



7 January 2016

Ms. Vinod Kotwal, Advisor (F&EA)  
Telecom Regulatory Authority of India  
Mahanagar Door Sanchar Bhawan  
Jawahar Lal Nehru Marg, New Delhi – 110002

Re: Differential Pricing for Data Services, No. 8/2015

Dear Ms. Kotwal,

Thank for you for opportunity to comment in the TRAI's consultation on differential services. That TRAI reviews its rules, makes appropriate updates, and removes obsolete regulation demonstrates that it is doing its job. In fact TRAI has had considerable success to date in promoting competition in the mobile industry. The *10th Anniversary Telecommunications Regulation Handbook*<sup>1</sup> notes the following about TRAI,

*In 1999, when its New Telecommunications Policy was adopted, India had about 1.2 million mobile subscribers, and effective charges were 14.51 Rs./minute. Pro-competitive and liberalization-oriented policies . . . had a positive effect both on penetration and prices. As of December 2009, mobile subscribers had increased to 525 million and prices had dropped to 0.64 Rs./minute.*

Simply put, within a decade of unleashing market forces in India mobile subscriptions increased 500-fold and prices dropped more than 95 percent. This success was achieved by allowing telecom service providers (TSPs) to differentiate in offer and price. The Indian government recognized this success and enshrined the market-oriented principles in its National Telecom Policy of India of 2012.<sup>2</sup> The policy acknowledges the paradigm shift of convergence and wants to support triple play packages (voice, video, and data) for wireless services as means to expand broadband deployment and access.

India may comprise nearly a fifth of the world's population, but its level of Internet adoption is quite low. However the country could make a quantum leap in Internet adoption—similar to mobile--by allowing market forces to work. This means that TSPs need to be able to differentiate themselves on price and data services, and TRAI needs to allow the legally afforded forbearance.

The key points in this comment are

- TSPs appear to be following the requirements of the Telecom Tariff Order. There is no evidence of a problem or market failure that requires regulatory intervention with regard

---

<sup>1</sup> Colin Blackman and Lara Srivastava, *10th Anniversary Telecommunications Regulation Handbook*, vol. March 2011 (infoDev | The World Bank | The International Telecommunication Union, n.d.), <http://www.infodev.org/articles/10th-anniversary-telecommunications-regulation-handbook>.

<sup>2</sup> <http://www.trai.gov.in/WriteReadData/userfiles/file/NTP%202012.pdf>

to differential prices and data services. Competition is robust with a variety of TSPs offering diverse offers at multiple price points.

- Differential pricing has always been part of the market for content and connectivity. This is a basic tenet of economics and must continue if India wants to realize its Digital India goals.
- TRAI needs to cultivate independence and functional competence to be a credible telecom regulator.
- A review of empirical evidence for bans on differential pricing show that they hurt consumers and competition, most especially small content providers and entrant TSPs. TRAI should collect the facts and conduct a proper investigation before making any decisions.
- The US and Denmark have allowed TSPs to differentiate on price for data services and content. There is no record of consumer complaint, and these offers are most valuable for small content providers and entrant TSPs.

Please know that I appreciate the opportunity to comment and share my relevant academic research and work experience in India. This comment is submitted with sincere wishes for India to get its Internet policy right so that the country can develop its digital economy and lift the poor out of poverty. Few things can do so much good as good telecom policy, but remember the first rule of regulation: do no harm. As such, the countries that have succeeded with telecom policy are generally countries that ensure a limited role for regulation, foster meaningful facilities-based competition, and remove regulations when they are no longer necessary.

I have not received any compensation to submit this response to the consultation. This comment reflects the results of my research and my views. I do not speak on behalf of Aalborg University or any other organization with which I am affiliated.

A list of my relevant papers and articles for your proceeding appears at the end of the document. A copy of my paper on zero rating is attached. Thank you for considering my comments. I am happy to elaborate or answer any questions from TRAI.

Sincerely,



Roslyn Layton  
Ph.D. Fellow  
Center for Communication, Media and Information Technologies  
Aalborg University  
A.C. Meyers Vænge 15  
Frederikskaj 12, 3rd Floor  
Copenhagen, Denmark 2450  
[rl@cmi.aau.dk](mailto:rl@cmi.aau.dk) | Mob: [+45 3131 0079](tel:+4531310079) | Tel: [+45 9940 3641](tel:+4599403641)  
<http://www.cmi.aau.dk>

## My qualifications to participate in this consultation

Though born in the US, I have worked in the IT industry and studied Internet policy in many countries, including India. I was honored to work under the tutelage of Dr. M. Vidyasagar at the Advanced Technology Center at TCS Innovation Labs-Hyderabad. Now I am part of Denmark's Industrial Ph.D. program,<sup>3</sup> an initiative of the country's Ministry of Science, Innovation and Higher Education. To improve the quality of internet policymaking, I research the impact of net neutrality rules to innovation and investment in 50 countries. I am one of the few academics who has conducted an empirical inquiry on zero rating.<sup>4</sup> My preliminary results of a test of the efficacy of net neutrality has been published by Springer and appears in the Dynamic Coalition on Net Neutrality's Compendium<sup>6</sup> in a chapter titled "Test of the FCC's Virtuous Circle: Preliminary Results for Edge Provider Innovation and BIAS Provider Investment by Country with Hard Versus Soft Rules."

I work at the Center for Communication, Media, and Information Technologies (CMI) at Aalborg University in Copenhagen, Denmark.<sup>7</sup> Aalborg University is known for its scholars of innovation, including Bengt Åke Lundvall who coined the term "learning economy"<sup>8</sup> and who developed the National Innovation System<sup>9</sup> concept. The mission of CMI, a cross-disciplinary center within the Department of Electronic Systems, is to explore and develop the potential of new converging communication, media and information technologies and associated platforms and to offer competences and expertise to companies and public institutions. Our university has a partnership with Vishwaniketan's Institute of Management Entrepreneurship & Engineering Technology (iMEET)<sup>10</sup> outside Mumbai and hosts Indian PhD students in Denmark. My doctoral project leader Knud Erik Skouby is Special Advisor to the The Global ICT Standardization Forum for India with the goal of helping to develop telecom infrastructure in rural India.<sup>11</sup>

At CMI we teach telecom regulation, and our scholars have been important global policymakers. One of our teachers is William Melody<sup>12</sup>, founder of the World Dialogue on Regulation and founding director of LIRNE, a cross-national academic collaboration to facilitate telecom reform and information infrastructure development. You will likely recognize LIRNEAsia, a pro-poor, pro-market think tank. An alumna of my department is Lara Srivastava, editor of the *10<sup>th</sup> Anniversary Telecommunications Regulation Handbook*.

I blog at TechPolicyDaily.com and Forbes.com. I am affiliated with the American Enterprise Institute and Strand Consult.

---

<sup>3</sup> <http://ufm.dk/en/research-and-innovation/funding-programmes-for-research-and-innovation/find-danish-funding-programmes/programmes-managed-by-innovation-fund-denmark/industrial-phd>

<sup>4</sup> [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2587542](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587542)

<sup>6</sup> <http://www.springer.com/us/book/9783319264240>

<sup>7</sup> <http://www.cmi.aau.dk/>

<sup>8</sup> <http://www3.druid.dk/wp/20060006.pdf>

<sup>9</sup> [Lundvall, B-Å.](#) (ed.) (1992). National Innovation Systems: Towards a Theory of Innovation and Interactive Learning, Pinter, London

<sup>10</sup> <http://vishwaniketan.edu.in/>

<sup>11</sup> <http://slideplayer.com/slide/7652986/>

<sup>12</sup> <http://www.itu.int/en/ITU-T/academia/kaleidoscope/2013/Pages/MelodyW.aspx>

## Preamble

The NTP makes a number of important points worthy to mention in light of the current consultation. It observed that India has the world's fastest growing telecom sector, that telecommunications comprises 3 percent of gross domestic product, and that the private sector accounts for an impressive 88 percent of telecom investment. The goal of the policy is to achieve the following goals

- Support telecommunications deployment and adoption in rural and remote areas
- Ensure the availability of affordable and effective communications services
- Support growth and employment in telecommunications industry and related sectors
- Foster an investor-friendly environment

Thus TRAI should be mindful that its decisions support and fulfill the overall NTP objectives and take great care not to reduce the benefits that the policy has allowed to date, namely a competitive marketplace with pricing flexibility as well as consumer choice.

With regards the the referenced Telecom Tariff Order (TTO), the Memorandum makes some important points as well including

- The need for tariff reform to stimulate competition, specifically to support entrant TSPs and reduce the power of incumbents
- Emphasis on the “social objective” of encouraging low users of telecom to get connected and use the system more intensively; and
- That service providers will be provided enhanced flexibility for pricing and giving alternative tariff packages to customers.

The memo then explains subscribers have the freedom to select the tariffs of their choice (*“Subscribers shall have the freedom to choose among the available tariff packages, including the standard tariff package”*), and that forbearance to tariff regulation is applied in particular areas. Specifically, forbearance is offered for tariffs for

- *Value added services, and other services with competitive markets;*
- *New or emerging services; and,*
- *Services which require to be studied further* (Annex A, Section B Flexibility of Tariffs, Standard Tariff Package and Alternative Tariff Packages)

The Memo also notes, *“It is important that the conditions of access to the network do not constrain subscribers from getting connected to the network.”* TRAI should also be concerned that any decision it takes to reduce pricing flexibility not only departs from a successful policy to date, but may slow the rate of Internet adoption in India.

While it is not mentioned in the consultation paper, the memo also explains the importance of the *affordability* of tariffs and cites a statistic from the ITU that telecommunications should not comprise more than 5 percent of household income. The memo also notes that *“Internet tariffs*

*should encourage the supply, use and expansion of Internet services, and promote innovation in these services.”*

It is clear that the Indian telecom laws were written to promote competition and flexibility in pricing and data services, not uniformity. Others goals are promote the entrance of TSPs as well as the affordability of pricing and the adoption of services, particularly for people with low income and in rural areas. Moreover the regulator emphasizes the role of consumer choice and has an express forbearance policy with regard to tariffs for new and emerging services as well as those which require further study.

TRAI has been featured in the American and EU media over the last year regarding a number of consultations, most recently this differential pricing consultation. That Indian TSPs Airtel, Reliance, Idea, Vodafone, and others offer competitive content bundles at differential prices should be embraced. In reading the law, it appears that these operators are doing what the law says: fulfilling the “social objective” to encourage low users of services and to provide consumers “alternative tariff packages”. In fact with free and low cost offers, TSPs are following the NPT and TTO mandates.

TRAI should not be concerned about these developments; this is exactly the evolution that the law had in mind. Moreover it is confounding, as reported in the media, that a set of Internet activists—mobilized from their US counterparts--would oppose what the Indian laws states TSPs should do.

The differential pricing consultation inquires to what degree mobile broadband Internet pricing plans conform to its standards and principles of non-discrimination, transparency, and the assurance that tariffs are not anti-competitive, predatory, ambiguous, or misleading. It also intimates the question of whether current mobile tariffs are not arbitrary with regard to either class or subscribers. It is widely recognized that traffic in mobile networks is increasingly data. Meanwhile a TSP’s voice and SMS are increasingly commoditized. It would seem then that the pricing for data services, in its current competitive mode, is not in fact arbitrary. TSPs are simply responding to the competitive marketplace in which consumers demand more Internet and less voice/SMS.

Regarding TRAI’s point about tariff transparency, the point is for TRAI to ensure transparency so that consumers select their own plans. It is not the role for TRAI to decide the way the market organizes or what kind of tariffs TSPs offer, provided they comply with the TTO. That is to say, TRAI’s should not ban tariffs that do not contravene the laws. From reading the laws, that TRAI would suspend an emerging service offer from Reliance—from which it is supposed to forbear, at least until it studies it further—seems to be a violation of the law.

Ideally telecom regulation should be explicit so that TSPs and the public understand it. Moreover TRAI itself should be able to perform real world tests to prove its assertions as well as to validate its decisions. If TRAI does not have the information it needs to make a decision, then it should collect the necessary information. While TRAI needs to collect public comment, it should not be swayed by it. Regulatory investigations should proceed in the same manner as scientists conduct

experiments. Similarly, regulatory decisions should have the same quality of process and logic as scientific experiments, and the outcome should be factual and independently verifiable.

Telecommunications has historically been a highly regulated sector for legitimate reasons: there was a national telephone company; telecommunications were considered crucial for national security; and in many countries, the TSPs were de facto tax collectors for the state. However as communications technologies have advanced and diversified, deregulating the national telephone monopoly was seen as key regulatory activity. In the last 25 years alone, more than 100 telecom regulators have been established for this singular task. In fact ensuring the transition from monopoly to competition is the charter of a telecom regulator. So as much as possible, the telecom regulator should facilitate market entry, differentiation, and competition. Regulation by its nature creates distortions and asymmetries, so it needs to be applied in a limited way and only when absolutely necessary. Pricing and offers are some of the most basic ways that firms can compete, so this ability should be encouraged.

Following are answers to the consultation questions.

### **1: Should the TSPs be allowed to have differential pricing for data usage for accessing different websites, applications or platforms?**

The short answer is yes. TSPs should be allowed to have differential pricing, and this is protected by law. But the need for differentiation can be explained from the basics of economics and the history of connectivity and content which were always sold with a differentiated price.

#### **Economic justification for differential pricing**

We may take for granted why we use prices, but they play an important role in the marketplace. Prices communicate information to consumers. Prices help to provide efficient distribution of goods and services. Price regulation, such as ceilings or floors, are in fact distortionary and misleading, and generally result in shortages or surpluses. In telecommunications this means that some users would go without connectivity or access. It could also mean that TSPs would have unused capacity that would be wasted.

The role of pricing in the modern telecommunications is to drive competitive dynamics. Having differentiated pricing is essential to realizing Prime Minister Modi's Digital India initiative. Its three major goals can be realized in part through differential pricing: the creation of new telecommunications infrastructure; the delivery of digital services; and digital literacy.

Network industries, such as telecommunications, have high upfront costs which are generally fixed for a large set of users. Once established, the cost of incremental output declines. It makes sense, therefore, to charge users with lower willingness to pay a discount, and thus cover the overall costs.

To put it another way, the fixed costs of a network are the same whether there are 1 million or 100 million users. Thus it behooves the TSP to maximize the number of users on the network at all possible price points because it maximizes revenue. By imposing a rate regulation or price controls (or by banning the ability to differentiate on price), TRAI will reduce the incentive for a TSP to invest in new networks. To be sure, some users can afford a higher, regulated price, but

the regulated price reduces the number of users on the network. It also decreases the incentive for the TSP to invest because its revenue is reduced.

I have observed this very dynamic in my own research. When bans on zero rating were imposed in Netherlands and Slovenia, the amount of data in the largest packets was increased, but the lowest price or zero rated offers in the marketplace were removed. This has the effect of punishing those who can least afford service. It essentially subsidizes the rich at the expense of the poor. It also punishes the TSP by reducing the number of users on its network and reducing the number of subscriptions from which it can earn a return on its investment.

A TSP will expand its revenue if it can increase the number of users on its network. Thus getting the users from the proverbial “bottom on the pyramid”<sup>15</sup> on board, even if for free to start, is crucial. With more users and subscriptions, a TSP earns revenue, the capital needed to invest in new infrastructure, thus achieving the first goal of the Digital India project.

As for whether there should be different price points to access different content, websites, applications and so on, the short answer is yes. The simple reason is that people value content differently. There is no reason to force people to pay for content they do not value. Here is an example.

You are a fan of kabbadi. I am a fan of cricket. That I purchase a package of connectivity bundled with cricket information does not make you worse off. Similarly if you purchase connectivity bundled with kabbadi information does not make me worse off. However there is a cost to a TSP to try to make such bundles, and any exclusive bundle means that the TSP must expend marketing funds to find a relevant audience. Thus the TSP is incentivized to create a package with the content that has the broadest appeal, including both cricket and kabbadi (and many other types of content). That is to say that there are costs to making bundles, metering them, and marketing them. In general it is more economic for operators, all things being equal, to offer bundles with the maximum broadest content possible that users want, provided that the price is competitive.

However the laws of supply and demand still hold. The assertion that all plans must be “full access to all possible content” assumes that users value all data equally. They do not. Traffic to the world’s internet content is highly disproportionate. Ninety nine percent of the world’s users go to only 1 percent of its content.<sup>16</sup> Similarly we can see that people have different tastes in books, music, movies and so on. “Lagaan”, my favorite Indian movie, is 100 times more popular than “OMG: Oh My God”. I am not willing to pay to see “OMG”, but I would pay to see “Lagaan”. However someone else may be willing to pay for “OMG”. It is because of differentiated prices that the market will produce both films. If we insist on one price for all, only “Lagaan” will get made. There will be no “OMG”.

---

<sup>15</sup> Pralahad, C.K. *The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits*. Pearson Education, 2004. <http://www.amazon.com/The-Fortune-Bottom-Pyramid-Eradicating/dp/0131467506>

<sup>16</sup> See the list of the world’s most popular websites. <http://www.alexa.com/topsites>

India is a country with many languages and cultures. A operator based in Delhi would be foolish to offer a package of Telugu language content which would be better marketed to subscribers in Andra Pradesh. A TSP that does not obey the laws of supply and demand will be out of business.

In fact there is not a single good or service that we consume that is not subject to a differential price. Price differentiation is commonplace in ticket sales for movies, sports, and cultural events. For example discount tickets for students and the elderly are a matter of course, as are reduced prices for off-peak performance times. With regard to transportation, whether bus, plane, train, or ferry, reduced ticket prices are also offered to certain segments of the population. Additionally there are discounts for early purchase, off peak purchase, and so on. The Internet is no less important than culture, transportation, and health, and if price differentiation is the norm in those markets, there is no reason why Internet access should not have the same privilege of flexibility.

For people who have never tried the Internet, they may need an incentive to try it. It is commonplace to offer a sample or free trial for any number of goods and service. It should be no different with the Internet, and differential pricing allows more efficient delivery of services, not to mention a greater diversity of services. Thus allow differential prices for data services, TRAI will fulfill the second goal of the Digital India plan, the delivery of digital services.

The Digital India Initiative contemplates the totality of the digital experience. This incorporates the networks, devices, and services that make up a symbiotic ecosystem. A healthy system requires the free interplay of these actors and the ability to price efficiently. Digital literacy, the third pillar of the Digital India Initiative, requires the external factors such as education. But the more diverse and efficient the networks, devices, and services are, the more affordable they will be. This only supports digital literacy.

In thinking about its role to support the Digital India program, TRAI should appreciate the totality of the forces at play and not attempt to jigger the system by manipulating one part of a highly interdependent ecosystem.

### **History of content and connectivity**

Differential pricing has been crucial for the history and development of the provision of content and telecommunications.<sup>28</sup> That we use mobile devices to connect to the Internet is not new. From its very invention, the telephone was considered to be a medium to distribute content, not just voice.

In the US in the 1880s-1890s AT&T made a number of attempts to deliver a news and entertainment services over the telephone, but it wasn't a success. This shows that just because a network provider offers a service does not mean that it will succeed, even if it owns the network facilities.

Various "telephone newspapers" which delivered news and entertainment over the telephone existed in Europe, including the successful Telefon Hírmondó (Telephone Herald) in Budapest

---

<sup>28</sup> <http://www.techpolicydaily.com/internet/telephone-newspaper-todays-internet/>



which operated for 50 years beginning in 1893. It was funded by monthly subscriptions and advertising.

A similar concept existed in France, called the Théâtrophone<sup>29</sup> (1890-1932). Transmitters were installed on the stage at the Paris Opera connected by wire to a dispatch center and then to hotels, clubs, cafes, and subscribers' homes. News supplemented the daily transmission of performances. Differential pricing was employed to sell subscriptions and tickets at various rates to different levels of content.

In Britain the Electrophone<sup>30</sup> (1895-1925) service was offered over the existing telephone network in cooperation with the National Telephone Company and British Post Office. Content included live theatre, music, and on Sunday, religious services. One could request a particular program a la carte or by subscription. There was no advertising, and subscriptions were high, \$50/year in 1900, equivalent to a monthly fee of \$1428 in today's dollars. At its height, it had only 2000 subscribers. That there was no ability to price differentiate may have had something to do with the limited uptake of the service.

In the US, it could be observed that regulation actually deterred the early development of content delivery by telephone. M. M. Gillam, former advertising manager of the New York Herald, licensed the telephone newspaper concept from Budapest. He suffered a six month delay from the Public Utilities Commission.<sup>31</sup> He reached 1000 subscribers in a small part of New Jersey after one year in 1912. But without a dedicated line for the service, it was not possible to consume news and make a phone call at the same time. That the US government created the Kingsbury Commitment in 1913, enshrining the AT&T monopoly, may have been part of the demise of Mr. Gilliam's innovation.

Lee De Forest was a key innovator in content and connectivity, having developed the audion (three electrode vacuum tube) and phonofilm (sound-on-film recording). He also allegedly coined the name "radio". He founded the De Forest Radio Company to deliver a WWW of its own: "world wide wireless." Though opera had long been broadcast by telephone in Europe, the company's radio transmission of Tosca from the Metropolitan on January 12, 1910,<sup>32</sup> was considered a revolution in communications in America.

DeForest continued experimenting in radio broadcasts in cooperation with the Columbia Graphophone Co. In exchange for providing records to the DeForest, Graphophone received a mention on the radio each time a new song was played,<sup>33</sup> a form of advertisement. There were

---

<sup>29</sup>"The Theatrophone," *The Electrical Engineer*, Page 161, August 30, 1889, <http://earlyradiohistory.us/1889thea.htm>.

