on the network. In spite of all the data that the Internet offers, the optimal solution is not always clear. Moreover there are issues that are important to consider from the Indian context.

In the last few years our team have been engaged in research looking to the changes to the Internet architecture and the business models related to it. While based at the London School of Economics and Political Science, we looked to this problem from a socio-technical approach asking to ourselves very simple questions such as: how big is the Internet? Where is the traffic? And how this traffic is measured? From our work (Liebenau et al, 2012 and 2013), and as we progressed from the European perspective where Internet services and the provision of broadband have been primarily managed by European telecom incumbents we have analyzed other cases such as the provision of broadband in Asian countries (e.g. South Korea², Japan) and Australia³, we found the answers of those questions inconclusive.

There are many arguments regulating broadband under Common Carrier regulation. Besides the arguments about the market competition and modularity of services of the internet (Yoo, 2013) and possible systemic failure of the shadow common carriers (Cherry, 2011) the most important argument comes from social economics analysis and the European experience: the business models associated with Next Generation networks (NGN) cannot be and are not financially viable within the limits of common carrier regulation.

The value of shared resources to be pooled from the services that will rely on NGN networks (Frischmann, 2012) are not properly taken into account when looking to maintenance, expansion and upgrade of new networks. To force on broadband providers the full extension of the costs for extending broadband to rural areas have failed to provide significant success in the UK where there is strong market competition. The US with its huge distances and many rural communities has bigger challenges to provide such services and keep them running without a proper business model to support growth. We believe this is a similar experience for India.

To focus on the right questions such as:

- What are the boundaries of the Internet, and how can we distinguish private networks from the open Internet? Q6
- How much traffic passes through the networks, and what are the trends, disaggregated by type of traffic and type of business? Q20

¹ Norway is an example: NPT (2012) . Content Delivery Network - Regulatory Assesment. Oslo: NPT, 2012. Origanally sourced at <http://eng.npt.no/ikbViewer/Content/138477/Content%20Delivery%20Networks%20-%20regulatory%20assessment%20May%202012.pdf>. Others are mentionces in the TRAI document but also reviewed by our team.

² Yoo, Youngjin, K. Lyytinen, and H Yang. "The Role of Standards in Innovation and Diffusion of Broadband Mobile Services: The Case of South Korea." *Journal of Strategic Information Systems* 14, no. 3 (2005): 323–53.

³ Australian-Government. *Fibre in New Developments: Policy Update*. Camberra, Australia: Department of Broadband, Communications and Digital Economy - Australian Government, 2011.

- What is the speed of traffic, both in the experience of retail customers and as regards the internal, core network?
- How many people are employed in the sector, where, and for what tasks? Q20

And finding simple and direct answers to them will allow all parties to progress to address more in depth questions such as:

- What kinds of business models are likely to succeed in the digital economy? Q1, Q2, Q3, Q4, Q5
- What are the labour market effects of changes in digital technologies?
- Who makes money on what, and how are costs most effectively cross subsidized? Q10, Q13
- How is value added in the production of digital goods and services, where, and what does this mean for taxation, GDP calculations and other measures central to public policy making? Q20

And the influence in answering those questions and understanding the correlation to the current Internet trends

- Large amounts of traffic—the majority of what is delivered to devices, is video, and a huge and rising proportion is mobile.
- Data centres are integral to the way the Internet works not only because of the prevalence of virtualization and cloud services, but also because they provide the means to structure traffic worldwide. This puts considerable power in the hands of a few big players, including banks, but also Google, Facebook, Amazon and the telecoms, but also Akamai, Level 3 and others in the content delivery (CDN) space.
- The structure changes as Internet exchanges and private contracts for peering and transit re-draw routing worldwide. Q18
- Differential treatment of traffic both as a consequence of proprietary practices and by “favouritism” –what we thought of as anathema under “net neutrality”. Q19

Because India’s primary Internet issue is adoption rather than refined service details, its policy needs to focus on practical problems rather than philosophical niceties. Offering a little Internet to those who have nothing, as zero-rating does, is infinitely better than walling them out. As India’s revered Swami Vivekananda said to the World Parliament of Religions in 1893: “It is an insult to a starving people to offer them religion; it is an insult to a starving man to teach him metaphysics.”⁴

Any short term measures that will probably be an inhibitor of innovation, reducing competition and market interaction of a long term sustainable internet need to be carefully assessed by the Indian regulator.