<sup>30</sup> "News and Entertainment by Telephone," *United States Early Radio History*, accessed August 12, 2015, <http://earlyradiohistory.us/sec003.htm>.

<sup>31</sup> Arthur F. Colton, "The Telephone Newspaper--New Experiment in America," *Telephony*. Page 391-392, March 30, 1912, <http://earlyradiohistory.us/telenew3.htm>.

<sup>32</sup> "The Decades That Invented the Future, Part 1: 1900-1910," *Wired*, October 18, 2012, <http://www.wired.com/2012/10/12-decades-of-geek-part-1/>.

<sup>33</sup>"Columbia Used to Demonstrate Wireless Telephone," *The Music Trade Review*, Page 52, November 4, 1916, <http://earlyradiohistory.us/1916col.htm>.

neither licenses to deliver radio broadcasts nor consumer subscriptions to receive them. Essentially all transmission were “zero rated” by the network and content providers.

Ultimately radio broadcasting supplanted news over the telephone and phonograph supplanted music over the telephone, having more favorable economic and physical properties to deliver information more cost effectively. However the mobile phone, digital technologies, digital advertising, and related business models have evolved to disrupt the entertainment business. Now people stream music on their phones through Spotify, Deezer, Pandora, and other services. Those app companies could not offer their services for free if they did not have a third party advertiser or employ a differential price model in which premium users pay, thereby subsidizing free users. It is not logical that TRAI can allow differential pricing across the Internet, but not for Internet access.

TRAI's should be well acquainted with differential pricing from its history. There were any number of differential pricing arrangements for telephony, whether volume discounts, toll free numbers, wholesale and retail pricing, interconnection, and so on. The growing trend in the world is to sell mobile access with content, particularly branded content. Mobile telephony used to be about voice and SMS. Differential pricing was the norm. Now we are moving to a world of data. Prices need to evolve if we want to effect this change.

There is no reason to suggest that we have reached the end of innovation. Pricing and packaging themselves are forms of innovation. It is necessary that experiments are tried in India to allow the appropriate models to be developed. Consider the innovation of the sachet to market soap, shampoo, and detergent in small, competitively-priced amounts in India. “Sachet marketing” makes valuable products available and accessible to people on limited income. They will likely never buy the supersize box of detergent commonly sold in the US and Europe, but there is no reason why they should not have the benefit of clean hair and clothes.

To be sure, as people acquire more income, they will increase their consumption of soap in larger packages (notably when they purchase a large washing machine). The situation with telecommunications and Internet is similar. Users in the US and Europe buy supersize Internet packages because they have multiple Internet enabled devices including standalone computers, television, tablets, and smartphones. They consume large amounts of video which require heavy bandwidth. It is not necessary to require Indians to purchase supersize Internet packages to enjoy the benefits of the Internet. They can purchase sachet size packages of connectivity to get started and progress as needed. But regulating sachet provision of the Internet would undermine the ability of India's poor to enjoy the Internet today.

Banning the provision of a sachet-size Internet packages, whether 2-for-1 deals, zero rated subscriptions, or however they are marketed, is akin to requiring all Indian to purchase supersized boxes of detergent. It makes no sense from the perspective of economics or human welfare. The point is that differentiated pricing is nothing new. If allowed, India can spawn a variety of new innovations.

Let me address a few of the concerns raised by TRAI about differential pricing its consultation. TRAI notes,

*It may be argued that while these preferential tariffs offers effectively result in easy access to these websites etc., it may also result in making the entry of certain websites through the pipes of the TSPs more difficult. For example, a TSP or a group of TSPs could come up with such differentiated tariff offers wherein they disincentivize access to certain websites by putting higher tariffs for accessing them. In other words, accepting the principle that the TSPs should be able to provide differential and attractive tariff offers for different websites/content providers, whom they 'like', one is accepting the principle that service providers may also effectively prescribe nonattractive/prohibitive tariffs for some websites whom they may 'not like'. (paragraph 12)*

TRAI has tools in its toolbox to make an evidenced-based assessment and the authority to enforce the law. TRAI need not conjecture about what could happen. Instead it can look at the offers in the marketplace, apply the relevant tests related to tariffs (transparency, non-discrimination to subscribers, and whether the pricing is anti-competitive, predatory, ambiguous, or misleading), and make the determination. However TRAI cannot make a legitimate determination without facts. It needs to allow the pricing plans to occur in order to collect data.

TRAI also notes,

*On the other hand, several negative effects might ensue. Differential tariffs results in classification of subscribers based on the content they want to access (those who want to access non-participating content will be charged at a higher rate than those who want to access participating content). This may potentially go against the principle of non-discriminatory tariff. Secondly, differential tariffs arguably disadvantage small content providers who may not be able to participate in such schemes. Such providers may have difficulty in attracting users, if there exist substitutes for free. This may thus, create entry barriers and non-level playing field for these players stifling innovation. (paragraph 14)*

The operative word is “might”. TRAI is likely familiar with the concept of Type I and Type II errors in regulation. Type I, mistakenly prohibiting activity that pro-competitive, is more damaging than Type II, mistakenly allowing anti-competitive activity. It is very difficult for TRAI to estimate the costs and benefits of any activity without real world information. On the other hand, if TRAI collects real world data, it can make a more realistic and credible decision. If TRAI discovers a problematic tariff, it can address it, but it is unwise to set ex ante bans because of the real and established problem of Type I errors.

TRAI also suggests that a differential tariff disadvantages the small content provider, but my research on differential pricing around the world suggests the opposite. To be sure, both small and large content providers benefit from differential pricing, but small content providers even more so. Large content providers can already exploit economies of scale. As is established in the cable industry, much of the service price is composed of high fees demanded by large content providers

in exchange for the right to distribute content. Sports rights holders demand a premium because few will watch the World Cup a day after it's aired. Consider that the International Cricket Council has doubled its revenue for sale of television rights in the period 200-2015<sup>35</sup> from the preceding period.

It is precisely the small content provider that needs flexibility and price differentiation. If it is the case that a small provider is being denied market access because of an unfair or unreasonable price, then TRAI can certainly remedy it. But in the context of Internet access, there are no salient examples of small content providers being denied access to platforms because of differentiated prices. If anything, charging a too high price would mean that the TSP would get no revenue at all because the small content provider would not pay.

TRAI also observes,

*Theoretically this might entail providing certain content for free while making other content prohibitively expensive for subscribers to access. Allowing service providers to perform what effectively amounts to a gate keeping function might potentially empower TSPs to select certain content providers and disadvantage others, thereby adversely affecting public interest (paragraph 15).*

TRAI suggests a theoretical outcome. However TRAI needs to consider the equal and opposite possibility supported by the vast majority of all Internet experience and the overwhelming conclusion in the relevant academic literature<sup>36</sup> in that TSPs engage in a two-sided market such that they are incentivized to get both sides on board. Anything they do to limit either content on the one side, or users on the other, limits their profits. The amount of content that Internet users consume in total as well as per capita increase every year, and in general at a declining unit price.<sup>37</sup> This suggests that users are getting more, not less, content. As for the public interest, it would seem getting more users online faster is in the public interest.

TRAI notes,

*...TSPs may start promoting their own websites / apps/ services platforms by giving lower rates for accessing them. They may take advantage of owning the primary access of the consumer by offering better, unlimited connectivity, free or near free, when using their own service or service of their partner, while offering limited or capped connectivity at higher price when consumer accesses some other website/platform. This may be perceived to be an anticompetitive move that stifles innovation and competition, leaving absolute power in the hands of the TSPs (paragraph 17).*

For some real world evidence, TRAI can review the period around the 2000 when a number of the world's leading TSPs tried and failed famously with their walled garden strategies. It was a massive

---

<sup>35</sup> <http://www.espnricinfo.com/ci/content/story/271994.html>

<sup>36</sup> I am happy to provide a list of these references upon request.

<sup>37</sup> <http://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html>

waste of investors' money that no TSP would easily try again. It is not logical that TSPs would risk shareholder returns simply to promote content they like that their customers do not. This point that TSPs offer content that they want, not what consumers want, is facile and unfounded. Every decision an operator makes must face the test of market discipline. Consider: is the choice to rollout 4G that of the TSP or that of the market?

TSPs make content offers every day in an attempt to discover what their consumers want. Most offers fail in the marketplace. Consumers decide for themselves what they want. It is a dynamic process to which regulators need not control. The regulator only needs to ensure that rules of the TFO are followed.

Some important points should be made about vertical content and telecommunications arrangements that are made in South Korea and Japan. There are countries have chosen vertical integration of content and communication on purpose and for good reason. These countries are relatively small geographically and are linguistically homogenous. My research show that these countries have a higher rate of mobile application innovation even with the vertical integration. Moreover they, like the Nordic countries, have soft net neutrality rules in place, meaning that they manage net neutrality with inclusive participatory governance,<sup>38</sup> such as multi-stakeholder models. Soft net neutrality rules turn out to be better to support emergent content providers on mobile networks.<sup>39</sup>

The lesson for India is that it makes sense to allow TSPs and content providers to create partnerships to serve their distinct audiences. India is a highly diverse country with people of multiple languages, tastes, and interests. There is no one service or platform that does it all, nor should there be a single price for access. TRAI need not be fearful of diversity but embrace the dynamic, emergent forces which have worked to date.

TRAI notes the following,

*Analysis of the terms and conditions of certain offers launched in the market claiming free access to certain services shows that though there is no charge in accessing the platform itself, the moment a consumer clicks on any other link which directs him to a different website or clicks on the pictures or videos, applicable data usage charges is payable. In addition, if the smart phone has some application running in the background utilizing data, charges would be payable irrespective of the fact that the customer is using a free facility at the relevant time. Therefore, there is every chance of such consumers ending up paying for data usage. Since such 'free' facility is availed primarily by non-users of data, they would not have availed any data packs providing lesser effective usage charges. Tariffs for wireless data as per default tariffs are considerably higher (up to even 100 times higher) than the effective tariffs in data packs. The magnitude of price differential is huge and can have dangerous implications for users of such facilities which are claimed to be free, if not conveyed to the consumer transparently and effectively. (Paragraph 21)*

---

<sup>38</sup> For a review of the three types of legal instruments of net neutrality and the countries where they are used, see my referenced paper by Springer.

<sup>39</sup> See my research published by Springer as part of the Dynamic Coalition on Net Neutrality.

One can appreciate that a regulator would be concerned about a user being charged unnecessarily, but this particular scenario is not a reality. Whether an app runs in the background and whether one goes online are two different issues. If the app runs in the background, it is the decision of the app developer and the user, not the TSP. The user can turn off apps and change the phone's settings. Moreover whether an app is zero rated has nothing to do with an app running in the background. TSPs are not responsible for the development of third party apps nor do they control the setting that users enable on their phones.

## **2. If differential pricing for data usage is permitted, what measures should be adopted to ensure that the principles of nondiscrimination, transparency, affordable internet access, competition and market entry and innovation are addressed?**

Differential pricing has been a part of mobile tariffs from the beginning, so it is not logical or supportable that there should be categorical bans on entire classes of business models such as zero rating, sponsored data, and so on. TRAI can take a case by case approach to see that any offer meets tariff requirements. For example, does a particular offer fulfill the NTP goals, such as increasing adoption of the Internet or particular services such as health or e-government? Are offers available to all comers? Are the terms and conditions of any offer transparent? Do offers expand the subscriber base and the number and range of connected devices? That multiple TSPs making differential offers would be evidence of effective competition.

I would urge TRAI to investigate whether there are substantive consumer complaints about these offers. TRAI must thus distinguish between slick "clicktivist" campaigns versus a bona fide consumer complaint in which an individual has followed the necessary steps of redress. In my research, I have not found a record of genuine consumer complaint about differential pricing.

If TRAI has not done so already, it should implement a process to conduct Regulatory Impact Assessments (RIA) to test the efficacies of its regulation. RIAs are increasingly important because the cost of bad regulation to society is considerable. The OECD offers a helpful toolkit.<sup>41</sup> There are some preliminary questions as well as a battery of assessment tools to determine how and whether intervention is needed.

## **3. Are there alternative methods/technologies/business models, other than differentiated tariff plans, available to achieve the objective of providing free internet access to the consumers? If yes, please suggest/describe these methods/technologies/business models. Also, describe the potential benefits and disadvantages associated with such methods/technologies/business models?**

TRAI mentions some alternative methods such as free access to unspecified content as well as coupons, direct money transfers or rebates from content providers. There is nothing wrong with a diversity of approaches, but TRAI should not favor one or another either by requiring one

---

<sup>41</sup> <http://www.oecd.org/gov/regulatory-policy/44789472.pdf>

approach or outlawing another. A dynamic marketplace will experiment with these and other approaches. The role for TRAI is to allow experimentation and then to assess whether there is harm to consumers or competition.

#### **4. Is there any other issue that should be considered in the present consultation on differential pricing for data services?**

##### **The Good Telecom Regulator**

The good telecom regulator has three key aspects of institutional design

1. Structural Independence to reduce political or industrial capture
2. Financial Independence to ensure the agency's funding is not dependent on political or private influence
3. Functional Competence in that the agency delivers consistent, timely and accountable regulations as well as procedures that ensure transparency of the regulatory process.

Without these things, the regulator does not have the necessary credibility for participation in the sector. Thus the telecom regulator is expressly chartered and designed to be *above politics*.

That India is so animated by the American experience is understandable. The two countries have many affinities and relationships. The activism afoot in India is a form of coordinated and sophisticated transnational activism<sup>42</sup> with many of its leaders based in the US. SavetheInternet.in is a white label campaign from Free Press, an advocacy group in the US that has long been funded by US foundations and corporate interests with a particular regulatory end game in the US.<sup>43</sup> The same campaign is copy-pasted by advocates in other countries.<sup>44</sup> This endgame may or may not be in India's interests, but TRAI should proceed with its consultation by looking at the facts. To be sure, public comment is a necessary and valuable input to regulatory assessment, but it should not have excessive influence.

##### **Key points from my research on differential pricing**

Nearly every good and service on the market today is a subject to differential pricing. This is necessary to make goods and services available to poor and disadvantaged populations. This has been recognized by America's Federal Trade Commission for its analysis of loss leaders products in supermarkets and by the UK Department for International Development for the pricing of medicine, as essential public good, the consumption of which has spillover benefits to society. Similarly Internet access has many properties of a public good, and it follows that offering it on a discounted basis to people of low-income is a vital strategy to promote Internet adoption and connectivity.

For more than a century telecommunications has been priced flexibly to encourage wide adoption. In more recent history, mobile operators have used "zero rating", a practice in which

---

<sup>42</sup> Tarrow, Sydney. *The New Transnational Activism*. Cambridge University Press, 2005.

<http://www.amazon.com/Transnational-Activism-Cambridge-Contentious-Politics/dp/0521616778>

<sup>43</sup> <http://watchdog.org/187392/ford-foundation/>

<sup>44</sup> <http://www.savetheinternet.com/sti-home> is presented with a banner "Presented by Free Press". See also <https://www.savetheinternet.eu/> for Europe.

certain data does not count against a mobile plan. About half of the world's operators have used zero rating for more than a decade, and it has been helpful to increase internet adoption particularly in developing countries.

Facebook's Free Basics, which offers users free access for essential services in developing countries has encouraged millions to get online without any charge for data. Facebook reports that about half of Free Basics' users become Internet adopters in 30 days as a result of the program.<sup>52</sup> Facebook has suffered an undeserved backlash from net neutrality advocates who capriciously conflate principles of Internet openness with anything that does not meet their unrealistic and undesirable standard. It would seem that Internet activists would support efforts from mobile operators and Internet companies to facilitate people of low-income to get online, particularly those in developing countries. Such programs should be celebrated by activists as valuable demonstrations of corporate social responsibility.

My paper on zero rating is one of the few empirical investigations to test the assertions that zero rating practices are harmful. In general zero rating is used by small and entrant mobile operators as a way to differentiate from incumbents. The entities that take advantage of zero rating tend to be small and emerging content providers and applications. But even in cases where established services such as WhatsApp and Instagram enjoy zero rating, I do not find that they do not crowd out competing services. In fact even where WhatsApp is zero rated, those countries enjoy a multitude of messaging apps.

The amount of zero rating activity is less than 1% of all contracts and traffic in the markets studied. Thus the impact of zero rating is negligible but not negative. My research finds the opposite to advocates' claims; it turns out that bans on zero rating harm competition and consumers. However bans negatively and disproportionately impacted smaller telecom providers and their customers.

The research was set up to test the purported harms as suggested by critics of zero rating

- The operator that offers zero rating will win market share.
- The zero rated service will win market share.
- The presence of zero rating will preclude the emergence of new applications and services.
- Users don't go to non-zero rated content. If Facebook is free, they don't venture beyond it.
- Operators that zero rate their own content foreclose other content.

I looked at countries with hard net neutrality rules that imposed bans on zero rating: Chile, Netherlands, and Slovenia. In Chile and Slovenia, there was no record of consumer complaints about zero rating. Bans were implemented as the result of a single complaint by a net neutrality activist organization. In Netherlands the ban was implemented to effect a policy desired by the Ministry of Economic Affairs, not the telecom regulator.

There are a number of compelling studies and reasons to allow differential pricing including

---

<sup>52</sup> <https://developers.facebook.com/docs/internet-org>



- Differential pricing strategies are important to achieve social/public goods, for example how differentiated prices are used to provide medicines, an key input for public health (Yadav 2010)
- Users prefer to select mobile subscriptions on a range of parameters, not just speed and price (Fortunati & Tipale 2014; Postrel 2004).
- Programs such as Free Basics increases the number of users on network and has the double benefit of fostering content consumers and creators (Eisenach 2015)
- Differentiated pricing strategies common amongst Internet OTT services including the loss leader (FTC) and freemium (Lukin). It is illogical and inconsistent not to allow it for mobile internet services.
- Differentiated pricing is used particularly by entrant TSPs and service based competitors such as MNVOs.
- Economist William Baumol discussed how price differentiation is used to recover fixed costs. But he notes that price differentiation is common in markets both with high and low barriers to entry. Markets are so competitive that it is impossible for operators to enter without it (2005).
- My research shows that TSPs don't use price differentiation because they want to, *but because they have to*. Prices in the mobile market are already so low. TSPs cannot offer lower prices or they will not cover costs. As such the only way they can attract customers is to make differentiated offers for content.
- The freemium<sup>53</sup> model is widely practiced in digital industries. This consists of a free digital offer for software, media, games, or other service, but a charge or premium charged for special features, increased functionality, or virtual goods. LinkedIn, Amazon, online newspapers, and countless other companies offer freemiums. It is not logical that such companies should be allowed to offer for free—or zero rate<sup>54</sup>—certain aspects of their service to stimulate adoption and yet TSPs cannot. Regulators may enter some legal challenges by doing so.

Another reason not to enact proactive bans on price differentiation is that they may constitute violations of free speech and enterprise. Court cases on this very topic are playing out in the US and Europe. They underline the important point that the ability to make an offer in the market—to provide a differential price—is a form of free speech.

Getting people online as quickly as possible facilitates their human rights, and reducing the rate of adoption by insisting on “perfect” access actually delays people’s enjoyment of human rights. Moreover requiring that people buy only one kind of mobile package—or constraining the parameters on which mobile service can be offered—rather than tailoring packages to consumers’ wants, needs and budget, has the perverse effect of making the poor subsidize the rich. In the countries where zero rating is banned, the lowest price offer disappears in the market, hurting those who have never tried the Internet and those with the least willingness and ability to pay.

<sup>53</sup> Lukin, Jarid, “Jarid Lukin (@jblukin) | Twitter,” November 7, 2014, <https://twitter.com/jblukin>.

<sup>54</sup> Michael Katz, comments: “Should Wireless Technologies Be Regulated Differently?,” ISOC-DC TV - Live Events, (October 15, 2014), <http://www.isoc-dc.org/isoc-dc-tv/>.

### Tapping price as a form of innovation

I experienced India's power in Information Technology firsthand as an employee of Tata Consultancy Services (TCS), including the company's immigration and deputation process that at the time, hired 100 people per day. Prior to joining TCS, I studied the concept of cost competition and radical innovation as a differentiator for emerging countries in business school. Competing on price is essential as a means to get the attention of first world customers, but once established, emerging country competitors invest the revenue they earn back into their business and fundamentally innovate their enterprise. Companies initially chose TCS because of its competitive price, but now they choose it because of the quality.

When I was employed at Tata, the company had 18 R&D centers. The lab where I worked in Hyderabad leveraged the brain power of top Indian PhDs in a number of important technical areas including IT development, bioinformatics, security, quantitative finance and other disruptive technologies. It might be observed that TCS capability of advanced technology was developed and offered in part through "zero rating" of a type; essentially other business lines funded the initial investment. However over time advanced technology created new products and services that created revenue. So the symbiotic process helped the company overall. The same dynamic is pursued by TSPs today. Again, it is not logical or supportable that every other industry in India is allowed to operate within a plane of real world economics, but telecom is not.

Simply put, India has used radical innovation to leapfrog into the future. It is a testament to the country that in just 1-2 generations, India's IT companies could leverage the country's considerable human capital into an industry that today drives almost one-tenth of the Indian economy. As described before with entrepreneurship in "sachet marketing", India needs to embrace similar innovation with Internet pricing. My colleague Dan Lyons describes it well in an important paper, *Innovation in Mobile Broadband Pricing*.<sup>55</sup>

*Requiring standardization of a product—as net neutrality does—removes an important plane upon which firms can compete, and actually gives an advantage to large incumbent players against newcomers who are looking for ways to distinguish themselves. Mandating that services providers offer all users access to all online content is costly. This model does not serve the needs of consumers who may not want or need broadband that supports heavy-bandwidth activities such as online gaming and video streaming.*

Beyond the basic goals of supporting a competitive market for telecommunications and the removal of barriers to new TSPs, innovations in mobile pricing can do the following

- Expand the number of Indians, particularly of low income, to access the Internet
- Lower the cost of Internet access
- Increase consumer choice in types, modes and means of Internet access
- Drive adoption of Indian-made Internet goods and services
- Drive adoption of e-government in India
- Educate and inspire Indian entrepreneurs to develop their own platforms and services

---

<sup>55</sup> <http://mercatus.org/publication/innovations-mobile-broadband-pricing>

- Expand the market for devices, increasing both adoption and device diversification.

### **Differential Pricing and the TTO today**

As discussed, TRAI has succeeded to create a competitive market for mobile communications in India by increasing the number of networks, providers, and technologies. As a consequence, prices have fallen, the number of subscribers has increased, and the number of devices enabled has expanded. TSPs differentiated on price and bundles in the past and many benefits results for consumers and content providers; if TRAI allows, this can continue in the future. As we move away from a world of voice and SMS to a world of data, it is logical and fitting that TSPs will offer differentiated data and content bundles. If they did not, there would be something wrong.

But strangely regulators who are tasked fostering competition are simultaneously restricting the parameters by which TSPs can compete. The net neutrality activists' charge that operators should only differentiate on the basis of speed and quantity of data are unwittingly and perversely support incumbent TSPs with large networks. Moreover they are denying consumers the choice to select their own offers and to purchase from a market with multiple players. This action appears to contravene the TTO. That Indian TSPs are offering content bundles should be embraced, not discouraged by the regulator.

### **Lessons from the US and Denmark**

This situation in India today has played out in many countries. I describe the experience in Chile, Netherlands, and Slovenia the attached paper, and the lessons from the US and Denmark are recounted here. They are instructive for India as its TSPs begin to introduce 4G networks.

In the US, the first TSP to offer a 4G data plan was not Verizon or AT&T but MetroPCS. MetroPCS had only 10-20 MHz of spectrum capacity and focused on a budget-conscious market segment with a set of pre-paid, no contract, "all you can eat" offerings. In 2010 it was the 5th largest operator in the US with only 3 percent market share.

The company provided 2.5G service on a CDMA network, and it realized that going forward, GSM would become the global standard. It would not be economical to evolve to WCDMA 3G, so it decided to leapfrog directly to 4G/LTE. In any case, it knew that many of its budget-minded customers would not take a full-priced 4G data plan at \$60/month so it needed a way to serve that market segment.

MetroPCS observed that its customers preferred YouTube almost entirely over any other video provider. Without any money changing hands, MetroPCS engineers worked with YouTube to develop an optimal format for the video service under the spectrum constraints.<sup>58</sup> According to MetroPCS, the offer to optimize the video streams was made available to other content providers, but none were interested. Thus an offer of unlimited talk, text, Web browsing, and YouTube for \$40 was presented. In 2011, a group of advocacy organizations led by Free Press complained to the FCC that the plan violated net net neutrality.<sup>59</sup>

<sup>58</sup> <http://assets.fiercemarkets.net/public/mdano/metropcsresponse.pdf>

<sup>59</sup> [http://www.freepress.net/sites/default/files/resources/MetroPCS\\_Letter\\_1\\_10\\_11.pdf](http://www.freepress.net/sites/default/files/resources/MetroPCS_Letter_1_10_11.pdf)

MetroPCS duly responded to the FCC<sup>60</sup> and ultimately sued the regulator because its net neutrality rules would effectively put it out of business. In 2014 the FCC's net neutrality rules, all but the transparency provision, were struck down. Thus ill-informed regulation is counter-productive to the regulator's goals. Moreover such decisions can bring costly legal challenges to regulators.

Importantly the current FCC has taken a case by case approach with differential pricing. In fact FCC Chairman Tom Wheeler called the recent T-Mobile zero-rated mobile video program Binge On as "highly innovative and highly competitive."<sup>61</sup> Unsurprisingly and once again, it was advocacy Free Press that complained to the regulator about the program<sup>62</sup>, not consumers, who love it. T-Mobile reported adding more than 8 million net new customers in 2015,<sup>63</sup> an impressive result in a mature market such as the US. Moreover this market-based mechanism supports the regulator's goals of supporting market entry, reducing incumbents' market power, and making access more competitive through differential pricing.

In the case of Denmark, all four mobile network TSPs offer content with a differential prices and bundles. Music offers have been in place since 2008. There have been no complaints to the regulator, and the regulator has not found it problematic. Incumbent TDC introduced a proprietary service called Play in which the TSP contracts directly with music producers. All TDC customers get the music offering without additional charge. Telenor partners with TIDAL, noted for offering high fidelity music streaming. When streaming services compete on price, TIDAL attempts to offer sound quality as a differentiator, a valuable market development. This shows that differential pricing can also create new categories and parameters for competition and customer choice. HI3G offers Deezer. Telia has long worked with Spotify.

Spotify, a Swedish company, is one of the few non-American mobile apps which has global significance. As it turns out, the conversion rate of free users to paying users on the Spotify platform is small. But offering premium versions of its service in a location where users need not add new payment details, in the context of their mobile contract, Spotify can increase its conversion rate significantly. Spotify also avoids the billing costs by having the operator take on this function. Thus it's a win for the TSP, Spotify, subscribers, and musicians. Spotify has been instrumental to reduce music piracy, so partnerships can also deter the criminalizing of users for stealing music.<sup>64</sup> To be sure, premium versions of Spotify are still available on its website for the same price as that offered with telecom providers.

Denmark has been a pioneer in the mobile industry for years, and even with ubiquitous fixed line broadband, about one-tenth of Danes use mobile only for broadband.<sup>65</sup> Denmark recently unseated South Korea to be named the world's top digital nation by the ITU.<sup>66</sup> Denmark is the

---

<sup>60</sup> <http://assets.fiercemarkets.net/public/mdano/metropcsresponse.pdf>

<sup>61</sup> <http://www.multichannel.com/news/fcc/wheeler-binge-pro-competitive-pro-innovation/395474>

<sup>62</sup> <http://www.dailydot.com/politics/t-mobile-binge-on-net-neutrality-streaming-plan-zero-rating/>

<sup>63</sup> [http://www.phonearena.com/news/T-Mobile-says-that-it-added-more-than-8-million-net-new-customers-in-2015\\_id77203](http://www.phonearena.com/news/T-Mobile-says-that-it-added-more-than-8-million-net-new-customers-in-2015_id77203)

<sup>64</sup> <https://press.spotify.com/uk/2013/07/17/adventures-in-netherlands/>

<sup>65</sup> <https://erhvervsstyrelsen.dk/>

<sup>66</sup> [https://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2014/MIS2014\\_without\\_Annex\\_4.pdf](https://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2014/MIS2014_without_Annex_4.pdf)

country where the Mobile Virtual Network Operator (MVNO) was born and is considered to have some of the lowest prices for mobile services in the developed world.

Telmore was founded 2000 as an MVNO and was subsequently sold to Danish incumbent TDC, which has maintained Telmore as an independent sub-brand with 700,000 customers. In a country of 5.7 million people, Telmore has a market share of around 11%. The Telmore launch will undoubtedly eat into TDC's lucrative pay TV business which consists of a IPTV and cable. In any case, TDC knows that if they don't cannibalize themselves, their competitors will.

In 2014 Telmore launched a competitive flat rate content package for €33 (including the 25% VAT) which offers unlimited voice, SMS, MMS and 5GB of data traffic via TDC's 4G network. On top of that, customers get a content package of 12 premium services: music, TV, movies, books, magazines and newspapers. The traffic cost is €22 and the content, a €127 value, is €11. The premium services include Telmore Music (music streaming), Mofibo (ebooks), online newspapers (including Ekstra Bladet and Politiken), magazines (including the publishing conglomerate Egmont's titles Euroman, Eurowoman, food magazine Gastro, and home decor Rum). In addition, there are four premium video options: HBO Nordic, TV2 Play, CMore, and MinBio. The services can be consumed on phone, tablet or TV.

This package is also indicative of the serious attempts by content providers HBO Nordic, TV2 Denmark, CMore and Egmont to compete with Netflix in the streaming film and TV market. Netflix has been successful in attracting customers (their exclusive English-language TV shows are popular in Denmark), but their range of new films is limited. CMore owns many of the rights to the latest movies. Not only is Telmore creating competition for Netflix by bundling four Danish streaming services, but it also creates competition for other mobile operators.

While consumers will love Telmore's offer of a great value with a low price, net neutrality advocates will likely call it discriminatory. Indeed they don't like the idea of TSPs offering content. They say it distorts the picture for consumers who should only be allowed to purchase connectivity based on the commodity of data transport cost. However, Telmore has the ability to buy content in bulk which it offers to its customers at a lower price, essentially at a 90% discount.

By not allowing bundling, net neutrality and so-called consumer advocates insist that consumers pay more. They argue that the benefits of unbundled content is greater than the benefit of having a value priced bundle. However when a consumer can get a package of premium content and connectivity for €33/month, it's hardly worth the time to select individual vendors for each of these services. This is the essence of a firm: it exists to lower transactions costs, and to that extent, it saves time for consumers, not to mention offering a greater value in a bundle than the sum of its individual parts.

Another important point about the deal is that it creates competition. It might be described as upstarts and the "little guys" in the Danish market finding a way to take on the powerful global players such as Netflix and Google. Especially important for the online newspaper and magazine companies, the deal offers them an important way to earn revenue as their traditional business models have been crushed by Google.

That Indian TSPs and content providers create similar partnerships and offer data services with differentiated prices is only fitting.

#### Preliminary Research on Free Basics

There has been much debate a particular offering in India called Free Basics by Facebook. My colleagues and I are researching this service and other zero rated programs. We are in a race against time and activists to collect information, assess the impact, publish our studies, and critique the methodology and results with peers. I have documented that regulators in a number of countries have implemented bans on zero rating without even conducting regulatory impact assessments to determine whether there is harm to consumers or competition. It is very troubling from the perspective of good regulatory practice and due process. The anti-intellectual environment to pronounce services discriminatory without investigation is reminiscent of the Inquisition which punished Galileo for challenging orthodoxy with his empirical study of the solar system.

While there are many apparent benefits to Free Basics, I see one above all that is important to India. Just like any innovation, the project needs to be tried so that Indian entrepreneurs can learn and launch their own platforms and services. Ideally Indian entrepreneurs will develop killer apps for the Internet for Indians, like sachets for soap. If India can export its digital innovation, following its successful outsourcing model, so much the better. But TRAI will disadvantage the country if it limits the parameters on which market actors can partner and transact.

Free Basics demonstrates the concept of complementary assets that is essential to innovation. When thinking about Internet innovation, David Teece's 1986 paper "Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy"<sup>68</sup> is a touchstone. Teece observed that most innovations are not products themselves. They have to be combined with complementary assets before they can be marketable products. Such partnerships lower barriers to entry for the innovator and can provide rewards to an innovator upfront.

Teece discusses a number of assets that must be in place before an innovation can take root. They include marketing, specialized manufacturing, and/or after-sales support. He distinguishes the assets into generic, specialized, and co-specialized categories. In the context of the Internet, HTML may be a generic asset, a language that allows innovators to create websites. Just as a factory is needed to make shoes, a mobile application needs a network. Thus a specialized asset may be an operating system that runs on a mobile phone, such as Apple iOS or Android. A co-specialized asset may be a 4G mobile network and an Apple iPhone 6S, its complementary asset. The iPhone features can't be realized unless they are delivered on the appropriate 4G mobile network.

Teece says that different parties have to make partnerships or "join complementary assets" (e.g. content provider and broadband provider) in order to make applications known. Applications on

---

<sup>68</sup> David Teece, "Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing and Public Policy," *School of Business Administration, University of California, Berkeley, CA 94720, U.S.A.*, June 1986, [http://www4.lu.se/upload/CIRCLE/INN005/Teece\\_Reflections.pdf](http://www4.lu.se/upload/CIRCLE/INN005/Teece_Reflections.pdf).

their own have no value, or will almost never be found, unless they are joined with their complementary asset.

Marketing is a type of complementary asset, but Internet marketing can be extremely costly and cumbersome, especially for startups. Moreover essential public services for health, employment, transportation don't have budget for Internet marketing. Facebook being a global and recognized platform can offer Indian startups this advantage. In fact, the services included in Free Basics get far more than Facebook. I hypothesize that the word of mouth alone which local apps receive from being part of Free Basics will make them destinations in themselves.

In fact Facebook bears most of risk in the transaction for Free Basics. The company's advertising models for India is far from established; and Free Basics is major gamble for the company. There is no way Free Basics would survive if users did not believe it to be beneficial. Regulators will miss an important learning opportunity if they ban Free Basics. Moreover, if after the proper investigation, it turns out that Free Basics is harmful, it's relatively easy to stop: Just tell operators to cease and desist the program.

However, it is not possible to regain the lost opportunity for innovation if Free Basics cannot be tried. Thus regulators need to be on guard to avoid the most common pitfall, prohibiting procompetitive conduct that can benefit consumers and innovation, the Type I regulatory error.

Emerging services in India have limited resources to market and distribute themselves to users. Free Basics does three essential things to help local applications and services be known

1. Provide a set of technical standards that optimize the delivery of local apps on feature phones that run on low bandwidth networks.
2. Reduce, if not eliminate, marketing and promotion costs for local app providers
3. Reduce, if not eliminate, transaction costs of local app providers with TSPs.

Key criticisms against Free Basics are that users will mistake Facebook for the Internet itself and that the provision of free Facebook will somehow crowd out other services. First of all, my own data of zero-rated services shows that these things don't happen, but more to the point: There is nothing to stop Indian developers from making their own platforms. Indeed if there ever was a country which had engineers and computer scientists to develop Internet platforms, it is India. Perhaps the single best argument to allow Free Basics is that it will stimulate competition in Internet platforms and mobile innovation made in India.

Consider the the exclusive arrangement between AT&T and Apple to launch the iPhone in 2007, obliging users to some extent to Apple's walled garden. The partnership succeeded to introduce the concept of the smartphone to users, gather critical mass for advanced wireless services, and provide a catalyst to mobile wireless innovation in devices, content, and applications. The world is better off because this partnership took place.

From my understanding of telecom regulation, Free Basics meets the requirements of the TTO.

The TTO describes non-discrimination as, “No service provider shall, in any manner, discriminate between subscribers of the same class and such classification of subscribers shall not be arbitrary” (TTO Section IV Transparency and Consumer Protection). More generally the principle of non-discrimination of subscribers means that the offer is available to all comers. To my understanding, Free Basics is available to any subscriber where the platform is enabled by the TSP, as well as any service that would like to be on the platform as long as the service meets the program’s technical guidelines, which apply equally to all services. As such, the platform is agnostic to services. There is nothing exclusive about the Free Basics platform; any app provider can join, and any operator can participate. Moreover Facebook does not pay the operator to offer Free Basics, and the program is free for all users and content providers.

Transparency in telecommunications refers to services that are delivered without change to the end user. Should any changes be made, they are disclosed and do not alter the intention or meaning of any information. The TTO describes Transparency in pricing under Terms and Conditions as

*Service providers shall clearly indicate the terms and conditions of the provision of telecommunication services to subscribers which shall not in any manner be inconsistent with the provisions of this Order. Such terms and conditions shall inter-alia include the following:*

- a. Terms and conditions under which such services may be obtained, utilised and terminated;*
- b. Terms and conditions relating to the use of service, billing, repair, fault rectification and the like;*
- c. choice of tariff packages available to a subscriber and the procedure available for revising the choice along with the conditions thereof.*

In general transparency in pricing refers to the ability of price to be known to the various actors in a marketplace. In the case of Free Basics, there is not a fee to participate for users, TSPs, or applications.

A tariff that is anti-competitive would be one that runs afoul of India’s antitrust laws and/or stifles or suppress competition among TSPs. It appears that Free Basics does not violate antitrust laws, as far as I know, and if anything, as evidenced by the various tariffs, TSPs are competing with a variety of differential prices on data services to win customers. As such, the presence of Free Basics appears to be pro-competitive.

A predatory price is one that set so low so that it drives other competitors out of the market or prohibits TSPs from entering the market. As any TSP can partner with Facebook for Free Basics, there is no way for any one firm to win a predatory advantage. Free Basics could actually support market entry. For example, an entrant TSP could leverage Free Basics as a ready-made marketing and customer acquisition plan. Marketing and customer acquisition is perhaps the single highest cost for a TSP, comprising up to a quarter of a TSP’s revenue.



Marketing is also a significant cost for app and content providers. Facebook a well-known global brand can significantly lower those costs. Otherwise startups must expend precious resources in advertising.

An ambiguous or misleading price is one that is unclear, uncertain, or one that is not easy to be understood, or easily misinterpreted. In telecommunication, this would be a case where a subscriber could not easily discern the terms and conditions of the offer. A problem could be that receiving a certain benefit required the purchase of separate item or service (bundling, tying) which is not disclosed. Another problem would be the advertisement of one price in one place but at the point of sale, the consumer gets another. A price could be misleading if the intent is to deceive the subscriber with disclosures that are difficult or time-consuming to understand. Another issue may be auto-renewal; consumers may like this feature for its convenience, but many operators disable it to ensure that customers conscientiously pay for their mobile service.

It appears that Free Basics is offered in such a way to avoid any ambiguity or confusion. Subscribers need not even purchase a data plan and can free access the platform even if they have a zero balance.

Thank you for considering my comments for this consultation. My research on differential pricing follows, and a copy of my paper on zero rating is attached.

## My research differential pricing

### Dynamic Coalition on Net Neutrality

Report 2 Network Neutrality : An Ongoing Regulatory Debate

*Net Neutrality Regulation and Broadband Infrastructure Investment: How to Make an Empirical Assessment* p. 82

<https://docs.google.com/file/d/0B4CMvTONORh9RHhKa2lybThhR0U/edit?pref=2&pli=1>

Report 3 Net Neutrality Compendium

Test of the FCC's Virtuous Circle: Preliminary Results for Edge Provider Innovation and BIAS  
Provider Investment by Country with Hard Versus Soft Rules

<http://www.springer.com/us/book/9783319264240>

***Zero Rating: Do Hard Rules Protect or Harm Consumers and Competition? Evidence from Chile, Netherlands and Slovenia***, August 2015. Co-authored with Silvia Elaluf-Calderwood, London School of Economics

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2587542](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587542)

**FHI360, Webinar and Presentation on zero rating, September 24, 2015, Washington, DC**

<https://mstar.adobeconnect.com/p5lqqr30dt5/>

**Telecommunication Policy Research Conference, September 26, 2015, Arlington, VA  
Presentation**

<http://roslynlayton.com/zero-rating-help-hurt-consumers-competition-evidence-chile-netherlands-slovenia/>

**Submission to Indian Regulatory Authority, TRAI, April 2015**

<http://roslynlayton.com/wp-content/uploads/2015/04/Layton-Elaluf-Submission-to-TRAI-OTT-Consultation-24-Apr-2015.pdf>

<http://roslynlayton.com/message-to-india-on-zero-rating-dont-ban-what-you-dont-understand/>

**Internet Governance Forum, November 9-13, 2015 Brazil**

My co-author Silvia Elaluf-Calderwood attended 4 events and provided the academic perspective on zero rating, using our paper

Plenary Session on zero rating

<https://www.youtube.com/watch?v=OmyIoVASos0> <http://www.intgovforum.org/cms/187-igf-2015/transcripts-igf-2015/2457->

<http://www.intgovforum.org/cms/10thIGFChairsSummary13novFINAL.pdf>

IGF 2015 DAY 2 WK 4 WS 156 Zero rating and neutrality policies in developing countries

<https://www.youtube.com/watch?v=APTRcUon7qQ>

IGF 2015 Day 4 - WK 8 - WS 79 Zero Rating, Open Internet and Freedom of Expression

<https://www.youtube.com/watch?v=EKIzecmhHOA>

Participated in ACCESS workshop on Tuesday 9 am to 12m – gave a presentation on Zero-Rating

Participate in panel IGF – WS 207 Economics of Global Internet Deployment

<https://www.youtube.com/watch?v=cX0JCK-U4us&feature=youtu.be>

**CAIDA Sixth Workshop on Internet Economics, December 16-17, 2015, San Diego, CA**

<http://www.caida.org/workshops/wie/1512/>

Presented paper on zero rating

### **Articles in the media**

Is the Internet a Human Right?

Zero Rating: Who Bears the Cost of Bans

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

2015's 100 billion question: What drives the mobile app economy?

Response to the Norwegian Regulator on Zero Rating

AT&T's Sponsored Data is Nothing New. Here's What Americans Need to Know

# **ZERO**RATING

**Do hard rules protect or harm  
consumers and competition? Evidence  
from Chile, Netherlands and Slovenia**

**ROSLYN LAYTON**

**Center for Communication Media  
and Information Technologies**

**AALBORG UNIVERSITY**  
Copenhagen, Denmark

**SILVIA ELALUF CALDERWOOD**

**LONDON SCHOOL OF ECONOMICS**  
London, United Kingdom

**AUGUST 15, 2015**

# INTRODUCTION

Zero rating, the practice of not charging data to a mobile broadband subscriber's contract, is emerging a potent issue in telecom policy. The zero rating of mobile subscriptions has been extant for almost two decades with SMS, MMS, Blackberry Messenger, and WAP services<sup>1</sup> and with smartphone subscriptions for almost a decade with little to no controversy.

Zero rating has become increasingly popular in both developed and developing countries and plays a particularly important role in developing countries, where the costs of mobile data services are higher relative to per capita incomes. About half of all mobile operators employ the strategy in some way.<sup>2</sup> In fact network operators have used the equivalent of such strategies to incentivize both subscribers and content providers to be part of their network for well over a century.