⁴ <http://www.techpolicydaily.com/communications/net-neutralitys-passage-to-india/>

Over the Top (OTT) and Managed Services

The old paradigm of communications networks was that capital was invested to provide a single service managed by the network owner, such as telephone or cable TV. That model has given way to all-purpose, internet protocol networks that deliver a range of services from a range of providers. Operators may invest in networks to delivery services, but a range of providers also use the infrastructure. The new paradigm is characterized by a class of internet service providers called over the top (OTT) service providers .

OTTs are pass through services which are not defined by the type of network. These applications exist “over the top” of the network. They cannot exist without a network, though their operating model does not necessarily include a financial relationship to the underlying network.

OTTs differ from traditional managed services (also called specialized services) which are provided by operators on their own facilities, such as telephony from fixed line operators, pay TV from cable providers, and voice and messaging from mobile operators. For lack of a better term, OTTs are delivered on the “public internet” that part of the network which operators make available to the public but is not part of their managed facilities.

OTTs are example of dynamism unleashed by the internet. As a result, consumers have a variety of substitutes for traditional services provided by operators. Consumers can make free long distance calls with Skype and enjoy next to no cost messaging from WhatsApp. Netflix offers a range movies, television and original programs for a low monthly fee.

The challenge for operators is to evolve given the competitive pressures of OTT substitutes. As consumer choose the low cost substitutes, operators’ revenues decline and threaten their ability to make investments in broadband infrastructure. Additionally many OTT services create external effects such as congestion and mobile signal noise which may degrade the network experience. OTTs maintain that their proliferation is what drives consumer interest in internet subscription .

Operators, while not denying this assertion, point out that OTTs enjoy preferential regulatory conditions and avoid requirements for taxation, licenses, contracts, and data protection. Operators thus assert that the regulatory imbalance distorts competition and creates a subsidy for OTTs with lower costs and favorable conditions.

OTTs provide a number of benefits, not the least of which are valuable content and applications for users. Another benefit is increased competition for operators. This competition comes in the former of lower prices and improved technology in services. Competition enhances consumer choice, and concomitantly, consumers get more value, either through lower prices or better value. OTT are frequently offered without fees but in exchange for a terms of service which allows the OTT provider to collect data on the user’s behavior which is monetized through advertising, upgrades, and other offers. Some OTTs are offered with a paid subscription, such as Netflix.

Another key difference between OTT and managed services is that operators are subject to regulation. Wired infrastructure provides must obtain permission from the government in the form of rights of way, kickbacks, and other obligations. Wireless providers have to purchase spectrum. Additionally network providers are subject to tax by local, regional and national authorities. Network providers are subject to a variety of other requirements such as data

protection rules, nondiscrimination pacts, and so on. Additionally they can only serve customers within the geographic region where they are chartered.

OTTs, on the other hand, are not necessarily confined to any geographic region. Though a number of OTTs have arisen in Silicon Valley, some may be based in Stockholm or Seattle. They need not necessarily fulfill any legal requirements to operate, and they can theoretically serve users in any country. This lack of “landedness” allows OTT to pursue financial optimization by the minimization of tax. Many governments have no practical way to collect taxes from OTTs, and some OTTs establish themselves in low tax countries to serve users in high tax countries. Should users have a complaint about their service, there is not necessarily a defined path of redress. OTT firms have typically small staff and little to no customer support (after all there is no contract to reference in many cases). Additionally there is a question to whether OTTs are even within the jurisdiction of consumer authorities. It has been observed that the lack of tax and regulation has helped OTTs proliferate. Given their growing prevalence, some governments, most notably the French, have called for the regulation of OTTs.

Following is a summary of managed services and OTTs.

Managed Services	OTT
<ul style="list-style-type: none"> • Provider purchases licenses and rights of way for right to own/lease infrastructure facilities • Available only to customers of the operator • Can only serve customers within its regulated jurisdiction • Provided with QoS • Required to interconnect with other networks, generally a regulated rates • Required to facilitate emergency communications • Fees generally include a cost to underwrite cost of infrastructure • Service subject to local tax • Purchased under contract with operator subject to regulatory oversight • Subject to data protection requirements • Subject to requirements and restrictions: number portability, public safety • Multicasting video technologies can accommodate many users 	<ul style="list-style-type: none"> • Pass through third party infrastructure, generally at limited no cost • Theoretically available to any user of the internet • Can serve any customer globally • Provided on best efforts basis • Do not necessarily interconnect with other networks • No requirements to facilitate emergency communications • Customer pays general bandwidth subscription based upon tier • Practice fiscal optimization to minimize tax • Free services not purchased outright with a contract but offered with a loose “terms of service” which can be changed at any time by the provider. Subscriptions in some cases • Not necessarily subject to data privacy rules. • Not subject to number portability or public safety requirements • Unicasting technology consumes disproportionately large bandwidth

Policy responses differ to OTTs. One regulatory approach, net neutrality, seeks to restrict how operators can manage their networks to the benefits of OTTs. The two-sided markets approach, on the other hand, supports that operators and OTTs should be allowed to cooperate to make engineering and commercial arrangements as long as they are provided on a “commercially

reasonable” and non-discriminatory fashion. Another option is that regulation should be extended across the OTT space, just as it is to telcos, requiring the OTTs have the same obligations (public safety, data protection interconnection etc). Another idea is to standardize all services within a general competition, antitrust framework where evidence of harm is needed before prosecuting wrongdoing. This would be a shift for telcos which currently face ex ante regulatory obligations.

Dynamic Competition

Dynamic competition refers to technology that drives competition, not the number of providers for a given product or service. Dynamic competition is characterized by innovation, investment, and product differentiation. That is, competition comes from creating different solutions and platforms. We can see dynamic competition in the way that Netflix competes with cable; how Uber, an intelligent transportation application, competes with the traditional regulated taxi industry; and how the online accommodations platform of AirBNB competes with hotels. An understanding of dynamic competition means that a market can’t be judged with a static snapshot of counting the number of players. The level of technology must be considered.

The elementary idea of a perfectly competitive market is one with many buyers, many sellers, perfect information, a homogeneous good, no taxation, and no barriers to entry. These conditions exist almost nowhere in the world in any industry. The textbook examples of perfect competition typically involve at least two farmers selling the same crop. This might be termed as neoclassical or static competition, multiple firms competing to deliver the same or similar products. However as soon as new farming methods are introduced, the competitive forces change. Two farmers could sell the same crop, but one of the farmers could employ a technology enhancement such as a tractor, fertilizer, or better seeds.

The notion of dynamic and static competition in the broadband market has to do what degree firms are allowed to compete on technologies. On account of the high fixed costs and entrance barriers, traditional telecommunications was run as a government monopoly. Most countries in the world began their telecom industry as a government monopoly. Since 1990, the number of telecom regulators in the world has exploded from 14 to 155, as countries transitioned their state-owned networks to regulated monopolies. Regulators were tasked with creating static competition through a framework that provides entrant firms access to the old network.

The trade-off of static competition is to favor superficially low end user prices over the forces of dynamic competition. It’s a short term win that shortchanges consumers in the long term. Consumers and internet companies lose because no firm has the incentive to invest in new networks or competing technologies. The incumbent firm does not want to invest because it has to offer access to its competitors, and entrants see no need to deploy capital when a network service is readily available for reselling.

The US experience is different. The beginnings of America’s telecommunication industry were marked by a number of competing providers. A governmental decree turned AT&T into a monopoly and subsequent legislation such as the 1934 Communications Act enshrined how the

monopoly would operate. Once the Act was promulgated, it took 50 years to undo its deleterious effects. Finally in 1984 the Ma Bell monopoly was broken apart.⁵ After some time, new telecom providers emerged and seeing the advantages of television, experimented with technologies to deliver data and video over telephone wires, and the technology of DSL (digital subscriber line) was born.