In the last two years, however, zero rating become a flashpoint in the net neutrality debate.<sup>3</sup> Whether a country allows it has become a litmus test for net neutrality supporters to certify the strength of the rules. At issue is whether operators and their customers should have the freedom to create contracts for mobile broadband service based on their preferences and constraints or whether mobile Internet service must be sold in a so-called "neutral" fashion where the only differentiating parameters are speed and megabytes. As the Internet increasingly transitions to mobile platforms, and the likelihood that the next two third of world who yet to come online will do so via mobile, who and how to provision mobile bandwidth has is an important, complex issue.

This paper examines the arguments for and against zero rating and the charges that zero rating hurts competition and consumers. It formulates 5 assertions based on the alleged harms and attempts to test them with empirical analysis from quantitative and qualitative perspectives. The paper reviews the leading database of financial information of the world's mobile operators to see whether the impact of zero rating may be observed, for example with undue financial benefits earned by operators through the use of zero rating. To understand the issue more closely, the paper reviews zero rating in Chile, Netherlands, and Slovenia, countries which have banned some forms of the practice. The paper then examines whether there is harm to consumers and innovation by reviewing a leading database of mobile application market data. The paper concludes by suggesting reasons why zero rating is maligned in telecom policy debates.

---

<sup>1</sup> "Zero Rated WAP Traffic," *Geekzone*, September 6, 2005, <http://www.geekzone.co.nz/forums.asp?topicid=4895>.

<sup>2</sup> Anne Morris, "Report: 45% of Operators Now Offer at Least One Zero-Rated App," *FierceWirelessEurope*, July 15, 2014, <http://www.fiercewireless.com/europe/story/report-45-operators-now-offer-least-one-zero-rated-app/2014-07-15>.

<sup>3</sup> John Carbone, "Zero-Rating The Internet, or Why You Should 'Unlike' Facebook: A Partnership of a Different Color.," *Medium*, October 2, 2013, [https://medium.com/@john\\_carbone/zero-rating-the-internet-or-why-you-should-unlike-facebook-ae9f7ec13faa](https://medium.com/@john_carbone/zero-rating-the-internet-or-why-you-should-unlike-facebook-ae9f7ec13faa).

## Arguments against zero rating

A recent white paper by net neutrality advocacy organization Public Knowledge provides an overview of the arguments against zero rating.<sup>4</sup> It argues that zero rating violates net neutrality, the principle that all data must be treated equally, and given that zero rating is not a neutral practice, it must be banned. In its place, they assert that only “Affordable Full Access” is acceptable. They claim as well that a zero rated offer is the operator’s, not users, choice, and therefore zero rating is discriminatory and wrong. They declare that zero rating limits a user’s choice, and that he will only choose zero rated services. They observe that zero rating limits innovation of third party applications and services.

Their opposition to zero rating might also be understood in relation to their advocacy against data caps. Public Knowledge explains,

Zero-rating and data caps may lead to a backslide into the world of scarcity. Data caps have been used as limitations on content usage and designed to create artificial scarcity. This type of scarcity is harmful because of its affect on a user’s behavior, specifically regarding users’ fear of going over their caps. Playing on users’ fears of exceeding their data caps makes cap-exempt regimes more attractive which incentivizes the content providers to pay for prioritization. The potential for data cap abuse in discriminatory ways may outweigh any purported benefit.<sup>5</sup>

A related advocacy paper calls on the Federal Communications Commission to outlaw data caps as part of its new Open Internet Rules.<sup>6</sup>

Though no money changes hands in the bulk of zero rating offers, detractors are concerned about “pay to play” situations, in which they claim startups can’t get Internet access, but we have not been able to find such a case. A type of zero rating is called sponsored data in which a content provider subsidizes the cost of a user’s subscription. A key application for sponsored data is health care education and delivery. A health provider wants to ensure that low-income pregnant women watch a series of pre-natal videos, a preventative form of health care that improves infant and mother outcomes. Similarly the health care provider is willing to subsidize the entire mobile subscription to encourage adoption of preventative health care and monitoring tools. The cost of avoiding an adverse health event is well worth the price of a broadband. The patient benefits with better health outcome and the health care provider reduces costs.

Another concern is that zero rated programs such as Facebook’s Internet.org will create parallel Internets and users will never venture outside of the social network. This situation is examined in the country case studies.

It should be noted that not all net neutrality supporters believe zero rating to be problematic,<sup>7</sup> however the issue appears to be a growing schism between those who favor soft and hard approaches.

---

<sup>4</sup> Carolina Rossini and Taylor Moore, “Exploring Zero-Rating Challenges: Views From Five Countries” (Public Knowledge, July 2015), <https://www.publicknowledge.org/documents/exploring-zero-rating-challenges-views-from-five-countries>.

<sup>5</sup> Ibid

<sup>6</sup> Danielle Kehl and Patrick Lucey, “Artificial Scarcity - How Data Caps Harm Consumers and Innovation” (New America, 2015), [https://static.newamerica.org/attachments/3556--129/DataCaps\\_Layout\\_Final.b37f2b8fae30416fac951dbadb20d85d.pdf](https://static.newamerica.org/attachments/3556--129/DataCaps_Layout_Final.b37f2b8fae30416fac951dbadb20d85d.pdf).

<sup>7</sup> Mike Godwin, “What the ‘Zero Rating’ Debate Reveals About Net Neutrality,” *Reason.com*, April 8, 2015, <http://social.reason.com/archives/2015/04/08/nothing-but-net>.

## Arguments in favor of zero rating

Some key assumptions in the arguments against zero rating are worth examining. At its heart, net neutrality implies a pure, ideal way in which a user connects, navigates and learns on the Internet, free from influence and intermediaries. However this notion of a neutral experience conflicts with the established theories of the sociology of knowledge<sup>8</sup> which posit that knowledge is mediated by social constructs. Neutrality is impossible because the Internet, like any medium, is by definition *mediated* or conveyed by intermediaries.<sup>9</sup> Calling a longing for a “paradise lost”<sup>10</sup> of a golden age of Internet neutrality that never was, net neutrality advocate Alejandro Pisanty critiques the excessive idealism of the net neutrality movement in favor of practical measures. In any case, one shortcoming of net neutrality is that it overwhelmingly focuses on internet service providers (ISPs) but fails to recognize the influence and non-neutral practices of global platforms, which have significant market power, users bases in the hundreds of millions (if not billions), and far high profitability and market shares than ISPs.

One proof point against neutrality is the popularity of walled gardens. Apple’s hardware and software designs are part of a tightly-controlled, vertically integrated, closed product ecosystem. Apple would not exist if there was the equivalent of network neutrality for computer hardware and software. Similarly “curated” Internet experiences are demanded by users, including The J Net for conservative Jews which blocks offending content; Islamic Mobile<sup>11</sup> which offers zero rated mobile access to the Koran and other religious content for Muslims; broadband packages bundled with software and support tailored for the elderly in Denmark;<sup>12</sup> zero rated mobile plans for the World Cup,<sup>13</sup> and mobile plans designed for grandmothers to message with the grandchildren via WhatsApp.<sup>14</sup>

The assertion that all plans must be “affordable full access” assumes that users value all data equally. But many would gladly substitute “low cost limited access” without feeling any twinge of discrimination; rather they feel it is their right. Consumers increasingly demand the ability to pick and choose among the cable channels and eschew paying for the full packages; they see no difference with internet access.

For many users, selecting a provider purely on speed and price is not only difficult, it’s boring. It is preferable for some users to select a plan based upon brand identity,<sup>15</sup> cross-marketing, cross-selling, a particular phone, features, benefits, or functionality they value. In this way, users are looking for operators who best cater to their needs, not necessarily the provider that provides the most data at the lowest price.

---

<sup>8</sup> Karl Mannheim. *Ideology and utopia: an introduction to the sociology of knowledge*. Translated by Louis Wirth and Edward Shils. New York: Harcourt, Brace and Company; London: Kegan Paul, Trench, Trubner & Co., 1936

<sup>9</sup> Christopher Yoo, “Free Speech and the Myth of the Internet as an Unintermediated Experience,” *George Washington Law Review*, Vol. 78, Pg. 697, 2010 University of Pennsylvania, Inst for Law & Econ Research Paper No. 09-33 University of Pennsylvania Law School, Public Law Research Paper No. 09-26 TPRC 2009, September 2009, 77.

<sup>10</sup> Comments by Alejandro Pisanty: “Dynamic Coalition on Network Neutrality” (The Internet Governance Forum, September 2, 2014), <http://www.intgovforum.org/cms/174-igf-2014/transcripts/1923-2014-09-02-dynamic-coalition-on-network-neutrality-room7>.

<sup>11</sup> “Free Islamic Ramadan App from Amadan Omantel,” OmanTel, accessed August 5, 2015, [http://www.omantel.om/Omanweblib/Individual/Mobile/islamic\\_mobile\\_app.aspx?L](http://www.omantel.om/Omanweblib/Individual/Mobile/islamic_mobile_app.aspx?L).

<sup>12</sup> NemPC or EasyComputer is a bundled service designed for the elderly in Denmark sold as a monthly subscription. It consists of a (1) software package that becomes a “skin” for computers and devices optimized for the key digital activities for the elderly in Denmark (official Danish government websites for health, home care, pension, digital signature etc) and the national banking security for financial applications, NEMID (Easy Identification); (2) 24/7 call center and online tech support; (3) a broadband connection; (4) connected computers and devices. All the items can be purchased a la carte. The service is popular and expanding to similar segments in other countries.

The packages comes with enhanced security features: “NemPC,” accessed August 12, 2015, <http://nempc.dk/produkter.php?page=nempc>.

<sup>13</sup> <http://www.fonearena.com/blog/131758/rcom-offers-free-access-to-twitter-during-world-cup-2015-introduces-data-recharge-offers.html>

<sup>14</sup> <http://www.hyderabadass.com/2014/02/20/my-indian-grandmother-convicted-me-to-download-an-app-that-just-sold-for-19-billion/>

<sup>15</sup> Virginia Postrel. *The Substance of Style: How the Rise of Aesthetic Value Is Remaking Commerce, Culture, and Consciousness*. Harper Perennial, 2004.

For many users, their choice of phone is personal statement, and though they may buy the newest model, they use only a fraction of its functionality, perhaps only a third of its features,<sup>16</sup> meaning that a large data plan is not always necessary. Others may have a more standard phone, but use it like a workhorse. Offers such as the zero rated version of WhatsApp<sup>17</sup> by EPlus, a leading Germany MVNO, offers free WhatsApp even when the user has no balance on the account.

Some have no interest to access all internet content, even if it is free. A number of users consider the Internet a mecca for pornography, gambling, piracy, and other digital vice. Many are legitimately concerned that mandated all or nothing offers put them at risk to have their security and privacy compromised, particularly for malware that may be embedded in certain content. Such users may also buy subscriptions that block ads because they do not want to come in contact with offending tracking software, as well as to reduce data consumption from advertisements. It follows that not all broadband offers, zero rated or not, appeal to users equally. Baseball lovers might not buy a zero-rated mobile offer tailored for the football fan, but they are not necessarily worse off because those offers are in the marketplace.

There are some valuable reasons to support zero rating which include but are not limited to positive spillovers, network effects, market competition, and lower prices. Simply put, zero rating is a way to increase the number of users, which increases the value of the network.<sup>18</sup> There is a value to get more people on the network, whether it's through universal service, broadband subsidies, or zero rating. Proponents of corporate social responsibility may recognize zero rating as one way a company makes its product more affordable and available to disadvantaged communities. Orange describes it as one of their CSR initiatives.<sup>19</sup> Proponents of government subsidies may see a role for zero rating, as they know public money is not unlimited.

Eisenach observes the double benefit stimulated by zero rating is that users are both content consumers and creators (e.g. Facebook, Wikipedia, Twitter etc).<sup>20</sup>

Zero rating can also be a driver of competition in the marketplace and is a model most frequently used by entrant operators. As the case studies will show, zero rating is generally deployed by mobile virtual network operators (MVNOs) and resellers. As they cannot differentiate on network quality or price, they only have marketing and customer service. Zero rating becomes increasingly important for them both to establish themselves against incumbents, and perhaps to offer zero rated forms of customer service applications, similar to an 800 toll free number for support.

Zero rating is a type of price differentiation, the practice of offering the same or similar product to different segments and different prices. Network industries, such as broadband networks, have high upfront costs which are generally fixed for a large set of users. Once established, the cost of incremental output declines. It makes sense, therefore, to charge users with lower willingness to pay a discount, and thus cover the overall costs. Yet price differentiation occurs in industries with low-barriers to entry as well, which led William Baumol to conclude that competition forces firms to adopt price differentiation.<sup>21</sup> In many cases, firms cannot enter the market without it.<sup>22</sup>

---

<sup>16</sup> Leopoldina Fortunati and Sakari Taipale. The advanced use of mobile phones in five European countries. The British Journal of Sociology Volume 65, Issue 2, pages 317–337, June 2014  
<http://onlinelibrary.wiley.com/doi/10.1111/1468-4446.12075/abstract>

<sup>17</sup> "WhatsAppen Ohne Guthaben Und Ohne WLAN.," *Eplus*, accessed August 7, 2015, <https://www.eplus.de/WhatsApp>.

<sup>18</sup> Jeffrey Eisenach, "The Economics of Zero Rating," Nera Economic Consulting, (March 2015),  
<http://www.nera.com/content/dam/nera/publications/2015/EconomicsofZeroRating.pdf>.

<sup>19</sup> "Committed to Europe - Ensuring an Open Internet for All," *Orange*, April 2015,  
[http://www.orange.com/en/content/download/30121/838284/version/2/file/Orange\\_open\\_internet2015.pdf](http://www.orange.com/en/content/download/30121/838284/version/2/file/Orange_open_internet2015.pdf).

<sup>20</sup> Supra

<sup>21</sup> Baumol, William J., "Regulation Misled by Misread Theory - Perfect Competition and Competition-Imposed Price Discrimination" (AEI-Brookings Joint Center 2005 Distinguished Lecture Presented at the American Enterprise Institute,



It is puzzling why price differentiation is so maligned for mobile broadband access and yet embraced, if not demanded, in many other areas. An eminent example is differential prices for medicines, particularly in developing countries. A recent study<sup>23</sup> by the British government observes,

Adapting drug prices to the purchasing power of consumers in different geographical or socioeconomic segments could potentially be a very effective way to improve access to medicines for people living in low and middle-income countries. A well-implemented differential pricing system could also lead to increase in sales for pharmaceutical manufacturers.

Price differentiation is commonplace in ticket sales for movies, sports, and cultural events. For example discount tickets for students and the elderly are a matter of course, as are reduced prices for off-peak performance times. With regard to transportation, whether bus, plane, train, or ferry, reduced ticket prices are also offered to certain segments of the population. Additionally there are discounts for early purchase, off peak purchase, and so on. Many plan their visits to restaurants to take advantage of early bird specials, late night specials, half-priced happy hour, and so on.

Even the US Federal Trade Commission<sup>24</sup> recognizes that loss leader pricing strategies can be competition enhancing, the practice of selling one product at below cost to stimulate related products and services. For example, supermarkets may stock bread and milk at or below cost but earn revenue on other items. Pubs may sell low-priced food but earn a profit on alcohol. Many establishments may offer low cost entertainment but earn revenue on refreshment.

Similarly the freemium<sup>25</sup> model is widely practiced in digital industries. This consists of a free digital offer for software, media, games, or other service, but a charge or premium charged for special features, increased functionality, or virtual goods. LinkedIn, Amazon, online newspapers, and countless other companies offer freemiums. It is not logical that such companies should be allowed to offer for free—or zero rate<sup>26</sup>—certain aspects of their service to stimulate adoption and yet broadband providers cannot.

---

September 22, 2015), [http://www.aei.org/wp-content/uploads/2014/03/-regulation-misled-by-misread-theory\\_105820523401.pdf](http://www.aei.org/wp-content/uploads/2014/03/-regulation-misled-by-misread-theory_105820523401.pdf).

<sup>22</sup> Baumol explains, "Not only will each firm be forced to adopt discriminatory prices, but each firm is likely to be forced to adopt a unique vector of prices, each of which is dictated by the market. Thus, this paper seeks to show why price discrimination may occur—and may occur frequently—not despite relative ease of entry (or other competitive pressures) but because of it. In fact, I will show that in highly competitive markets, firms may have no choice: Competition can force them to adopt the vector of profit maximizing discriminatory prices. Moreover, the second central proposition of the paper argues that, in equilibrium, these discriminatory prices are not haphazard in their welfare properties but will generally constitute a Ramsey optimum—satisfying the second-best welfare attributes of revenue constrained economic welfare. Neither conclusion means that the public interest requires all industries that employ discriminatory prices to be exempted automatically from regulation. But it does imply the converse: that such industries should not automatically be deemed appropriate objects of regulatory oversight."

<sup>23</sup> Prashant Yadav, "Differential Pricing for Pharmaceuticals: Review of Current Knowledge, New Findings and Ideas for Action" (MIT - Zaragoza International Logistics Program Zaragoza Logistics Center, August 2010), [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/67672/diff-pricing-pharma.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67672/diff-pricing-pharma.pdf).

<sup>24</sup> Federal Trade Commission and Patrick DeGraba, *Volume Discounts, Loss Leaders, and Competition for More Profitable Customers* (Pennyhill Press, 2013).

<sup>25</sup> Lukin, Jarid, "Jarid Lukin (@jblukin) | Twitter," November 7, 2014, <https://twitter.com/jblukin>.

<sup>26</sup> Michael Katz, comments: "Should Wireless Technologies Be Regulated Differently?," ISOC-DC TV - Live Events, (October 15, 2014), <http://www.isoc-dc.org/isoc-dc-tv/>.

# ANALYSIS

This paper has covered arguments for and against net neutrality. This section discusses mobile operators' financial performance in specific countries and the issue of Internet traffic at exchange points and the backbone. Zero rating comprises one element of an operator's sales and marketing strategy which it uses to earn revenue. Such revenue is necessary to be viable to make network investments and upgrades. Thus the ways in which bandwidth is paid—whether by end users, content/application providers, or both—is both important and complex.

The analysis attempts to test the following assertions made by the opponents of zero rating.

1. The operator that offers zero rating will win market share.
2. The zero rated service will win market share.
3. The presence of zero rating will preclude the emergence of new applications and services.
4. Users do not go to non- zero rated content. If Facebook is free, they don't venture beyond it.
5. Operators that zero rate their own content foreclose other content.

This section provides an overview of a large financial database for mobile operators and then drills down to three countries which have specifically banned zero rating practices. Case studies are offered to describe the factors which emerged to make zero rating illegal. Thereafter a brief review of the tests of harm is offered. Finally the assertions of zero rating detractors are tested using data on mobile applications. The Merrill Lynch Bank America Wireless Matrix is a database of collected publicly available financial statements from the world's mobile operators collated and organized by country with on a set of metrics over a period of time. For some measures data is not available, so that table is blank for the particular country.

## Financial Analysis

The data examined covers the period 2007 to 2013. The analysis is started in 2007, the year in which the iPhone was launched and because it marks the shift to the modern era of broadband data subscriptions sold for smartphones. We focus on Year on Year (YoY) increments and assume that user demand for digital service will drive the purchase of zero-rating contracts and interest to access sites.

It should be noted that some data, particularly for developing countries may have been collected or estimated with heterodox methods and may be inconsistent or incomplete. We note any items that we believe to be material.

The following countries were chosen because of their dynamic emerging economies, fast development of mobile services, the existence of zero-rating contracts, and in some cases, the presence of net neutrality rules. For the data set, we tried to identify per country whether zero-rating was implemented, the correlation with the year in which smartphones were introduced to the local market, and the type of tariffs available.

The block of Latin America countries (Argentina, Brazil, Chile, Colombia, Mexico, and Peru) in the study share a common geographical location and multiple similar cultures, however the history of mobile networks is quite different in each and their net neutrality policies.

Argentina is a country with one of the longest-running commercial mobile network (1989), with the use of smartphones and data contracts established around 2010-2011.

Brazil and Mexico follow with similar numbers. The other countries have been able to fast forward their assimilation to digital services in the last three of four years.

As shown in table 1, the some countries had years of continuous expansion but others such as Colombia and Peru, the saturation of the urban market has reduced expansion. Mature markets such as Brazil and Argentina are still growing, but at low rates.

For comparison a set of Africa countries were selected: Algeria, Egypt, Nigeria and South Africa. They have been chosen because of the faster development of mobile networks, adoption of mobile payments, and clear drive towards the generalized mobile technology for both private and public use.

South Africa is one of the African countries with the oldest mobile networks, followed closely by Egypt and Nigeria. The rapid adoption and success of mobile networks in Africa is well documented,<sup>27</sup> though it appears that hyperfast growth has slowed since 2010. Growth in subscribers remains above 10% per year.

The explosion of mobile networks in Latin America and Africa parallels a reality where a significant proportion of population still lacks basic access to food, clothing and shelter.<sup>28</sup>

	%	CY07	CY08	CY09	CY10	CY11	CY12	CY13
Latin America	Argentina	32.7%	30.2%	15.0%	20.7%	21.9%	18.9%	18.0%
	Brazil	27.3%	20.8%	9.1%	10.0%	11.9%	6.3%	1.3%
	Chile	29.4%	16.7%	-5.9%	17.1%	15.1%	10.3%	5.0%
	Colombia	22.8%	3.8%	-1.9%	7.3%	14.7%	7.5%	4.4%
	Mexico	22.3%	11.6%	3.7%	10.0%	0.4%	9.1%	-1.2%
	Peru	31.5%	22.3%	6.7%	13.7%	13.3%	10.1%	8.7%
Africa	Algeria	14.9%	3.3%	-1.4%	1.9%	12.5%	15.2%	3.7%
	Egypt	31.2%	30.9%	9.5%	6.8%	-1.0%	4.7%	4.5%
	Nigeria	56.4%	26.8%	21.6%	-3.5%	31.4%	6.4%	4.6%
	South Africa	16.0%	5.4%	9.5%	12.4%	4.2%	4.2%	-1.8%

Table 1: The growth of subscribers Year to Year (YoY) in the period 2007 to 2013.