Cable emerged in the late 1940s as a project to connect America through television. As remote parts of the country could not be reached by terrestrial TV signals, cable lines were brought to many homes. While many companies emerged locally, they eventually merged to deliver increasing innovation and cost efficiencies to customers. It has been observed that telecommunication regulation was used as a way to stymie the development of the cable industry which represented significant competition to telecom providers.⁶

The game changer for cable was Data over Cable Service Interface Specification, or DOCSIS, in 1997, a standard for data delivery across coaxial cable. This, along with the cable modem, which provides bidirectional communication, allowed cable providers to turn themselves into broadband providers. The cable industry has developed a hybrid fiber coaxial (HFC) cable network, making it a full-fledged broadband provider, offering high-speed data as well as voice in addition to television.⁷

Cable's strategy in its competition with Internet television has been to make the cable experience richer, better, and more diverse. The cable industry has innovated its offering so that television appears in high definition, not standard definition. It also provides a number of tools and devices to improve the viewing experience, such as content discovery. Finally, cable also offers TV everywhere, through the ability to stream cable and broadband content to connected devices.

Subscribers use cable technology not just for television and Internet access, but also for telephony. Some 26 million Americans selected cable as their voice provider as of 2012. Cable operators now make up five of the top ten residential phone companies in the country.⁸ Users can purchase services a la carte, but many opt for a value-priced bundle of cable television, broadband Internet, and voice in a single subscription, also called triple play. Thus the US provided an example early on that competition can come from new technology, arguably more efficiently, than from government fiat.

Dynamic competition is a notion partly arrived from the work of Joseph Schumpeter in his re-interpretation of Marx in *Capitalism, Socialism and Democracy*⁹ in 1942. Giving the example of the dearth of wood forcing a need to find energy substitutes, he promoted the idea that necessity creates invention. Rather than see the business cycle as a Marxist process of accumulation and

⁵ Adam Thierer, "Unnatural Monopoly: Critical Moments in the Development of the Bell System Monopoly," *Cato Journal*, 1994.

⁶ <http://www.cato.org/publications/commentary/are-we-really-deregulating-telecom>

⁷ "Evolution of Cable Television," Federal Communications Commission, March 14, 2012, <http://www.fcc.gov/encyclopedia/evolution-cable-television>.

⁸ "Impact of Cable," National Cable and Telecommunications Association, accessed January 15, 2014, <http://www.ncta.com/impact-of-cable>.

⁹ J.A. Schumpeter, *Capitalism, Socialism, and Democracy*. (Harper, 1942).

annihilation of wealth, Schumpeter proposed creative destruction as an engine of renewable economic growth. Creative destruction is a force *“that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one”*. Schumpeter saw entrepreneurs as creating economic growth and destroying established industries and monopolies. He would have likely celebrated the emergence of over the top technologies (OTTs).

With different technologies a broadband market can have just a few private players—for example, a cable and a DSL provider—and still be competitive. Cable companies and DSL providers continue to upgrade their networks with fiber while employing different technologies to deliver broadband, such as DOCSIS and very fast bit rate rate or VDSL. This cycle of investing to beat the other is a highly legitimate form of competition in markets where technology is quickly evolving.

Competition in the market is driven not just in the networks themselves, but the services over the top of the network. This is where we see Skype competing with voice for long distance; Netflix competing with cable for video; and WhatsApp competing with mobile operators’ proprietary messaging platforms.

Another upstart is Roku, a standalone set-top box that brings hundreds of channels to an Internet device via broadband. There are a number of other providers with different business models, including YouTube, Hulu, Amazon, and Vimeo. With such a robust, indeed disruptive, market for broadband, it is curious that regulators should want to legislate the video market rather than allow the consumer-driven interplay with providers to continue to evolve.

Comcast has continued to innovate and invest in its platform, increasing speeds, coverage, and content. In 2011, it unveiled a hybrid-coaxial cable network reaching gigabit speeds.¹⁰ This network platform will continue to yield bandwidth increases for the foreseeable future, and there is no reason to deny the customers of TWC those benefits. With node splitting, spectrum utilization, better modulation, 24-channel bonding, and DOCSIS upgrades, cable coaxial networks can continue to meet consumer demand for many years.