One interpretation of table above is that as adoption slows, incentives such as zero rating can help get more people on the network. It might also reflect a point of diminishing marginal returns. All of those who have had the wherewithal to adopt mobile broadband to date have done so. In order to get the next tranche on board requires a stimulation to demand, either in the form of incentive (lower price, zero rating etc) and/or increase in the user’s interest, skills etc. It might be observed that zero rating offers a self-reinforcing way to educate new users about the Internet; they get a free trial to do something they haven’t used before. Getting new customers on the network also helps to cover costs and provide revenue for further investments.

Table 2 is a summary of the mobile network operators in the regions studied. All these companies are registered in local and international stock markets and many have strategic partnerships with telecom operators from outside the region such as Telefonica, Telecom Italia and others.

<sup>27</sup> GSMA. "Women&Mobile: A Global Opportunity - A Study on the Mobile Phone Gender Gap in Low and Middle Income Countries." London, UK: GSMA Development Fun -Cherie Blair Foundation for Women, 2010. [http://www.gsmworld.com/images/mwomen\\_pr\\_assets/women\\_mobileReport.pdf](http://www.gsmworld.com/images/mwomen_pr_assets/women_mobileReport.pdf).  
<sup>28</sup> GSMA, and Deloitte. "Brazil Mobile Observatory." London: GSMA, 2012. [http://www.gsma.com/spectrum/wp-content/uploads/2012/10/gsma\\_brazil\\_obs\\_web\\_09\\_12-1.pdf](http://www.gsma.com/spectrum/wp-content/uploads/2012/10/gsma_brazil_obs_web_09_12-1.pdf).

Country	Telecom providers
Argentina	Telecom Argentina (TI), Movistar Argentina (TEF), Movicom (BLS), Claro (AMX),NIHD
Brazil	Vivo (Telefonica), TIM Brazil (TI), Claro Brazil (AMX), Oi (PT), NIHD, Other
Chile	Movistar Chile (TEF), Entel Chile, Bellsouth (CHL), Claro Chile (AMX)
Colombia	Comcel (AMX), Movistar Colombia (TEF),Tigo Colombia (MICC)
Mexico	Telcel (AMX), Iusacell, Movistar Mexico (TEF), Unefon, NIHD
Peru	Movistar Perú (TEF), Claro Perú (AMX) ,BellSouth, Nextel
Algeria	Djezzy, Mobilis, Ooredoo
Egypt	ECMS (Mobinil), Vodafone, Etisalat Egypt
Nigeria	MTN, Airtel (Bharti), Globacom, Etisalat, Others
South Africa	Vodacom, MTN, Cell C, Telkom

**Table 2:** Mobile providers by country.

Although the growth is impressive in the countries selected, the use of contracts differ according to local conditions. There are many niche markets depending which sector of the population is experiencing fast economic growth.

Strategies for sales and marketing differ and impact service revenue growth. Because of the diverse economies and inflation rates, we compare the percentage of year to year expansion in the local currency. For all countries in the study, service revenue as a whole has been declining for years. This is part of a larger global trend for operators which are transitioning from a paradigm of selling voice and messaging to one of selling data.

The shift is not necessarily profitable for operators, even though the amount of data consumed by end users is generally increasing. Net neutrality advocates assert that operators should simply compete on data, but most operators face heavy price competition because of multiple providers in the marketplace. Additionally their largest source of revenue, voice and messaging, has been significantly reduced by the proliferation of free alternatives such as Skype, WhatsApp, Facebook Messenger etc. Thus net neutrality rules are a double-whammy for operators; not only are they not allowed to manage their networks with increasing data demands, they cannot make offers to cover their costs.

		CY07	CY08	CY09	CY10	CY11	CY12	CY13
Latin America	Argentina	32.7%	30.2%	15.0%	20.7%	21.9%	18.9%	18.0%
	Brazil	27.3%	20.8%	9.1%	10.0%	11.9%	6.3%	1.3%
	Chile	29.4%	16.7%	-5.9%	17.1%	15.1%	10.3%	5.0%
	Colombia	22.8%	3.8%	-1.9%	7.3%	14.7%	7.5%	4.4%
	Mexico	22.3%	11.6%	3.7%	10.0%	0.4%	9.1%	-1.2%
	Peru	31.5%	22.3%	6.7%	13.7%	13.3%	10.1%	8.7%
Africa	Algeria	14.9%	3.3%	-1.4%	1.9%	12.5%	15.2%	3.7%
	Egypt	31.2%	30.9%	9.5%	6.8%	-1.0%	4.7%	4.5%
	Nigeria	56.4%	26.8%	21.6%	-3.5%	31.4%	6.4%	4.6%
	South Africa	16.0%	5.4%	9.5%	12.4%	4.2%	4.2%	-1.8%

**Table 3:** Service Revenue Growth. % calculated on local currency.

Our table 4 shows a different perspective, but data is available only for a few countries. While total service revenue is declining, average revenue *per user* (ARPU) is growing. This demonstrates that users want to access to more applications and services with their mobile broadband subscription. It would seem to be the proof that assertion #4 is false, that users do not go to non- zero rated content. This chart clearly shows that subscribers

are increasingly paying for data subscriptions. However this chart does not tell us what percentage of any operator’s subscriber base has been transitioned to data packages. To be sure, operators want to increase the value of any single customer, but the rate of success likely varies across operators and with the sophistication of their networks. It is also important to note that these figures are not necessarily synchronized with profitability. Though any one customer could be more profitable for an operator with a data package, it is not necessarily the case that selling data is more profitable for operators as traditional SMS or voice was before.

		CY07	CY08	CY09	CY10	CY11	CY12	CY13
Latin America	Argentina	18.8%	24.9%	28.9%	31.4%	36.6%	40.8%	45.8%
	Brazil	7.4%	9.2%	12.4%	15.7%	18.7%	22.5%	26.3%
	Chile	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Colombia	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Mexico	13.3%	15.9%	20.3%	24.2%	29.7%	35.0%	39.0%
	Peru	N.A	N.A	N.A	N.A	N.A	N.A	N.A
Africa	Algeria	N.A	N.A	N.A	N.A	N.A	N.A	N.A
	Egypt	4.6%	6.6%	8.5%	9.8%	11.0%	12.5%	13.7%
	Nigeria	3.5%	4.0%	5.0%	6.0%	7.4%	21.0%	22.7%
	South Africa	9.9%	12.8%	15.6%	19.0%	22.0%	26.4%	30.2%

Table 4: Monthly ARPU YoY Growth.

Smartphones in 2007 were extremely expensive for users of the countries in this analysis. However smartphones have significantly fallen in price (as well as used smartphones have become available), something that helps make data packages more affordable. Though some data is missing the following table, it shows the relative success that operators’ have made in transitioning to selling data instead of voice and SMS. Operators in these countries still earn more than half of their revenues from voice and SMS, in many cases on 2G infrastructures. This presents a challenge and opportunity.

The challenge is meeting the expectation of the international community that operators should deploy broadband infrastructure, even though relative demand for broadband is low and the revenue to support it has yet to be earned. The opportunity is finding the business model to bridge the gap. This is where zero rating, along with other types of offers come into play.

To explain the situation, a column showing the percentage of the population using the Internet is added. Though the 2014 operator data is not available, the comparison between the 2013 percentage of data service revenues compared to the 2015 estimated internet adoption provides some indication of the opportunity for operators to sell mobile broadband to people who have yet to adopt the Internet, provided offers can made in a compelling way. In the countries below, at least a quarter, if not half, of the population has yet to come online. This population generally represents people of lower income and perhaps education, so it is of particular importance that offers be low-cost and accessible. There should not too be many contract restrictions or signup requirements (e.g. bank references etc); as such, prepaid offers are so important.<sup>29</sup> For those who

<sup>29</sup> Roslyn Layton, Role of Prepaid in Africa, Chapter in The African Mobile Story, River Publishers, 2014.

have never tried the Internet, having an incentive such as a free trial, will support adoption.

More generally the mobile broadband penetration in the developing world is 39.1 persons for every 100. This exceeds the number of people who have computers and Internet at home, roughly one third of the population of the developing world.<sup>30</sup>

	CY07	CY08	CY09	CY10	CY11	CY12	CY13	% Pop using Internet 2015 <sup>31</sup>
<b>Argentina</b>	18.8%	24.9%	28.9%	31.4%	36.6%	40.8%	45.8%	64.70
<b>Brazil</b>	7.4%	9.2%	12.4%	15.7%	18.7%	22.5%	26.3%	57.60
<b>Chile</b>	N.A	N.A	N.A	N.A	N.A	N.A	N.A	72.35
<b>Colombia</b>	N.A	N.A	N.A	N.A	N.A	N.A	N.A	52.57
<b>Mexico</b>	13.3%	15.9%	20.3%	24.2%	29.7%	35.0%	39.0%	44.39
<b>Peru</b>	N.A	N.A	N.A	N.A	N.A	N.A	N.A	40.20
<b>Algeria</b>	N.A	N.A	N.A	N.A	N.A	N.A	N.A	18.09
<b>Egypt</b>	4.6%	6.6%	8.5%	9.8%	11.0%	12.5%	13.7%	31.70
<b>Nigeria</b>	3.5%	4.0%	5.0%	6.0%	7.4%	21.0%	22.7%	42.68
<b>South Africa</b>	9.9%	12.8%	15.6%	19.0%	22.0%	26.4%	30.2%	49

**Table 5:** Data % of service revenues

Another challenge in the provision of mobile services is that prices generally have no relation to fixed costs such as spectrum, and in some cases, operating costs such as traffic delivery. Mobile service markets are so competitive, that spectrum is generally a sunk cost. Another issue for mobile operators in developing countries is that users disproportionately request data from far away countries. This also adds to the challenge of pricing mobile broadband competitively and affordably.

**Traffic analysis**

An important issue that is overlooked in the discussion of zero rating is an economic analysis of the disproportionately high level of traffic generated by the top 10 mobile applications and the aggregation of traffic at exchanges and backbones. Net neutrality wants to ensure equal access to sites and services for end users, but such performance can only be achieved by keeping good provision, upgrade, and maintenance of the telecom network, which implies costs and relationships between the pricing of services and expenditure.

How traffic is aggregated and the impact the transport cost of data through backbone networks is transferred to users is not clearly understood, nor is such vital information

<sup>30</sup> "Core Household Indicators" (ITU World Telecommunication/ICT Indicators Database., 2015), <http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2015/CoreHouseholdIndicator.xls>.  
<sup>31</sup> Metadata for Percentage of Individuals Using the Internet," 2015, [http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2015/Individuals\\_Internet\\_2000-2014.xls](http://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2015/Individuals_Internet_2000-2014.xls).



readily available. Not having the information or mischaracterizing the situation can lead to false conclusions. Some basic trends are known however and are helpful to review.<sup>32</sup>

Video is a huge and growing portion of the traffic delivered to mobile devices, comprising more than two-thirds of all traffic in some countries. Significantly, just two entities, Google/YouTube and Netflix take an overwhelming share of this traffic.

Data centers 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 Google, Facebook, and Amazon. Akamai, Level 3, and other content delivery providers are important, as are the data centers of banks and telecom providers.

The structure of the traffic flows differ significantly from the archetypal model of the three layered internet (infrastructure, transport, service/data). Internet exchanges and private contracts for peering and transit re-draw routing worldwide. The structure today is more modular and “platformized.” The idea of content/application providers passively accessing transport networks has given way to the reality of proactive approaches in which content provider develop individualized solutions and relationships for advanced, dynamic delivery and competitive differentiation. Content providers avail themselves to non-neutral pricing as a matter of course. This means that Internet service providers (ISPs), including mobile operators, simply don’t have the market power that net neutrality advocates claim.

Differential treatment of traffic is the norm, and this is what content providers want when they purchase traffic delivery solutions from a range of intermediary providers.

Decisions about transit and data centers by content/applications providers have material impacts to end users. For example, people in Latin America use global (American) platforms such as Google, Facebook and Twitter to talk with people around the corner. How those platforms are provisioned locally and regionally has technical, regulatory, and geopolitical implications. For example Google built a CDN in Chile, allowing traffic to be redistributed from the Miami internet exchange. This improves the experience for its end users in Chile.

In Europe, the practical evidence shows that Europeans largely use American platforms to communicate with other Europeans. Unfortunately the Amsterdam Internet Exchange (AMIX) has not been forthcoming to allow academics to measure or test these traffic trends.<sup>33</sup>

---

<sup>32</sup> Weller, Dennis, and Bill Woodcock. “Internet Traffic Exchange: Market Developments and Policy Challenges.” OECD Digital Economy Papers, No. 207, OECD Publishing., 2012. <http://www.internetsociety.org/doc/weller-d-and-b-woodcock-2012-internet-traffic-exchange-market-developments-and-policy-challenges>.

Liebenau, Jonathan, S. Elaluf-Calderwood, and P. Karrberg. “European Internet Traffic: Problems and Prospects of Growth and Competition - White Paper.” London: London School of Economics and Political Science, 2013.

Liebenau, Jonathan, S. Elaluf-Calderwood, and P. Karrberg. “Strategic Challenges for the European Telecom Sector: The Consequences of Imbalances in Internet Traffic.” *Journal of Information Policy* 2 (2012): 248–72.

<sup>33</sup> Silvius, Stephanie. “Internet Exchange Points: A Closer Look at the Differences between Continental Europe and the Rest of the World.” Amsterdam: EURO-IX, 2011.

## Case studies of zero rating in Chile, Netherlands, and Slovenia

Given that the country level financial information offers limited opportunity to address the five assertions, case studies are offered to give further insight and context. Chile, Netherlands, and Slovenia are three countries with hard net neutrality laws and bans on forms of zero rating. This section explores a number of factors and dynamics related to the banning of zero rating. It generally starts with a belief amongst net neutrality advocates that regulators are not doing enough to enforce net neutrality rules. While advocates recognize that blocking and throttling either don't happen or are rare occurrences, it is seen as urgent to address what they consider a growing problem, the presence of price differentiated offers in the marketplace. The net neutrality organizations make formal complaints to regulators and competition authorities with a similar argumentation: The country has a net neutrality law requiring all data to be treated equally. Ergo zero rating is a violation.

In each of the three countries, the first response of telecom regulator was that zero rating is not a violation. There seems to be a reluctance of the regulator to rule that zero rating is discriminatory, whether for a recognition of its benefits, a waste of political capital on an insignificant issue in light of more pressing priorities; or even misgiving about net neutrality itself.

Undeterred, net neutrality advocates step up the campaign against zero rating by writing blogs and enjoining sympathetic journalists to take up the story. In each of the three countries, advocates have succeeded with bans. However, the rulings decisions are flawed, according to net neutrality advocates. Bans are not uniform across all offers and providers. Many stakeholders complain that efforts made to provide more clarity end up creating more confusion. Moreover regulators find themselves in embarrassing situations in which they have to backtrack on judgements, correct earlier statements, and mediate moral decisions about why zero rating is ok for Wikipedia but not for WhatsApp.

We find as well that net neutrality advocates and organizations are closely tied to the regulatory authority and government. In one case, a net neutrality advocate rises to a position of regulatory power to implement the zero rating ban himself. Victory is declared by net neutrality advocates when operators raise or remove data caps.

### Chile

In 2010 Chile was the first country in the world to make a net neutrality law.<sup>34</sup> The effort was an outcome of many years of lawsuits between operators and attempted telecom regulation that was ultimately found unlawful. To make rules, the country's communications laws needed to be updated to vest the proper authority within the telecom regulator, a situation currently in play in the US, as the FCC faces lawsuits for its attempt to make net neutrality rules. The situation is indicative of outdated communications laws that Congress needs to modernize. But just because net neutrality rules are in place does not necessarily mean the issue has more clarity. The Chilean case illustrates that rules can create more disputes.

Virgin Mobile launched an MVNO on Movistar network's in Chile in April 2012. Because virtual operators resell network access, they cannot differentiate on speeds or quality, so they must differentiate on marketing, customer service, and other non-network parameters. As such zero rating is an important tool for MNVOs.

Virgin Mobile Chile used a common marketing strategy employed by MNVOs: paint the established operators as dinosaurs and celebrate customers as "rock stars". "Chileans

---

<sup>34</sup> *Consagra el Principio de Neutralidad en la Red Para Los Consumidores y Usuarios de Internet*, General de Telecomunicaciones Ley 18.168 (August 26, 2010), <http://www.leychile.cl/Navegar?idNorma=1016570&buscar=NEUTRALIDAD+DE+RED>



can now get fair flat rate calling and great Data bundles and "Anti-Plans"<sup>35</sup> with everything they need. And Virgin Mobile Chile throws in extra goodies like Unlimited Whatsapp when you buy data. The Rock Star customer support team has brought a new level of care to the Chile market, and customers are the most satisfied in the market," notes the operator's Chilean website.<sup>36</sup>

A year after launch, the company had 200,000 customers which the CEO owes to "a simple offer, without asterisks, flat rate data, convenient bags of minutes, and a call center."<sup>37</sup> Over three years, the company earned 1% of the Chilean market and is on track to have 400,000 customers by the end of 2015, half of which are post-paid.<sup>38</sup> Other explanations for its success include laws in 2012 that allow number portability and unlocking of phones.<sup>39</sup> Virgin Mobile has extended its concept to Mexico and Colombia and has a goal of winning 5% of the Chilean market.<sup>40</sup>

To be sure, with 70 percent of its customers aged 15-35, of which 70% have data plans and 85% have smartphones, WhatsApp would be one of the popular apps to include in an offer. In response to Subtel's decision to ban zero rating, the CEO explained,

Well, certainly it had an impact because we had to revise our offer. We have not eliminated the promotion, but we had to change it. Back when you bought a package of data, we gave free Whatsapp for the 30 day duration of the package, and if a customer left without any balance, the customer could continue using WhatsApp to the end of the period. Now we continue offering this service for free, that is, that the use of data Whatsapp not count toward the package, but the moment in which the client runs out of contract data, he cannot continue using WhatsApp. That is, customers have Whatsapp free while having data package.<sup>41</sup>

However the CEO asserts that zero rating has less importance in light of other activities, which include its distribution strategy through the large retail chains Ripley and Falabella and wholesaling with small shops. Virgin Mobile operates its own distribution channels with kiosks in subway stations and its website. The country also adopted a framework to support MVNOs<sup>42</sup> and made a law to ensure number portability. The success of Virgin Mobile cannot be attributed directly to its zero rated offer.

It would be expected that net neutrality advocates would appreciate such service-based competition in the market, but no. Neutralidad Sí! in concert with CivicoONG complained to the regulator that Virgin Mobile's offer of free WhatsApp was an attack on the law of net neutrality. They asserted that Virgin Mobile is creating a disincentive to use competing messaging services such as Line and Telegram. Correspondence between Neutralidad Sí and the regulator was reviewed. The original complaint, No. 324923 posted on January 29, 2013, has been removed,<sup>43</sup> but the rest of the exchange remains.

In the correspondence, the regulator reiterated that the Chilean rules state that operators cannot arbitrarily block, interfere, discriminate, hinder or restrict the right of any Internet user to use, send, receive or offer any content, application, or legal service. Offers cannot arbitrarily distinguish content, applications, or service based on source or

---

<sup>35</sup> Anti-plan was the idea of an offer that is not constrained to the traditional telecom contract, e.g. long contract life, termination fees, extra charges etc

<sup>36</sup> "Virgin Mobile Chile," *Virgin.com*, accessed August 5, 2015, <http://www.virgin.com/company/virgin-mobile-chile>.

<sup>37</sup> "Virgin Mobile Cuenta En Chile Con Más de 200.000 Clientes," *CIOAL The Standard IT*, April 17, 2013, <http://www.cioal.com/2013/04/17/virgin-mobile-cuenta-en-su-primer-ano-en-chile-con-mas-de-200-000-clientes/>.

<sup>38</sup> Markus Zallman, "Virgin Mobile Chile Targets 400,000 Mobile Subs by End- 2015," *MVNO Dynamics*, April 22, 2015, <http://www.mvnodynamics.com/2015/04/22/virgin-mobile-chile-targets-400000-mobile-subs-end-2015/>.

<sup>39</sup> "Virgin Mobile Chile's MVNO Signs up 36,000 Subscribers," *MVNO Dynamics*, July 24, 2012, <http://www.mvnodynamics.com/2012/07/24/virgin-mobile-chiles-mvno-signs-up-36000-subscribers/>.

<sup>40</sup> Leticia Pautasio, "Queremos Alcanzar 300.000 Clientes Al Cierre de 2014," *Telesemana*, April 13, 2014, <http://www.telesemana.com/blog/2014/08/13/queremos-alcanzar-300-000-clientes-al-cierre-de-2014/>.

<sup>41</sup> Ibid

<sup>42</sup> Ibid

<sup>43</sup> Civico ONG, "Denuncia Por 'Whatsapp Gratis' En SUBTEL," *Storify*, accessed August 5, 2015, <http://storify.com/ongCivico/denuncia-por-whatsapp-gratis-en-subtel>.

owner. The legislation still allows operators to manage traffic within a set of constraints, provided that the actions do not impact competition. The purpose of the law is to ensure that services, applications, and content are offered without discrimination to the time the user access is allowed without arbitrary restrictions and that access be provided in a competitive way.