The scale of cable provider Comcast has allowed it to invest in another broadband technology, neighborhood Wi-Fi. Comcast is turning the homes and neighborhoods of its subscribers into millions of Wi-Fi hot spots around the country. To enable this, Comcast offers customers an all-in-one device that combines a customer’s wireless router, cable modem, and voice adapter. This device broadcasts two Wi-Fi signals, one securely configured for the subscriber and the other for the neighborhood, which can be accessed by anyone in the vicinity. Using unlicensed spectrum, Comcast’s neighborhood Wi-Fi program is an important innovation and creates competition for mobile broadband providers.¹¹

¹⁰ Tony Werner, “Comcast CEO Brian Roberts Demonstrates 1Gbps Speed Broadband Connection and Next Generation Video Product,” Comcast, June 16, 2011, <http://corporate.comcast.com/comcast-voices/comcast-ceo-brian-robert-demonstrates-1gbps-speed-broadband-connection-and-next-generation-video-pro>.

¹¹ “Comcast Unveils Plans for Millions of Xfinity WiFi Hotspots through Its Home-Based Neighborhood Hotspot Initiative,” Comcast, June 10, 2013, <http://corporate.comcast.com/news-information/news-feed/comcast-unveils-plans-for-millions-of-xfinity-wifi-hotspots-through-its-home-based-neighborhood-hotspot-initiative-2>.

To be sure, dynamic competition and disruptive innovation don't fit into a tidy box for regulators. New competitors are not under traditional obligations such as interconnection requirements, data portability, licensing, and so on. In an era marked by rapid change, regulators should have the courage to allow the industry to evolve and retire regulations when they are obsolete.

Here are some examples of OTTs and dynamic competition in the marketplace

[Aereo debuts](#) – Aereo, a company that allows viewers to watch broadcast television via the Internet, debuts

[Amazon Prime](#) – Amazon, formerly an online marketplace for physical goods, begins a streaming video service

[Apple introduces a free SMS service](#) – Apple, a handset provider, introduces a free SMS program to compete with wireless broadband carrier service

[Apple introduces Facetime](#) – Apple, a handset manufacturer, debuts Facetime, a telephony product that competes with traditional cellular voice service

[Facebook/WhatsApp acquisition](#) – Facebook, an edge social network, purchases WhatsApp, a texting app that competes with the SMS services of wireless broadband providers

[Facebook reportedly eyes providing wireless with drones](#) – Facebook, an edge social network, is reported to be purchasing drones to blanket Africa with wireless Internet

[Google fiber deployment](#) – Google, a search engine and video edge provider, enters the wireline broadband market by deploying fiber Internet service in Kansas City, MO; Kansas City, KS; Austin, TX; and Provo, UT; with another 34 cities being considered as targets for further expansion.

[Google backs Android](#) – Google, a search engine and video edge provider, backs and eventually purchases Android, a mobile operating system

[Google introduces voice service](#) – Google, a search engine and video edge provider, introduces a web-based telecommunications service called Google Voice.

[Microsoft mobile handset and OS](#) – Microsoft expands from desktop/laptop software to tablets and phone handset hardware, as well as a mobile operating system

[Microsoft buys Skype](#) – Microsoft, a desktop/laptop software developer, purchases Skype, a VoIP video conferencing service that rivals traditional voice service.

[Netflix moves to set-top boxes](#) – Cable companies announce that streaming video provider Netflix will be viewable from their set-top boxes

Numerous companies introduce web-based streaming platforms to rival traditional broadcast, cable, and satellite television service

- [Apple introduces Apple TV](#)
- [Google introduces Chromecast](#)
- [Amazon introduces Fire TV](#)
- [Microsoft's Xbox expands to streaming content](#)
- [Sony's PlayStation 3 expands to streaming content](#)
- [Roku's set-top service](#)

Thank you for the opportunity to participate in this consultation. Please be in touch with us if we can provide further information.

Best regards,



Roslyn Layton, Ph.D. Fellow
Center for Communication, Media
And Information Studies
Aalborg University
Copenhagen, Denmark



Silvia Elaluf-Calderwood, Ph.D.
London School of Economics
Information Economy Project
London, United Kingdom

Zero Rating Articles

IGF highlights how developing countries use zero rating programs to drive Internet adoption

by: [Roslyn Layton](#)

September 4, 2014 6:00 am

Some 3000 participants from around the world convene this week in Istanbul for the 9th meeting of the Internet Governance Forum (IGF). The role of IGF is to support the United Nations Secretary-General in developing governance principles for the Internet. To do so, IGF brings people from various stakeholder groups together in discussions on public policy issues relating to the Internet. While there is no negotiated outcome to these discussions, the IGF informs and inspires those who influence the policy-making process in both public and private sectors. Topics on the agenda this week include net neutrality, digital trust, and the Internet's role in promoting human rights, content creation, growth and development.