The offer by Virgin Mobile and WhatsApp did not prevent access to other applications, according to the regulator. It only releases metering for the one application for the period of the offer, and therefore does not constitute a breach of net neutrality. The user can also access the application even when he has no balance.

Neutralidad Sí! responds the same day. They extrapolate that it will lead to situations in which users are coerced with rebates and discounts to use "search engine X" or "video provider Y". Secondly they object to the idea that "traffic management and network management" do not harm competition. They note that if access to WhatsApp is free then it effectively harms other competitors because to access to them must be paid.

The regulator replies that it has revisited the net neutrality law and reiterates the points. As for the threat described, that an operator is favoring one application over another, this is not case because the offer is not restricting the right of users to access the Internet, which is the point of the law.

Neutralidad Sí! responds with a reference to Article 19 of the Civil Code: "When the meaning of the law is clear, its wording be disregarded under the pretext of consulting its spirit." They reiterate the words "discriminate" and "offer" that exist in the net neutrality law and the Royal Academy of the Spanish language definition of discrimination being "select excluding". They suggest that if other services receive the same treatment as WhatsApp, the arbitrary nature of the discrimination will be eliminated.

The complaint was brought to the Secretariat of the Regulator and then closed with the explanation that the regulator had provided an adequate explanation. The Neutralidad Sí! blog says that the regulator's response was "awkward" and did not rule on the merits.

It appears that the issue gets no further attention until a new chair comes to the telecom regulator. Pedro Huichalaf, former head of related net neutrality advocacy organization ONGMeta, took office in March 2014.<sup>44</sup> The ban on zero rating of selected social media sites is pronounced illegal the following month.<sup>45</sup>

The official decision notes that companies are not punished for offering zero rating, but are invited to end the practice, or to provide the benefits to all traffic of the same class. Some confusion emerged once the decision was released as to nature of the word "arbitrary", whether traffic is treated in an "arbitrary" or deliberate way. At the time of the ruling, Wikipedia Zero was not yet available, but the rule ostensibly outlawed it. Wikipedia noted the Chilean decision is "example of when net neutrality — which is an important principle for the free and open internet — is poorly implemented to prevent free dissemination of knowledge."<sup>46</sup> The regulator then needed to relent and allow Wikipedia to be an exclusive zero rated service, noting that there is a clear difference between Wikipedia Zero and unlimited social messaging.<sup>47</sup> Neutralidad Sí called the exception for Wikipedia, the "last unicorn of the 'good Internet'", a double standard.

Neutralidad Sí appears to be dissatisfied because the regulator while pronouncing the practice illegal, does not do enough to prosecute or punish telecom providers for the

<sup>44</sup> "Renuncia de Pedro Huichalaf Por Nominación Como Subsecretario de Telecomunicaciones," *ONG META*, accessed August 5, 2015, <http://ongmeta.cl/renuncia-de-pedro-huichalaf-por-nominacion-como-subsecretario/>.

<sup>45</sup> *Zero Rating of Such Social Media as Pronounced Illegal*, 2014, [http://www.subtel.gob.cl/transparencia/Perfiles/Transparencia20285/Normativas/Oficios/14oc\\_0040.pdf](http://www.subtel.gob.cl/transparencia/Perfiles/Transparencia20285/Normativas/Oficios/14oc_0040.pdf).

<sup>46</sup> Yana Welinder, "[Wikimedia Announcements] [PRESS RELEASE] Airtel Offers Nigerians Free Access to Wikipedia," June 1, 2014, <https://lists.wikimedia.org/pipermail/wikimedia-l/2014-June/072336.html>.

<sup>47</sup> <http://www.vpschile.cl/servidor-virtual/3821/1/internet/wikipedia-zero-avanza-en-chile.html>

practice. The organization says that the situation is contradictory and calls on the regulator to clarify. The comments under the blog blame Neutralidad Sí for making the zero rating complaint in the first place. The commenter notes that the ban hurts poor people who can't communicate with their family through WhatsApp. Another comment refers to the slippery slope of ill-defined rules such as the ban on zero rating, what may be legal today will not be tomorrow and vice versa. Additionally he faults the organization for not recognizing how internet companies (Facebook) take advantage of users' information with free services. Another commenter criticizes the net neutrality rhetoric of "free Internet" because technically a zero rated offer is free access.

Earlier heads of the Chilean regulator criticized the ruling. On Twitter, one called it "populist idiocy from a small group of activists. A new form of regulatory capture."<sup>48</sup> Another penned an opinion piece in the leading newspaper titled "positively discriminatory, but not arbitrary, in favor of the poor."<sup>49</sup>

To put the issue into perspective, we reviewed official materials of the Chilean telecom regulator. Along with the consumer authority, it publishes an annual report of complaints related to telecommunications. The report<sup>50</sup> for 2012-2013 is telling in what consumers complain about; which companies; and how complaints are resolved. Specifically we were interested to see whether consumers complained to the regulator that zero rating is harmful.

Complaints about mobile communications make up about half of all the complaints in the country for the period. About 2 of every 200 mobile subscribers complain. For mobile communications, the single largest set of complaints is about phones (13%) and problems with phones connecting with networks leading to slow speeds (11%). Thereafter the bulk of complaints (56%) have to do with the contracts themselves, issues of customer care information is faulty, wrong or inadequate; disputes on charges for additional services; charges made for services not used; contract termination; term of warranty for phone; lack of accurate and timely information; and billing cycle change. In fact the largest single complaint across all telecommunications networks is incorrect charges, 27%. The report notes that complaints were resolved at least two-thirds of the time for all but one mobile operator. The report notes that total complaints declined 3.6% from 2012 to 2013.

Importantly the report does not list specific net neutrality or zero rating complaints, and if they exist, they do not amount any more than 1.8% of complaints, the smallest category of any collected complaint. It would be expected that if zero rating was so destructive to consumer welfare and competition that it would garner at least 1.8% of complaints to the regulator. Moreover, if the zero rated version of WhatsApp was hurting competition, it would be expected that Facebook Messenger, Line, Telegraph, and other services would have complained. No evidence of this can be found on the regulator's website. The only complaint we could find was that of Neutralidad Sí!

Chilean consumers increasingly demand content that is not Chilean. It is housed in far locations and takes time to reach Chile. This can also be observed that when one is in Europe accessing a Chilean website, one may experience latency. Sandvine notes,

In Latin American mobile networks, two companies, Facebook and Google, now control over 60% of total traffic in the region. This dominance is driven by the popularity of low cost Android smartphones in the region as well as Facebook's

---

<sup>48</sup> "Sobre Redes Sociales Gratis (with Image, Tweets) · ongCívico," *Storify*, accessed August 5, 2015, <http://storify.com/ongCivico/sobre-redes-sociales-gratis>.

<sup>49</sup> Pepe Huerta, "Redes Sociales Gratis Y La Circular de SUBTEL. ¿Donde Surgió El Problema?," *Neutralidad Si*, June 2, 2014, <http://www.neutralidadsi.org/2014/06/02/redes-sociales-gratis-y-la-circular-de-subtel-donde-surgio-el-problema/>.

<sup>50</sup> "Servicio Nacional Del Consumidor | SERNAC Y SUBTEL Dan a Conocer Ranking de Reclamos En El Mercado de Telecomunicaciones," Sernac, (January 24, 2014), <http://www.sernac.cl/sernac-y-subtel-dan-a-conocer-ranking-de-reclamos-en-el-mercado-de-las-telecomunicaciones/>.

decision to embrace social networking and messaging through their acquisitions of Instagram and WhatsApp. With such concentration, corporate decisions by these major players, like Facebook's decision to auto-play videos uploaded to its site, can instantly and dramatically impact subscribers and network operators.<sup>51</sup>

The issue can be resolved with intermediaries such as content delivery services, video encoding, and content formatting. Generally content owners purchase these services to ensure the fidelity of their content, as well as to lower their operating costs (better formatting reduces storage cost and energy consumption). However it is not necessarily clear that all content owners will have a strategy for Chile, especially if they don't license their content for the country.

Given that contract complaints are a leading issue, it begs the question why the regulator does not focus more on transparency requirements. Such an approach was taken by the Swedish regulator (PTS) in 2009, establishing guidelines in 2009<sup>52</sup> in lieu of making a net neutrality law. In the Swedish perspective, net neutrality is about ensuring transparency in pricing, service offerings, network quality, as well as upstream and downstream capacity so that consumers are clear in what they purchase and can easily switch providers. PTS claims its consumer-centric, light-touch approach is successful and has improved operating norms so much that adopting to the EU's new solution is a step backward.<sup>53</sup>

In a recent presentation<sup>54</sup> to the Body of European Regulators for Electronic Communications (BEREC), Subtel chair Huichalaf declared that zero rating is attractive from the point of view of users. However he believes that the regulator still has a role to decide whether such offers should be allowed.

## Netherlands

The Netherlands is recognized by the OECD as the world's most competitive broadband market for the number of multiple broadband facilities available.<sup>55</sup> On account being the world's flattest and most densely populated country, there are nearly two wired infrastructures (copper and cable) to every residence, three mobile networks (and a fourth under construction), resellers on top of the copper infrastructure; and dozens of virtual mobile providers. Fiber is available in some cities as well. It is counterintuitive that net neutrality laws should be so strict, for if ever a market existed where consumers could switch if they didn't like their provider, it is the Netherlands.

Since adopting the net neutrality law, a number of financial indicators reveal a worsening situation for Dutch telecoms, though a number of trends were already in play well before the law, including declining voice revenue and service revenue growth. The Netherlands is a saturated market in both fixed and mobile. Growth of subscribers is flat in fixed. In mobile, it has been declining since 2011 when it had a high of 105% and has fallen below 100%. There are no new customers for operators; the only possibility is to poach each other's customers. Frequently this can mean a race to the bottom. The monthly churn rate for the industry is 2.5%, relatively high for a postpaid market. This indicates that customers can and do change providers.

---

<sup>51</sup> "Sandvine - Global Internet Phenomena - Latin American Report May 2015," Sandvine, (May 2015), <https://www.sandvine.com/trends/global-internet-phenomena/>.

<sup>52</sup> Post-och Telestyrelsen (PTS), "Nätneutralitet", <http://www.pts.se/sv/Bransch/Internet/Oppenhet-till-internet/>

<sup>53</sup> ETNO, "Ola Bergström, Director at Swedish Post and Telecom Authority - PTS, Gives an Interview at ETNO-MLex Summit 2014," viEUws, July 7, 2014, [www.vieuws.eu/etno/etno-etno-mlex-summit-2014-interview-with-ola-bergstrom-director-for-international-affairs-swedish-post-and-telecom-authority-pts/](http://www.vieuws.eu/etno/etno-etno-mlex-summit-2014-interview-with-ola-bergstrom-director-for-international-affairs-swedish-post-and-telecom-authority-pts/)

<sup>54</sup> Pedro Huichalaf, "Neutralidad de La Red: Explorando El Impacto En REGULATEL," *Gobierno de Chile*, July 2015, <http://berec.europa.eu/files/doc/4.%20PPT-%20CHILE%20-%20REGULATEL%20-%20BCN.pdf>

<sup>55</sup> See section 3 on Coverage and Geography. "OECD Broadband Portal," July 23, 2015, <http://www.oecd.org/sti/broadband/oecdbroadbandportal.htm>.

Nevertheless financial results reveal that costs are managed prudently. To maintain profitability in a strict regulatory environment where new business models are not allowed, the only recourse is to lay off workers. In 2014, KPN laid off 2000 in the consumer branch and another 500 in the corporate.<sup>56</sup> This follows other cuts in recent years across the industry.

Net neutrality advocacy organization Bits of Freedom has been instrumental to bring attention to net neutrality.<sup>57</sup> Though they had conducted campaigns for a number of years on the topic, they found little interest with the general public. However a statement from a KPN executive, suggesting that the company would charge users to access WhatsApp, catapulted Bits of Freedom (BoF)'s efforts to center stage. In addition to viral take-up of the issue in the media, the stakeholders BoF had cultivated, including key parliamentary sponsors, allowed the organization, in just two months, to push through the legislation it had created. There was no hearing of mobile operators or investigation of traffic management. The Law was promulgated in 2012 and came into force the following year.

The Dutch Parliament had been revising its Telecommunication Act during this period, and BoF found support among a number of Parliamentarians. It also provided the lawmakers with a proposed text for the law<sup>58</sup> as well as position papers developed under the support of the Council of Europe (an agency empowered to protect human rights) to support the legislation.<sup>59</sup> Encouraging Dutch innovation in internet services and applications was a reason given to support net neutrality.

From the operators' side, the uptake of the free SMS applications in lieu of proprietary services materially affected revenue. KPN, for one, was not prepared for the shift. For the first time in many quarters, the company issued a profit warning.

In its quarterly announcement, it noted a large drop in SMS revenue in Q1 of 2011 and lowered EBITA projections by €200 million euros from the prior year. KPN also noted that to lower costs, it would lay off 25% of its Dutch workforce, about 4000-5000 employees.<sup>60</sup> Before making the suggestion of charging for WhatsApp, KPN obtained permission from the Dutch telecom regulator OPTA.<sup>61</sup> The regulator approved the offer and noted, "This means more choice for consumers, which allows subscriptions can take better suited to use. We therefore welcome such a development, on condition that the provider is transparent about the cost."<sup>62</sup>

What is frequently described as a predatory situation between operators and third party applications, might also be viewed as operators having the wrong business model in a time of change. Until 2010, data consumption on mobile devices was limited in the Netherlands, and the price reflected that users did not demand it very much. But with smartphones and emerging online services, consumers started to shift their consumption. This came at a time where the prevailing terminating regime in the caller

---

<sup>56</sup> Janene Van Jaarsveldt, "KPN to Cut 580 Jobs," *NL Times*, December 10, 2014, <http://www.nltimes.nl/2014/12/10/kpn-cut-580-jobs/>.

<sup>57</sup> Roslyn Layton, "Net Neutrality in the Netherlands: Dutch Solution or Dutch Disease?," 24th European Regional ITS Conference, Florence 2013 (International Telecommunications Society (ITS), 2013), <http://econpapers.repec.org/paper/zbwitse13/88488.htm>.

<sup>58</sup> Matthijs van Bergen, intern at Bits of Freedom "played a consulting role in the establishment of net neutrality legislation in the Netherlands." <https://www.linkedin.com/in/matthijsvanbergen>

<sup>59</sup> "Protecting Human Rights through Network Neutrality: Furthering Internet Users' Interest, Modernising Human Rights and Safeguarding the Open Internet" (Steering Committee on Media and Information Society (CDMSI), December 3, 2013), [http://www.coe.int/t/dghl/standardsetting/media/CDMSI/CDMSI\(2013\)Misc19\\_en.pdf](http://www.coe.int/t/dghl/standardsetting/media/CDMSI/CDMSI(2013)Misc19_en.pdf).

<sup>60</sup> "2011 EBITDA Outlook Adjusted Downwards, Free Cash Flow Confirmed," KPN, (April 21, 2011), <http://corporate.kpn.com/press/2011-ebitda-outlook-adjusted-downwards-free-cash-flow-confirmed.htm>. Hear KPN CEO Elco Blok <http://nos.nl/audio/234661-ontwikkelingen-hebben-negatieve-invloed-op-omzet.html>

<sup>61</sup> OPTA is the Dutch Post and Telecommunications Authority, the now closed Dutch telecom regulator. It was subsumed into ACM (Consumer and Market Authority) in early 2013

<sup>62</sup> Arnoud Wokke, "KPN: 'Chatheffing' Voor Mobiel Internet Komt Deze Zomer," *Tweakers*, (April 21, 2011), <http://tweakers.net/nieuws/74017/kpn-chatheffing-voor-mobiel-internet-komt-deze-zomer.html>.



pays, both increased the price of voice and SMS, but also created an incentive for off-net termination.<sup>63</sup>

It is important to note that WhatsApp has remained in the top position as the most popular messaging app in the Netherlands for years. No operator or competitor has succeeded to impact its position.

Once the law came into effect, there were no reports of net neutrality violations for some time.<sup>64</sup> One view is that the law was working to deter violations. On the other hand, it be embarrassing politically if no violations occur, for it may appear that the law was made too hastily. As such, there could be political pressure to find a problem to justify the law *ex post*.

In January 2013 the new telecom regulator, now rationalized in the Dutch Consumer and Market Authority (ACM) commissioned a study<sup>65</sup> of over-the-top (OTT) services. Rather than prohibiting the development of third party applications and services, operators facilitate OTT services through their provision of mobile broadband. Increasingly consumers use these services. It also noted the declining power of mobile operators, specifically, "On sales level we see a shift from KPN to cable and a parallel of shifting market shares. Mobile data market is the engine of growth, with WiFi as a substitute for mobile or mobile data. The mobile service revenue and ARPU show a slight downward trend."<sup>66</sup>

Meanwhile in Brussels, the European Parliament passed a net neutrality resolution on April 3, 2014. The Alliance for Liberal Democrats for Europe (ALDE) drove its passage with Dutch Member of Parliament Marietje Schaake.<sup>67</sup> She celebrated the passage on the website of D66, the Dutch Democratic Party, noting "Conversely, Europe must also ensure that Internet and communication technologies are regulated too. More and more countries and the UN are working on laws and regulations to enhance the control of governments."<sup>68</sup> Though the Parliament's resolution requires the agreement of the European Commission and the Council of Ministers (head of state of the EU member nations) to become law,<sup>69</sup> the resolution triggered the Dutch to strengthen the interpretation of their net neutrality law, specifically to eliminate exceptions for zero rating.

The Dutch Ministry of Economic Affairs started a process to discuss how the net neutrality law should be interpreted, how strict it should be, and what to do about the practice zero rating, called "loose" or stand-alone services. A consultation was held in May 2014.<sup>70</sup> Among the 30 respondents was Netflix,<sup>71</sup> which just a few months before, signed on as

---

<sup>63</sup> An important point to underscore for the US is that having a termination in which both sides paid reduced any incentive to block VOIP and SMS applications on smartphones.

<sup>64</sup> There was on complaint about T-Mobile throttling wifi on trains. ACM ruled that it is acceptable for T-Mobile to manage its networks for congestion. Peer to peer and file sharing applications create a lot of traffic and this harms other applications, especially on a train where 2G/3G service is offered. The moving trains also makes the connection difficult. Managing the traffic is acceptable in this circumstance. "Correspondentie Afsluiten onderzoek 'T-Mobile HotSpot in de trein' | ACM.nl," Correspondentie, (December 30, 2013), <https://www.acm.nl/nl/publicaties/publicatie/12508/Afsluiten-onderzoek-T-Mobile-HotSpot-in-de-trein/>.

"Nieuwsbericht T-Mobile mag gratis internet in NS-treinen beperken," Nieuwsbericht, (December 30, 2013), <https://www.acm.nl/nl/publicaties/publicatie/12507/T-Mobile-mag-gratis-internet-in-NS-treinen-beperken/>.

<sup>65</sup> "Onderzoek Overzicht markt voor over-the-top diensten Nederland - januari 2013 (Telecompaper) | ACM.nl," Onderzoek, (July 23, 2013), <https://www.acm.nl/nl/publicaties/publicatie/11717/Overzicht-markt-voor-over-the-top-diensten---Nederland---januari-2013-Telecompaper/>.

<sup>66</sup> Ibid

<sup>67</sup> Marietje Schaake, "Europees Parlement Steunt Voorstel Schaake Voor Netneutraliteit in Europese Wet," D66, April 3, 2014, <https://d66.nl/europees-parlement-steunt-voorstel-schaake-voor-netneutraliteit-europese-wet/>.

<sup>68</sup> "Digitale Vrijheid Prioriteit in EU-Buitenlandbeleid - Doe Mee, Word Lid!," D66, November 7, 2014, <https://d66.nl/ep-commissie-steunt-d66-digitale-vrijheid-prioriteit-in-eu-buitenlandbeleid/>.

<sup>69</sup> This was ultimately resolved on June 30, 2015 with rules coming into force on April 30, 2016. "Commission Welcomes Agreement to End Roaming Charges and to Guarantee an Open Internet," *European Commission*, June 30, 2015, [http://europa.eu/rapid/press-release\\_IP-15-5265\\_en.htm](http://europa.eu/rapid/press-release_IP-15-5265_en.htm).

<sup>70</sup> "Consultatie Beleidsregel netneutraliteit," consultatie, (May 2, 2014), <http://www.internetconsultatie.nl/netneutraliteit>.

<sup>71</sup> "Consultatie Beleidsregel netneutraliteit, reactie," webpagina, (May 28, 2014), <http://www.internetconsultatie.nl/netneutraliteit/reactie/71331718-03d9-43be-9d87-43d2cdf1355>.

the first customer in the New York office of the Amsterdam Internet Exchange<sup>72</sup> (The company has since moved its European headquarters to Amsterdam and plans to use the location to help grow its business in the Middle East and Africa.<sup>73</sup>) Netflix commended the Ministry's efforts, supported a strict policy against zero rating, noted that net neutrality stimulates innovation, and suggested a broad interpretation of net neutrality, effectively ensuring that consumers increasingly choose flat rate packages. The outcome of the consultation is strict version of net neutrality with a strict interpretation which the regulator must enforce.<sup>74</sup> Interestingly Netflix is zero rated in Australia as part of its partnership with fixed lined operator iiNet.<sup>75</sup> The company calls the introduction of Netflix to the Australian market a game changer.<sup>76</sup>

On June 5, 2014 in "Net neutrality the work in progress"<sup>77</sup> Bits of Freedom described the process conducted by the Ministry of Economic Affairs to clarify ambiguities in the Dutch net neutrality law. It criticized Facebook, Vodafone, RTL, and Endless Spotify<sup>78</sup>, a zero rated program offered by Hi, a virtual mobile provider (owned by KPN) offering discount services focused on the youth market. The blog refers to an article<sup>79</sup> mentioning the Vodafone's Sizz<sup>80</sup> and T-Mobile's Deezer. The article includes a quotation from the Dutch regulator, calling Endless Spotify a "stand alone service", meaning that purchase of the subscription is not tied to the purchase of a data package, therefore it does not violate net neutrality.<sup>81</sup>

It notes that such stand-alone services are by "allowed by the letter of the law, but runs counter to the intent of the law. Positive discrimination is discrimination. The ACM sees no problem." BoF continues, "We thought about whether other Internet areas must meet the same kind of neutrality values. Some claim that 'soft neutrality' is not enough and that efforts should be made for 'hard neutrality', including peering and transit. And what about search? Or application stores? Another response to the consultation argued that the rules should also apply to the provision of IPv4 and IPv6."