A key portion of the conference focus on the multiple perspectives on the issue of net neutrality, reflecting the diverse nature of the participants and the constituents they represent. As the Internet becomes increasingly global, American stakeholders are stepping up their visibility in the IGF and increasing their learning about the rest of the world. FCC Commissioner Mignon Clyburn attended a

main session on net neutrality to reiterate the FCC's commitment to an open Internet, including transparency, a no blocking rule, and reasonable network management.

It was observed that two-thirds of the world's population is not yet online and that having a global discussion about net neutrality is likely premature. Connectivity is the first priority of many stakeholders. In this vein, the discussion of zero rating programs was particularly insightful as it offers a way to get people in developing countries online.

Zero rating is a mobile business model in which certain content or applications are not counted toward the consumer's data cap. Such programs are used as an incentive to get people to try the Internet by offering a particular service. The program is popular across developing countries, particularly in India where the elderly, who have never used the Internet or a computer, now use zero rated programs for Facebook and WhatsApp to connect with their grandchildren around the world.

Yana Welinder, Legal Counsel for the Wikimedia Foundation shared interesting information about Wikipedia Zero, a version of Wikipedia designed for mobile platforms in developing countries and only offered through zero rated bundles. It is offered to carriers on a non-exclusive basis, and no payment is exchanged either way. Wikipedia Zero is available to an estimated 350 million people in 30 countries; it serves more than 65 million pageviews every month. The Wikimedia Foundation has received requests from grassroots organizations around the world to bring the program to their country. After one Nepalese [edited 6000 entries on Hindu culture on Wikipedia](#) with a feature phone, Wikimedia brought the program to [Nepal](#).

Helani Galpaya, CEO of LIRNEasia noted that mobile phones have a high penetration across countries in South-East and South Asia, and that there even exist a fair number of low priced data plans. However there are many at the so-called bottom of the pyramid for whom even a low priced data plan is still challenging. Zero rating has helped them come on aboard.

One criticism of zero rating is that it gives users a myopic view of the Internet. However Alejandro Pisanty, Director General for Academic Computing Services at the National University of Mexico (UNAM) and member of ISOC and ICANN, dispelled that notion by pointing out that users of zero rated programs combine them with wifi network access to access the rest of the Internet.

Furthermore, it's important from a social justice perspective that for activists in many countries, Facebook and Twitter are the de facto platforms for communication. Access to these platforms are important for many, and they welcome zero rated access. In Iran for example, it might not be possible to use an Iranian platform for advocacy and authenticity because of government censorship.

Another criticism of zero rating is that it could be detrimental to competitors of the popular services. However, as was observed at the conference, many of the programs are offered on a non-discriminatory basis, so other services can also be a part of the package. Galpaya at LIRNEAsia noted that some countries are exploring how locally developed apps and government services could come under the program. She noted that in order to do this, governments need to make data available in real

time in digital and standardized fashion. Additionally Wikipedia is also open to collaborating with other public interest sites.

Berin Szoka of TechFreedom outlined best practices from a variety of programs and countries. He noted that Turkcell offers its program only for a limited time, so users will eventually need to upgrade to full Internet packages. This approach has driven data plan adoption significantly in Turkey.

The zero rate discussion led to the larger question of how mobile is priced. It was observed that the allocation of spectrum could be improved and the need for smart regulation (government to reduce red tape, provide the “poles and holes” so that companies can deploy infrastructure).

However despite the many benefits of such programs, they have been outlawed in countries such as Chile, and a number of advocates in the US are calling for similar prohibitions. A group of Internet activists from Sudan 2.0 expressed concern that such bans will impinge their ability to engage in zero rate programs, which they consider important to develop engaged Internet users and their own Internet economy.

There is growing interest to learn more about zero rated programs, and a number of individuals and organizations are studying it. The worst idea would be to outlaw it before data about its effects could even be collected. As Szoka observed about permissionless innovation; don't ban what you don't understand.