For the week of September 20, 2014 BoF notes on its blog,<sup>82</sup> "We were visiting the ACM to discuss net neutrality and its enforcement. We began our analysis of the law in the Netherlands; very interesting in light of the upcoming European law<sup>83</sup> and the current debate in the US."<sup>84</sup>

Some two years after the Dutch net neutrality law took effect, ACM fined two operators for violations. Vodafone had only 3200 customers on its HBO Go app, was fined €200,000, and was ordered to end the offer. It is likely that the fine is more than the company earned on the service.

---

<sup>72</sup> "Netflix Signs On To New York Open Internet Exchange," *Amsterdam Internet Exchange*, December 2, 2013, <https://ams-ix.net/newsitems/124>.

<sup>73</sup> <http://www.iamsterdam.com/en/business/invest/business-news/netflix-officially-opens-european-headquarters-in-amsterdam>

<sup>74</sup> "Besluit van de Minister van Economische Zaken van 11 mei 2015, nr. WJZ/15062267, houdende beleidsregel inzake de toepassing door de Autoriteit Consument en Markt van artikel 7.4a van de Telecommunicatiewet (Beleidsregel netneutraliteit)," officiële publicatie, *officielebekendmakingen*, (May 15, 2015), <https://zoek.officielebekendmakingen.nl/stcrt-2015-13478.html>.

<sup>75</sup> <https://gigaom.com/2015/03/02/netflix-wont-count-against-iinet-broadband-caps-in-australia/>

<sup>76</sup> <http://www.iinet.net.au/about/mediacentre/releases/2015-03-03-quota-free-netflix.html>

<sup>77</sup> Floris Kreiken, "Netneutraliteit Blijft Work-in-Progress," *Bits Of Freedom*, June 5, 2014, <https://www.bof.nl/2014/06/05/netneutraliteit-blijft-work-in-progress/>.

<sup>78</sup> "Hi Introduceert Eindeloos Spotify: Onbeperkt Muziek Streamen Op Je Mobiel Zonder Dat Dit MB's Kost," KPN, (January 6, 2014), <http://corporate.kpn.com/pers/persberichten/hi-introduceert-eindeloos-spotify-onbeperkt-muziek-streamen-op-je-mobiel-zonder-dat-dit-mbs-kost.htm>.

<sup>79</sup> Arnoud Wokke, "Hi Haalt Verbruik Spotify-App Niet Meer van Databundel Af," *Tweakers*, January 6, 2014, <http://tweakers.net/nieuws/93502/hi-haalt-verbruik-spotify-app-niet-meer-van-databundel-af.html>.

<sup>80</sup> Andreas Udo de Haes, "Vodafone En T-Mobile Schenden Netneutraliteit," *Webwereld*, June 17, 2013, <http://webwereld.nl/netwerken/78147-vodafone-en-t-mobile-schenden-netneutraliteit>.

<sup>81</sup> The price to the user is the same whether he buys the subscription from Spotify or Hi, but in the latter, the data use is not charged to the subscription.

<sup>82</sup> Door Tim Toornvliet, "De Week in 417 Woorden," *Bits of Freedom*, September 20, 2014, <https://www.bof.nl/2014/09/20/de-week-in-417-woorden/>.

<sup>83</sup> Link in article points to <https://www.bof.nl/2014/04/03/persbericht-netneutraliteit/>

<sup>84</sup> Link in article points to "ISPs Mislead Public, FCC About Protecting the Open Internet," *Electronic Frontier Foundation*, September 15, 2014, <https://www.eff.org/press/releases/isps-mislead-public-fcc-about-protecting-open-internet>.

KPN was fined €250,000 for what amounted to blocking on a free wifi network. The company admitted its mistake, a setting that had been on place its wifi networks, which it forgot to update once the net neutrality rules came into effect. About one third of the wifi traffic was at Schiphol Airport and the free service was designed as a convenience for travelers for a short and quick internet connection upon landing, for example to check messages and email. Bittorrent, FTP, SSHA, Telnet and VoIP were blocked to ensure the smooth functioning of the free service. The blocks are now removed but presumably the free basic internet service doesn't run as well. Interestingly a number of comments under the BoF blog mention that they have 4G services so wifi not important to them anyway.

In May 2015 KPN was ordered to end zero rated Spotify contracts, though the traffic generated by Spotify traffic is negligible on KPN networks. It is interesting to note that while zero rated offers of Spotify may be maligned by net neutrality advocates, for Spotify, one of only a handful of successful European startups, the partnership with telecom operators has proven important for its growth.<sup>85</sup> Not only can Spotify leverage an operator's billing system (avoid the cost of using its own system and give customers the benefit of not having to enter payment credentials into a new system), Spotify earns valuable paying customer. Most free users of Spotify never upgrade to the premium version, but in a telco partnership, subscribers who are already paying for a mobile subscription are more willing to take on an additional paid service because of the convenience of the bundle.

Not only is the sale of premium subscriptions essential for Spotify's survival, the revenue earned plays an important role to lessen music piracy and to help bring revenue to the music industry. Sweden's music industry was decimated by the rise of digital music on the Internet; revenues declined steadily from 2002 to 2009. With the introduction of Spotify, however, the industry has managed a 20% gain in the last three years.<sup>86</sup>

The Netherlands fared even worse with its traditional music industry than Sweden, but Spotify helped to reduce piracy in the country, with 29% of the 1.8 million Dutch BitTorrent pirates taking just 1 music file in 2012. The top 10% of the pirates account for half of the content obtained illegally, some 16 files each or more.<sup>87</sup> Passive pirates don't bother to pirate material when then can get a reliable, quality music experience for a good price.

In Sweden, digital music revenues account for almost 60% of all music industry revenue. In Netherlands the amount is just 27%, but if it could increase to the level of Sweden, ideally with more uptake of services such as Spotify, there would be an additional \$124 million for the music industry and musicians. In any case, digital music sales grew by increased by 66% in the country in 2012, the highest of any country in Western Europe.<sup>88</sup>

While music piracy may be on the wane as a number of viable music streaming alternatives have emerged, piracy of film is going strong. Having more Spotify-like solutions for film is preferable to criminalizing pirates. And yet HBO Go, one such solution, is maligned by net neutrality advocates.

In a statement on June 1, 2015, the ACM praised the state of Dutch 4G networks and increased mobile data consumption. They note,<sup>89</sup>

---

<sup>85</sup> "Adventures in the Netherlands:" (Spotify, July 17, 2013), <https://press.spotify.com/dk/2013/07/17/adventures-in-netherlands/>.

<sup>86</sup> Ibid p. 9

<sup>87</sup> Ibid p. 1

<sup>88</sup> Ibid p. 24

<sup>89</sup> "Investeringsen uitrol 4G bijna voltooid, apps besparen op dataverbruik," Nieuwsbericht, ACM, (June 1, 2015), <https://www.acm.nl/nl/publicaties/publicatie/14305/Investeringsen-uitrol-4G-bijna-voltooid-apps-besparen-op-dataverbruik/>.



After Mobile operators' investment to roll out 4G is almost complete. After a peak of investment in 2013 of €2 billion, the investment in 2014 fell back to more than € 800 million. Henk Don, board ACM: "With the introduction of 4G has paved the way for fast internet on your smartphone. And there are many uses. The consumption of mobile data is doubled. "This is attributable to approximately 4 million consumers who are relatively common and many Internet via their phone. For example, to stream movies or music. The number of customers using 4G also doubled in a year to about 40 percent. What is evident from the Telecom Monitor is that the rapid growth of data consumption is leveling off.

The net neutrality law that was supposed to be a "silver bullet" has created new problems.<sup>90</sup> Instead of a flowering of local content and services, the Netherlands experiences the "Netflix effect"<sup>91</sup> in which a single American company consumes twenty percent of the country's bandwidth with a small subset of users. Netflix is one of the most downloaded apps in the Dutch Google Play store. Its competitor HBO Go which was ultimately impacted in the net neutrality debate is far from a threat, sitting in the long tail distribution.

As for innovation in Dutch mobile services and applications in August 2015, only two Dutch apps feature in the top 25; Marktplaats, the second hand marketplace and Buienradar for the weather. In the Google Play Store they are #12 and #13 respectively and in the Apple App Store, #18 and #19. The flowering of Dutch content and innovation has not occurred since the implementation of the country's net neutrality law.

## Slovenia

Zero rating, called free data transfer in Slovenia, was a common practice among operators and existed in country since 2007. Consumers could choose from a number of zero rating programs, including free access to music, online storage, and customer service applications to manage their mobile subscriptions. The net neutrality law in Slovenia was created primarily about concerns of theoretical harms and was the culmination of more than a year of public proceedings<sup>92</sup>, but did not include an official investigation of traffic management practices.<sup>93</sup> A line about price differentiation was removed in the final version of the law which was promulgated on December 31, 2012.<sup>94</sup> This omission appears to be a linchpin for the legal battle on zero rating going forward.

To understand the sequence of events, a personal interview<sup>95</sup> was conducted with Dr. Dusan Caf, a leading net neutrality advocate who has been instrumental to effecting a ban on zero rating in Slovenia.<sup>96</sup>

---

<sup>90</sup> Ibid

<sup>91</sup> van Eijk, Nico, *The Proof of the Pudding Is in the Eating: Net Neutrality in Practice, the Dutch Example*, SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, August 2, 2014), <http://papers.ssrn.com/abstract=2417933>.

<sup>92</sup> Posvet v Zvezi Z Osnutkom Predloga Novega Zakona O Elektronskih Komunikacijah, "Ministrstvo Za Visoko Šolstvo, Znanost in Tehnologijo, November 10, 2011, [http://www.arhiv.mvzt.gov.si/si/delovna\\_podrocja/informacijska\\_druzba/elektronske\\_komunikacije\\_in\\_posta/javne\\_obravnavne\\_predlogi/arhiv/](http://www.arhiv.mvzt.gov.si/si/delovna_podrocja/informacijska_druzba/elektronske_komunikacije_in_posta/javne_obravnavne_predlogi/arhiv/).

<sup>93</sup> "I am afraid that there wasn't any comprehensive analysis carried out (related to net neutrality) prior to the adoption of the current electronic communications law and net neutrality provisions - neither by the NRA nor the ministry," notes Dusan Caf in an email August 9, 2015.

<sup>94</sup> Article 203 of the Electronic Communications Act (Official Gazette of the Republic of Slovenia, Nr. 109/12, 110/13, 40/14 - ZIN-B and 54/14 - CC dec.)

<sup>95</sup> Telephone Interview August 7, 2015

<sup>96</sup> "Pripombe Na Osnutek Predlog Zakona O Elektronskih Komunikacij," *Svet ZA Elektronske Komunikacije*, July 5, 2012, <http://www.sek-rs.si/1/Aktualno/tabid/107/ID/3/Pripombe-na-osnutek-predlog-Zakona-o-elektronskih-komunikacij-ZEKom-1.aspx#.Vc4MNa1J24B>.

"Pripombe Na Predlog Zakona O Elektronskih Komunikacijah (ZEKom-1) - EPA: 667 - VI > SEK," *Svet ZA Elektronske Komunikacije*, November 18, 2012, <http://www.sek-rs.si/1/Aktualno/tabid/107/ID/275/Pripombe-na-predlog-Zakona-o-elektronskih-komunikacijah-ZEKom-1--EPA-667--VI.aspx#.Vc4MnK1J24B>.

"Predlog Amandmajev K Predlogu Zakona O Elektronskih Komunikacijah (ZEKom-1, Druga Obravnava, EPA 667 - VI) > SEK," *Svet ZA Elektronske Komunikacije*, December 20, 2012, <http://www.sek-rs.si/1/Aktualno/tabid/107/ID/274/Predlog-amandmajev-k-predlogu-Zakona-o-elektronskih-komunikacijah-ZEKom-1-druga-obravnavna-EPA-667--VI.aspx#.Vc4M8a1J24B>.

Caf holds two key positions<sup>97</sup> in telecommunications, one as Chair of the Electronic Communications Council (a body appointed by the National Assembly) and another as Chair of the Council of the Agency for Communications Networks and services of the Republic of Slovenia (AKOS, the telecom regulator).<sup>98</sup> An engineer by training, Caf has been a consultant to a number of telecom and IT companies in Slovenia, though he assures that his honorary positions are not a conflict of interest, and if they were, he would exclude himself from voting.<sup>99</sup>

In a blog<sup>100</sup> on December 9, 2013 Caf decried the state of the Slovenian telecom market 15 years after liberalization. The media is a poor observer, and the debate as lacking depth, he wrote. "Professional analysis" is needed to explain the gap, and "Captured regulators" are the root of the problem, he declared. To address these problems, he proposed increasing the transparency of the regulatory process, strengthening the efficiency and effectiveness of regulation, strengthening the development of electronic communications, and improving the wellbeing of citizens.

Caf called Slovenia's net neutrality law strict, but not being implemented prior to 2015. The problem with zero rating emerged with mobile broadband prices being too low. He cited the offer of €25 for 1 GB of data and €30 for 100 GB. Caf called these offers "good for consumers in the short run, but not sustainable in the long run" and believed that they needed to be stopped. "This is not a two-sided market," he said.

Caf does not know whether consumers complained about the offers to the regulator. His organization is not privy to such complaints. They only learn what is published by the telecom regulator or the competition authority. However one person did complain to the SEK, that he wanted to use his account balance to choose which sites should be zero rated.

On June 22, 2014 Caf published a blog<sup>101</sup> titled "Free download mobile content jeopardizes the neutrality of the Internet" critiquing the zero rating offers of Telekom Slovenia and Si.mobil which "unduly encourage (users) to procure their services or applications and their partners, because of the high price of data transfer but they complicate the selection and use of competing products." Caf also notes, "Mere legal protection of net neutrality is not enough. It is important that AKOS enforce the regulatory principles" and that the SEK discusses the situation at its June meeting, he notes. Caf said that he made a point to write in English to bring international attention to the issue in Slovenia

On behalf of SEK on July 17, 2014, Caf made a formal complaint about zero rating to the telecom regulator, but did not receive a response. He believed that the regulator was reluctant to make a ruling on zero rating.

---

<sup>97</sup> "Dusan Caf to Head Slovenian Regulator - Report," *Telecompaper*, January 14, 2014, <http://www.telecompaper.com/news/dusan-caf-to-head-slovenian-regulator-report--993155>.

<sup>98</sup> The Agency Council is authorised to give opinions to the programme of work, the financial plan and the annual report of AKOS; approve the statute adopted by the Agency Director; propose the appointment or dismissal of the Agency Director; propose a temporary prohibition on the performance of functions by the Director; propose the early dismissal of members of the Agency Council. The Members of the Agency Council or persons authorised by the Agency Council may inspect the business accounts as defined in the Slovenian Accounting Standards and the AKOS' accounting documents. Upon every such request by the Agency, the Agency director must submit to the Council a report on the operations of the Agency and any other information that the Agency Council requires in order to carry out its functions. The Agency Council may suggest improvements in the operation of the Agency to the Agency director, as well as point out to him any irregularities in the AKOS operations and notify the competent bodies of these irregularities. "Profile of AKOS," February 6, 2014, [http://epra3-production.s3.amazonaws.com/organisations/documents/30/original/Profile\\_AKOS\\_SI\\_02\\_2014\\_final.pdf?1391706889](http://epra3-production.s3.amazonaws.com/organisations/documents/30/original/Profile_AKOS_SI_02_2014_final.pdf?1391706889).

<sup>99</sup> Ales Percic, "Neuradno: Na Čelo Sveta Akosa Dušan Caf," *Finance.si*, January 29, 2014, <http://www.finance.si/8355990/Neuradno-Na-%C4%8Delo-sveta-Akosa-Du%C5%A1an-Caf>.

<sup>100</sup> "Competitive Analysis & Foresight: Ugrabljeni Regulatorji," *CAF*, December 9, 2013, <http://blog.caf.si/2013/12/ugrabljeni-regulatorji.html>.

<sup>101</sup> "Competitive Analysis & Foresight: Brezplačen Prenos Vsebine Ogroža Nevtralnost Mobilnega Interneta," *Competitive Analysis & Foresight*, (June 22, 2014), <http://blog.caf.si/2014/06/brezplacen-prenos-vsebine-ogroza-nevtralnost-mobilnega-interneta.html>.

Caf said he made a point to mention only Telekom Slovenia and Si.Mobil in his complaint. He did not want to implicate the smaller providers Tusmobil and Amis because they need zero rating offers to differentiate themselves in the marketplace. The complaint describes that Telecom Slovenia's unlimited data transfer offers the ability to view the matches of the UEFA Champions League, watch films HBO GO, and access proprietary online storage. Telecom's own service "discriminates against end users using competing products", notes the complaint.

The complaint is critical of Si.Mobil's unrestricted offer to view the World Cup and unlimited access to the VOYO content over a two year period. It claims that free video data is problematic because it is a fastest growing category of service and makes up the bulk of internet traffic, and that offers with unmetered traffic exceed the amount of data used on basic packages. Moreover operators are offering unmetered service to the exclusive content they have licensed but not giving the same conditions to competing content. It is described as discriminatory to users because they have to use metered access to enjoy competing services on the same platform. The letter states that operators are violating Slovenia's net neutrality rules and that Telecom Slovenia is abusing its dominant position in the marketplace.

Caf regrets that, in the end, the regulator punished the smaller providers by ordering them to stop all their zero rated practices, while the incumbent received a lighter reprimand. Telekom Slovenia was required only to end the zero rated music service for Deezer, but was allowed to keep zero rating its proprietary video application. That the smaller operators received a tougher punishment supports Caf's assertion that the telecom regulator favors the state-owned Telekom Slovenia.

Concurrently Caf sent the complaint to the Slovenia Competition Protection Agency, which did reply on September 4, 2014.<sup>102</sup> They recognized the concerns about discriminatory traffic management, but note that the risk is significantly lower in a transparent and competitive environment. Net neutrality puts emphasis on the requirement that operators transparently disclose their practices regarding managing internet traffic. In a transparent environment, consumers, if unhappy with traffic management practices, can switch providers. They observe that differentiated offerings are important because they are

. . . the fruit of competitive advantages and therefore increase efficiency and bring consumers the benefits (i.e. cheaper cinema tickets for students). Thus price discrimination increases the availability of the product to more cost-sensitive consumers and ensures an overall increase in sales volume, thereby lowering average the overall costs and increasing efficiency. The boundary between pro-competitive and anti-competitive conduct can be thin, so borderline cases should be assessed. But intervention is necessary only in cases where economic analysis shows that the injury to the consumers outweigh the benefits to consumers.

The competition authority notes that Telekom Slovenia has not abused its market power. It could be tested with an in-depth investigation that would begin with defining the relevant market, in this case the market for data transfer. It notes that Slovenia is a market with at least three mobile providers which will evolve significantly in the coming years. It notes that the market for mobile services is primarily characterized by call services, and with the different prices for calls on and off net, the effect of data transfer services is negligible. Moreover, even though Telekom Slovenia has a 50 percent market

---

<sup>102</sup> A copy of the reply is not available on the authority's website, however it is referenced in the EU Scoreboard document on the link for Slovenia. "Scoreboard 2015 - Report on the Implementation of the Telecommunications Regulatory Package (per Country)," *Digital Agenda for Europe*, June 19, 2015, <http://digital-agenda/en/news/scoreboard-2015-report-implementation-telecommunications-regulatory-package-country>.

share and falling, it does not have the power to control the market for Internet applications, even with its zero rated offer. It notes,

Vertical relationships can be bring benefits to consumers. For example, by offering free Internet encourages Telecom Slovenia to invest in expensive exclusive content such as UEFA Champions League. Si.mobil might not have invested EUR 60 million in the acquisition of spectrum if it expected that it would be not be able to grow the market for newly built broadband 'highways' through various campaigns for free use of data transmission.

It notes further that sports rights and copyrighted content when licensed to a buyer (e.g. Telecom Slovenia) and offered in a zero rated program do not constitute a violation of competition. Moreover the operator's offer of Deezer and a proprietary cloud service does not harm the market for such services, as there are many choices worldwide from which users can access.

As for the price of the offer, the competition authority notes that the operator does not engage in either improving the quality of the zero rated products or degrading other applications, but rather in a form of discount or positive discrimination. To assess this, it is necessary to examine the price and costs of the offer and the services contained within. It observes that the voice is the largest cost driver and that the use of Deezer is negligible, amounting to a few cents out of an offer of €26 per month.

The competition authority notes that the emergence of zero rating reflects fierce competition in the mobile marketplace and even with current limits, consumers still have the freedom to decide what kind of content they want.

It notes further that the net neutrality rules are designed to protect competition for the purpose of the benefit of consumers. It is therefore necessary to determine the effect of zero rating on consumers. No intervention should be made if there is no evidence of consumer harm. The competition authority describes situations in which it considers extreme and necessary for intervention, for example the Microsoft browser case, but the zero rating issue in Slovenia is not one. The authority made a point as well that critics consider the Dutch net neutrality too extreme because operators are restricted from making offers.