- See more at: <http://www.techpolicydaily.com/communications/igf-zero-rating-programs/#sthash.Smz5tToM.dpuf>

A Response to the Norwegian Regulator on Zero Rating

The Norwegian Communications Authority (NPT) recently published a blog on [Net neutrality and charging models](#) in which it suggests that operators should be prohibited from using zero rated subscription models. NPT can be commended for its openness by posting its blogs in English (making the content more accessible and searchable) and by publishing the direct contact information of its employees. Norway has an impressive record on net neutrality, not only for its leadership in addressing the issue early on, but in a voluntary, co-regulatory approach which has succeeded to deter violations for 5 years and running. The Norwegian approach proves that supporting an Open Internet is already in the business interests of operators, and ex ante regulation is not needed to force operators to do what they want to do anyway.

Creating regulations on net neutrality is a complex and difficult endeavor, not the least of which because there are many definitions of the term. The NPT blog does a good job to address various perspectives. There are some additional points to be considered on zero rating, the practice of exempting some content or applications from charge in a users subscription. However the concept of zero rating, essentially that of sponsorship, has been around for some time. This research note addresses zero rating in various ways: by the media industry, in the developing world, in its relation to video and data caps, and in the evidence for consumer welfare/harm.

Zero-rated models in traditional and new media

One of the key benefits of zero rating is that it allows more actors to participate in the Internet ecosystem. There is no reason why consumers should have to bear all the costs for their internet subscriptions, especially for entertainment. If we look at the history of the media industries, advertisers played a major role in radio, print, and television. Having advertisers sponsor radio programs and place advertisements in print helped to increase the distribution and diversity of content. If we only relied on consumers to pay for the cost of content, there would be much smaller selection of content today.

Consider what net neutrality would mean for newspapers. There would be a rule that would ban advertising outright and require that newspapers only earn revenue from readers. Taking an example with the zero rating rule applied to newspapers, it would observe that it is discriminatory to allow some advertisers to buy full page ads while others purchase small ads, so only one size of ad can be purchased, and the ads are randomly allocated across the paper.

Advertising has certainly helped the growth of Norwegian television, and today in Norway both sides of the market pay to support content. People purchase television packages, but there are also advertisements on television. Until the 1980s, Norwegians had only one TV channel, and it was funded through compulsory media license fees, or taxpayers had to bear all

the costs. To be sure, there are benefits to publicly funded television, but allowing different parties to participate has increased the amount and diversity of TV content.

Most internet companies that offer free services employ a form of zero rating by having advertisers fund their activities. For example Google offers zero-rated searches with advertisers subsidizing the cost. Indeed the Google AdWords bid engine works on the concept of quality; those advertisers that create better quality ads (e.g. more relevant to the consumer search query), pay less for each click. This is certainly a non-neutral system, but it drives relevant advertising, and as Google would argue, a better user experience. There is no doubt that usership of the search engine increases because advertisers subsidize the cost, making it free to users.

If dozens of other media can use zero rating to serve consumers, it is illogical that the telecommunications industry should be barred from the same practice. Indeed a consumer advocate could argue that prohibitions against zero rating violate consumer sovereignty.

Zero rating in the developing world

Between one-third to forty percent of the world's population is online today. Getting the rest of the world online is an important goal, and zero rating is one way to achieve it. For people not online today, cost and lack of relevance are the reasons why. A zero-rated program is a way to overcome those barriers. A zero-rated mobile plan is essentially a free trial, just as we might request before purchasing a health club membership or a car.

A key application of zero rating is practiced by operators in India, in which grandparents purchase mobile subscriptions with zero-rated versions of WhatsApp to message with their grandchildren abroad. Without the incentive of a cool service offered for free, the grandparents might never try the Internet. To outlaw the service would be depriving people of valuable communication.

Zero rating can be employed for marketing purposes such as leveraging the popularity of Facebook and Twitter, but it is also valuable to promote locally-produced content, government services (e.g. bus schedules, health applications), or Wikipedia. Indeed the Chilean regulator outlawed zero rating, but it has since made an exception for Wikipedia, because of popular protest.

As NPT states, the goal of net neutrality is to preserve the internet as an open platform, but in many instances in developing countries, users may never try the internet at all without a zero-rated experience. Thus prohibitions against zero rating may be an elitist European or American notion of deciding how the internet should be for others, rather than letting people decide for themselves.

A full discussion of the topic can be found at the recent Internet Governance Forum. See the [video](#) or read the [transcript](#).

Zero rating video and data caps

Another hot issue is zero-rated video and data caps. NPT presents the example in which a provider favors its own video service by exempting its service from the data cap while competing services apply. This issue could be handled without net neutrality. Indeed competition law has provisions under tests of margin squeeze, tying, and discrimination. However we can imagine a situation where a non-dominant operator, or even a municipal operator, created a compelling service with local content, for example local news, government, and school activities. The operator wants to zero-rate the service to encourage viewing. Competition law would say that exempting the data from the cap is not a problem if the provider does not have a dominant position in either the broadband market or the video market. However net neutrality rules would prohibit this valuable public service if zero-rated.

There is a contradiction in expecting an operator to be competitive but eliminating the ways in which it can compete. Net neutrality says that operators should only be able to differentiate on broadband speeds, volume and price. This makes for a dreary commoditized market in which the incumbent with the largest network has the advantage. More often than not, the innovative packages in the marketplace come not from the incumbents, but from upstarts. Zero rating is more frequently employed by the #3 and #4 operator as a form of differentiation.

Net neutrality advocates focus on hypothetical cases where an operator "could" favor its own service. They should instead focus on the record. Many operators have attempted to make competing services to over the top providers, but have failed miserably. Which would you rather use: Facebook or Telenorbook? Last month Verizon ended its proprietary video service RedBox because Netflix, Amazon, YouTube and others are just more compelling. Operators launch new services every day, most of them fail. There's a natural process in the marketplace where consumers decide. Regulators don't need to intervene.

As for the assertion that zero rating programs will be out of the reach of new entrants, the reality is the opposite. We see a number of small and niche content providers using these models today as the way to compete with the established players or to serve its audience, for example a health care insurance company that wants to encourage its users to watch videos that encourage healthy habits.

In any case, connectivity is a minor cost for startups. Moreover internet transit [fees have fallen by 99%](#), and they continue to fall.

Lack of data on zero rating programs

NPT asserts that net neutrality is needed to prevent discrimination or fragmentation of the Internet, however differentiation of packages based on quality and service is not discrimination. Consumers should have diversity of choices, not just packages based on speed, but packages based upon their preferred service and lifestyle. A one size fits all internet package as proposed by net neutrality may serve some users but not others.

Consider the lifestyle package suggested by EPlus, the German operator which has a partnership with WhatsApp to offer zero rated mobile subscriptions. The WhatsApp functionality works even when the balance is not paid.

Anecdotally we know that these programs tend to drive adoption. After trying the zero-rated program, users tend to upgrade to full packages. This is a desirable outcome both for net neutrality advocates and operators. Net neutrality advocates want people to pay "full price" for a "full internet" experience. Operators also want to ensure that they can migrate their customers on discount programs to full-paying programs.

We also know that users with zero rated products also avail themselves to internet via wifi, internet cafes, and libraries. This counters the assertion that if people use zero rated products they won't know that there are other offerings online than Facebook.

We can conclude that zero rating delivers some level of consumer welfare, however there are still more questions that deserve investigation. For example, do zero rating programs eliminate the next Facebook? On the other hand, does the opposite happen? An app developer may use a zero rated program to study Facebook and then launch his own version. One of the contradictions of net neutrality is that even with rules in place, the most popular websites still get the lion's share of the traffic, and increasingly so. Maybe net neutrality is having the opposite of the intended effect.

This is the case in the Netherlands. The Dutch expected their net neutrality rule to herald a flowering of Dutch content and applications. Instead they have experienced the "Netflix Effect" in which traffic from the American giant has ballooned from zero to 20 percent of all downstream network capacity almost overnight with just a small percentage of subscribers. As Netflix grows to its stated goal of one-third of all households, literally the entire network will be consumed by its video streams.

NPT should do its utmost to be independent and to make fact-based regulation. While we have anecdotal stories about zero rating, there are no definitive studies. As such, it is premature to make a regulatory pronouncement on the issue. Until NPT has studied the evidence and quantified consumer harm, it should refrain from making a rule or recommendation.

Rather than make hypothetical statements, conjecture, and prediction, why don't we study the matter and collect data? Don't ban what you don't understand.

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