Caf rejected the competition authority's conclusion, in particular because it made an analysis based on mobile prices from 2012. However if 2014 prices were used, the impact of zero rating would likely be even smaller because prices have fallen in the period.

Caf worked with the country's leading newspaper to bring attention to the issue. On November 12 an article<sup>103</sup> appeared in the newspaper *Delo* (English: Labour) by Matjaž Ropret<sup>104</sup> introducing the topic of zero rating as problematic and reporting on developments in the USA. The article concludes with a screen shot of Frank Underwood of Netflix's "House of Cards" with the caption "You need the gatekeeper." Underneath the photo is the caption "Providers such as Netflix in the US have paid operators for smooth transfer of content to subscribers."

The article links to another article that appeared in *Delo* from Slovenian correspondents in the US titled "Political cuisine on the future of the Internet: White House asks independent telecom commission for the Internet be declared a public service, which is

---

<sup>103</sup> Matjaz Ropret, "Izmuzljiva Internetna Nevtralnost," *Infoteh*, November 12, 2014, <http://www.delo.si/mnenja/blogi/izmuzljiva-internetna-nevtralnost.html>.

<sup>104</sup> Matjaz Ropret, "Tehnokamra – Internetna Nevtralnost," *Delo*, November 14, 2014, <http://www.delo.si/multimedija/video/tehnokamra-internetna-nevtralnost.html>.

controlled by the state.”<sup>105</sup> The article describes President Obama’s net neutrality announcement and some political background in the US. In a sidebar it notes that after ratifying its own net neutrality law two years earlier, Slovenia experienced its first complaint under the concept of zero rating.

On November 14, *Delo* published a short article<sup>106</sup> embedded with a video<sup>107</sup> highlighting Barack Obama’s previous net neutrality announcement<sup>108</sup> followed by a presentation by Dusan Caf and *Delo* tech journalists Matjaž Ropret and Lenart J. Kučič<sup>109</sup> discussing the situation of net neutrality in Slovenia. During the discussion Caf produces a tablet where he points to a copy of the Slovenia net neutrality law and how the section on zero rating was removed as part of the final rulemaking.

A blog<sup>110</sup> by Caf on December 5 characterizes Slovenia as a country that has net neutrality rules but does not enforce them. It describes a country where “Net neutrality (is) weakened by industry lobbying and inactive regulator” and recounts how zero rating, originally included in the Slovenia rules was removed by “lobbying from the industry”. Caf also warns about the “spreading of discriminatory practices” and refers to a study of zero rated offers in the EU.<sup>111</sup> He notes that SEK sent a letter to AKOS describing the discriminatory practices of Telekom Slovenije but “based on the regulator’s strong pro-industry stance the outcome is uncertain.”

It is not clear whether from media pressure or international influence, but AKOS relented and commenced a review on zero rating on December 18. Soon after Caf appeared in an interview<sup>112</sup> in *Europolitics* in which the journalist questioned whether undue pressure has been put on the Slovenian telecom regulator. Caf notes that even though authorities pronounce zero rating beneficial to consumers, the practice is still problematic. “An efficient regulator is required in order that legislation adopted should really be implemented. However, I think it is important to resolve the matter of zero rating, and not to tie competition law on neutrality, since procedures and market analyses take too long,” he notes.

On January 10, 2015 *Delo* published an article<sup>113</sup> of some 2500 words explaining net neutrality by comparing the internet to the road network where all drivers have the same rights. Telecom operators are characterized as deploying sneaky business models such as zero rating. Dusan Caf’s efforts to end the practice are described.

A blog<sup>114</sup> from Caf appeared two days later in an attempt to increase the pressure on the telecom regulator to ban zero rating. He refers to the complaint SEK made to the regulator in July 2014 followed by “nearly three months of analysis, in which we analyzed the controversial business practice of mobile operators.” He notes that at the end of 2014 Telekom Slovenia had 50% market share and Si.Mobile 36%.

---

<sup>105</sup> Sebastijan Kopusar, “Politične Kuhinje O Prihodnosti Interneta,” *Delo*, November 12, 2014, <http://www.delo.si/znanje/infoteh/politice-kuhinje-o-prihodnosti-interneta.html>.

<sup>106</sup> Matjaz Ropret, “Tehnokamra – Internetna Nevtralnost,” *Delo*, (November 14, 2014), <http://www.delo.si/multimedija/video/tehnokamra-internetna-nevtralnost.html>.

<sup>107</sup> *Tehnokamra - Internetna Nevtralnost*, 2014, [https://www.youtube.com/watch?t=186&v=\\_PBaeuvDC\\_w](https://www.youtube.com/watch?t=186&v=_PBaeuvDC_w).

<sup>108</sup> Ezra Mechaber, “President Obama Urges FCC to Implement Stronger Net Neutrality Rules,” *The White House*, November 10, 2014, <http://www.whitehouse.gov/blog/2014/11/10/president-obama-urges-fcc-implement-stronger-net-neutrality-rules>.

<sup>109</sup> Lenart Kucic, “Lenart J. Kučič Blog,” accessed July 27, 2015, <http://www.lenartkucic.net/about/>. The journalist also writes books critiquing the media. Lenart Kucic, “Lenart J. Kučič’s Bibliography,” accessed July 27, 2015, <http://www.lenartkucic.net/bibliography/>.

<sup>110</sup> “Competitive Analysis & Foresight: Zero-Rating Violates Slovenian Net Neutrality Law,” *Competitive Analysis & Foresight*, December 5, 2014, <http://blog.caf.si/2014/12/zero-rating-violates-slovenian-net-neutrality-law.html>.

<sup>111</sup> “List of 75 Zero-Rated, Potentially Anti-Competitive Mobile Applications/services, Violating Net Neutrality, in EU28,” *DF Monitor*, October 2014, [http://dfmonitor.eu/insights/2014\\_oct\\_zerorate/](http://dfmonitor.eu/insights/2014_oct_zerorate/).

<sup>112</sup> Nathalie Steiwer, “Zero Rating: Slovenian Regulator Exposed to Excessive Pressure,” *Europolitics*, January 5, 2015, <http://europolitics.info/tech/zero-rating-slovenian-regulator-exposed-excessive-pressure>.

<sup>113</sup> Lenart Kucic, “Internet Nevtralen Kot Javno Cestno Omrežje?,” *Delo*, January 10, 2015,

<http://www.delo.si/sobotna/internet-nevtralen-kot-javno-cestno-omrezje.html>. See appendix for Google translated article

<sup>114</sup> “Competitive Analysis & Foresight: Nevtralnost Interneta vse Bolj Vroča,” *CAF*, January 12, 2015, <http://blog.caf.si/2015/01/nevtralnost-interneta-vse-bolj-vroca.html>.



On January 23, 2015 AKOS announced its decision,<sup>115</sup> finding Telekom Slovenia's zero rating of Deezer and Si.Mobil's zero-rated offering of the cloud platform Hangar Mapa to be net neutrality violations. An announcement in English followed on January 26, the only news story on the English language section of its website.<sup>116</sup> Telekom Slovenia's zero rating of UEFA Champions League, HBO GO, and the online storage TviN continues. In neither case did the regulator mention any evidence for harm to consumers or competition because of the offers.

On February 20, 2015 AKOS similarly found Amis Mobile with its proprietary TV service and Tasmobil with its customer service platform in violation of net neutrality.<sup>117</sup> The operators were required to end the banned practices in 60 days.

In response Caf posted a blog<sup>118</sup> celebrating the regulator's decision banning offers from Telekom Slovenia and Si.Mobil. He notes that SEK conducted an examination of the practices and that telecom regulators attended its meetings. He notes that the competition authority "issued the opinion after a consultation with AKOS in which regulators exchanged and shared views and information on net neutrality issues." He describes the competition authority opinion as "based on dubious facts and presumptions." He faults the competition protection authority for declining to begin an investigation.

Caf recounts his efforts to speed the regulatory process and enlighten senior officials whose views were "generalized and lacked thorough analysis". He recounts the steps that made the ban possible: his blogs and articles, his analysis indicating a potential breach of competition law, and the support of leading technology journalists. He reiterates his earlier blog of December 5 of why zero rating is a violation of the Slovenian net neutrality law. He notes that while the decisions only apply to music and cloud services, that they should also apply to video streaming. He notes that, "Consumers may shortly expect new data plans and enjoy open and non-discriminatory access to the internet."

Following the announcement of the banning of the zero-rated services of Tasmobil and Amis, Caf penned another blog.<sup>119</sup> While he was pleased with the action against the other operators, he called the allowance of zero rating by Telekom Slovenia "unacceptable and AKOS shall intervene as soon as possible. There is no legal ground in communications or media law for any exemption of internet streaming of sporting events or cloud storage traffic."

He notes that these "the decisions have already had a positive impact and, as we correctly predicted, consumers benefited from the regulator's net neutrality decisions. Telekom Slovenia and Si.mobile have both come up with special offers and packages with larger data caps or inexpensive data cap options. Consumers may shortly expect even more plans with larger data caps."

Caf describes the mobile market today as competitive, particularly because of price competition driven by American owned cable provider Telemach in their cross-selling of service from Tasmobil.

---

<sup>115</sup> "Akos Ugotovil Kršitve Načela Nevtralnosti Interneta," *Akos*, January 23, 2015, <http://www.akos-rs.si/akos-ugotovil-krsitve-nacela-nevtralnosti-interneta>.

<sup>116</sup> "AKOS Finds Violations of the Principle of Net Neutrality," *Akos*, January 26, 2015, <http://www.akos-rs.si/akos-finds-violations-of-the-principle-of-net-neutrality>.

<sup>117</sup> "Akos Ugotovil Kršitve Načela Nevtralnosti Interneta Tudi Pri Storitvah Amisa in Tušmobila," *Akos*, February 20, 2015, <http://www.akos-rs.si/akos-ugotovil-krsitve-nacela-nevtralnosti-interneta-tudi-pri-storitvah-amisa-in-tusmobila>.

<sup>118</sup> "Competitive Analysis & Foresight: Telekom Slovenije and Si.mobil Found in Breach of Net Neutrality," *Competitive Analysis & Foresight*, January 25, 2015, <http://blog.caf.si/2015/01/telekom-slovenije-and-simobil-found-in-breach-of-net-neutrality.html>.

<sup>119</sup> "Competitive Analysis & Foresight: Another Win for Net Neutrality Advocates in Slovenia: AKOS Issues New Decisions Limiting Zero-Rating," *Competitive Analysis & Foresight*, February 22, 2015, <http://blog.caf.si/2015/02/another-win-for-net-neutrality-advocates-in-slovenia-akos-issues-new-decisions-limiting-zero-rating.html>.

On June 27, 2015 an article<sup>120</sup> explores Caf's evolution from professor and consultant to the telecom industry and Chamber of Commerce to his most recognizable position as the leader of the Council for Electronic Communications. The same day two additional articles<sup>121 122</sup> appear on Caf and his accomplishments.

On July 1, 2015, the day after the EU's concluded agreement on net neutrality, Caf is interviewed<sup>123</sup> by Slovenian Radio and TV saying that Slovenia users are less protected, as the new EU rules "override" Slovenia's. The article notes a tweet from a Ministry of Education official who sees it differently, Slovenia "is (was) alone in demonstrating the principle is the wrong approach," he notes.

The European Union is the midst of an effort to create a Digital Single Market. One of goals of which is to strengthen European based small and medium enterprises (SME) on the Internet.<sup>124</sup> Once it took effect, AKOS's ban on zero rating caused traffic to certain Slovenian content and applications to fall by half. Operators' customer support centers saw a five-fold increase in telephone calls because subscribers could no longer top up their account balance online for free.<sup>125</sup> A Slovenian cloud provider experienced a marked, but not devastating, decline in traffic as a result of the ban.<sup>126</sup> To be sure, no content provider's marketing strategy relies entirely on zero rating.

Operators are appealing the regulator's decision on material and procedural grounds. They have also requested a constitutional review of the nation's communications law. Should the national court be unable to address the issue, it will be referred to the Court of Justice of the European Union. Operators argue that AKOS' decision contravenes BEREC's and EU's view on zero rating, which they call "sponsored connectivity" and a competitive practice. They charge that AKOS acted prematurely, given that pan-EU rules were still be considered. The current regulatory framework prohibits regulation beyond the exhaustively listed authorizations, of which the ban is. Moreover Slovenia and Netherlands are the only two European countries with "fundamentalist interpretation" of net neutrality, and they cannot exceed EU norms.

## Testing the alleged harms of zero rating

The case studies provide some information about zero rating in the specific countries. Together with market research on mobile applications, we attempt to find evidence for the claims of those opposed to zero rating. Given their specific arguments, we pose the following assertions and attempt to test them.

1. The operator that offers zero rating will win market share.
2. The zero rated service will win market share.
3. The presence of zero rating will preclude the emergence of new applications and services.
4. Users do not go to non- zero rated content. If Facebook is free, they don't venture beyond it.
5. Operators that are zero rating their own content foreclose other content.

---

<sup>120</sup> Ales Lednik, "Večer: Kršijo Zakon, Nihče Ne Trzne," *Vecer*, June 27, 2015, <http://www.vecer.com/clanek/201506276125307>.

<sup>121</sup> "Dušan Caf: V Državni Lasti Bo Telekom Težko Konkurenčen," *Finance.si*, June 27, 2015, <http://www.finance.si/8824292/Du%C5%A1an-Caf-V-dr%C5%BEavni-lasti-bo-Telekom-te%C5%BEko-konkuren%C4%8Den>.

<sup>122</sup> "STA: Caf Za Večer: V Državni Lasti Bo Telekom Težko Konkurenčen," *Sta*, June 27, 2015, <https://www.sta.si/2150491/caf-za-vecer-v-drzavni-lasti-bo-telekom-tezko-konkurencen>.

<sup>123</sup> "Zvodeneli Kompromis Medmrežne Nevtralnosti Pustil Nezadovoljstvo," *Prvi Interaktivni Multimedijški Portal, MMC RTV Slovenija*, July 1, 2015, <http://www.rtvsllo.si/znanost-in-tehnologija/zvodeneli-kompromis-medmrezne-nevtralnosti-pustil-nezadovoljstvo/368779>.

<sup>124</sup> <http://ec.europa.eu/priorities/digital-single-market/>

<sup>125</sup> Confidential interview

<sup>126</sup> Confidential interview

Additionally we want to know whether consumers experience harm. A consumer harm test<sup>127</sup> examines whether the following results from a particular activity: higher prices, lower output; or reduced product innovation. A related set of questions in competition analysis have to do with whether a firm possesses significant market power (SMP) and whether the firm exercises it. So for example, if a firm without market power employs zero rating, it need not be banned because it is not a threat to the marketplace. The Slovenian competition authority described this.

Testing the assertions is not necessarily easy because critics of zero rating don't provide specifics for their charges. For example, how is market share for operators defined, as subscribers or revenue? How is market share defined for services, by number of downloads, users, usage, or revenue per user? These are just a few of the relevant parameters to consider, but the market research data is limited to app store rank. It does not provide the specific number of downloads or revenue per application.

The market for mobile applications has some similarity to search engines and web traffic in that the most popular destinations gather a disproportionate amount of traffic. They have a typical power law distribution in which the top twenty destinations gather 80 percent or more of traffic. But while it is next to impossible to break into the top 10 or even 25 of the world's most popular websites, new applications emerge in the top 10 of mobile app stores every month. New apps tend to emerge by "viral" means (popularity in social networks). There is a notion that an app could get a shortcut to the top rank in the app store through zero rating, but our investigation could find no examples of such overnight success. In any event, we did observe that there are a number of mobile apps that are popular worldwide, regardless of the country or offer.

To understand the market for mobile applications we used the public version of AppAnnie.com, a leading market research tool for mobile applications which aggregates download and revenue data for app stores by country and app marketplace (Google Play, Apple App Store etc). The number of downloads per app is not given, but appearance in the top ten of the app store indicates high level of downloads, approximately 10,000 to 25,000 per day. While it will depend on the country and the category, the top 100-200 apps are significant for the market, assuming the depth of the particular category. After position 200 the significance falls precipitously and below 300 ceases to matter. One can understand the phenomena from Google's search engine that the first three results get the lion's share of clicks, followed by the remaining 7 on the first page, but generally users never go past the first page. Thus appearing in the top 10 for the category is important.

AppAnnie.com offers more than a dozen categories for apps including health, travel, kids, business and so on, but three key categories are messaging/social networking apps (WhatsApp, Facebook Messenger, Line, KakaoTalk, WeChat); Entertainment (Netflix, YouTube, HBO, Hulu), and Games (Clash of Clans, Candy Crush, Game of War). The platform also organizes the information for free and paid applications. This is significant because how an application earns revenue varies. For example, some apps earn a fee when a user downloads them in the store. In other cases, the app is free but revenue is earned inside the app either through advertising (itself a form of zero rating, free app subsidized by advertising) or in-app purchases, for example micro-transactions within game play. So, popularity does not necessarily translate to profitability.

Music streaming took off quickly on mobile phones, but video streaming has taken a longer time to take hold. This is due to in part to large file size (which been addressed through better content formatting and application design, more advanced devices, and

---

<sup>127</sup> *The Foundations of European Union Competition Law: The Objective and Principles of Article 102*  
<http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199226153.001.0001/acprof-9780199226153-chapter-8>



new networks) and copyright. This is important from a net neutrality perspective because while one may want to access a particular mobile entertainment application, it may be blocked because of geographic or copyright restriction. As such, Netflix, HBO Now and Hulu are highly ranked apps and top revenue earners in the US where they have licensed content for the region.

However Netflix has licensed content for a number of geographies as is a popular app in many countries. The rise of video streaming via mobile is driving a trend for cord cutting.<sup>128</sup> It is important to note that, with the exception of certain copyright content, mobile app markets are essentially global. Users are able to access applications and services from around the world, as well as from their own country. However it brings attention to important issues for the European Union as they would like to see greater visibility and success for European-based innovation.

While Google and Facebook dominate a number of categories, games is one area where new players from a variety of countries have emerged with popular titles and sustainable business models. This includes of course publishers from the US, China, South Korea, and Japan, but a massive multiplayer game such as Agar.io from Miniclip in Switzerland has taken the world by storm, as have other titles from Vietnam and France.

While the web has been, and remains to a large extent, an American phenomenon, as measured by the proliferation of American websites dominating traffic and revenue, the mobile Internet is driven in large part by China, a country with large base of broadband-connected smartphone users and world class application providers. In fact Apple's App Store has more downloads in China than in the US.<sup>129</sup> China has a number of powerhouse video streaming providers including Tencent, Baidu's iQIYI, Sohu TV, Youku Tudou ,and LeTV. AppAnnie.com notes,

Over the past few years, these services evolved from YouTube-like user-generated content video platforms to Netflix-like providers of professional shows. They have successfully attracted audiences from traditional broadcasting TVs by offering the content on omni-platforms including desktop, mobile, set-top boxes and digital TV. They have also enticed users to their platforms by securing rights to a broad range of foreign and domestic premium content including drama series like House of Cards and The Wife's Lies, hit TV shows like Voice of China and Happy Camp, recent movies like Interstellar and Gone With the Bullets and live broadcasting of premium sports like the English Premier League and the NBA, as well as making their own exclusive content. Mobile video streaming delivers significant value to consumers by enabling them to consume content anytime and anywhere on devices that are more affordable than TVs and PCs. Recognizing this huge opportunity, traditional TV networks in China like Hunan Broadcasting System have also joined the competition for mobile audiences by launching their own apps like ImgoTV.<sup>130</sup>

Our examination consisted of reviewing the performance of the various zero rated applications in the app stores amongst other mobile applications the period of January 2013 through July 2015 for Netherlands (Spotify, Sizz, HBO Go) and Slovenia (TViN, Deezer, and others). For Chile we began the observation from January 2012 through the present for WhatsApp. Data is offered on a monthly basis, so we developed annual averages to describe relevant movement year over year. We also examined the prevalence of local country applications, as this is seen as an important outcome for many policymakers. Market share data on the operators was found on the respective regulators' websites.

---

<sup>128</sup> "HBO NOW Pushing the Cord-Cutting Trend," *App Annie Blog*, August 4, 2015, <http://blog.appannie.com/hbo-now-pushing-the-cord-cutting-trend/>.

<sup>129</sup> "Report: China Surpasses United States by iOS Downloads," *App Annie Blog*, April 28, 2015, <http://blog.appannie.com/china-surpasses-united-states-ios-downloads/>.

<sup>130</sup> Ibid

	Chile	Netherlands	Slovenia
The operator that offers zero rating wins market share.	Since launch, Virgin Mobile has grown consistently since launch but has less than 1% of the Chilean mobile market. It is difficult therefore to attribute its success to zero rating because the rate is the same with or without the zero rated offer.	No. Between 2012-2014, market share amongst mobile operators in the Netherlands was relatively constant, within 5 percent. A modest gain for service providers and virtual providers has been recorded over the period. <sup>131</sup> KPN, which had a zero rated offer, experienced a modest decline.	No. The incumbent with two zero rated offers experienced a reduced market share.
The zero rated service wins market share.	Can't be definitively determined. WhatsApp was already a popular service in Chile before zero rating began. On Apple devices it actually lost market share while on Android it stayed relatively constant. Messenger, Twitter, Skype, Badoo, Google Hangouts, Emoji, LINE, Telegram, imo, Talking Tom and Viber are also popular messaging apps.	Vodafone's Sizz never entered the top 500 most downloaded apps for the period. HBO Go was #450 in 2012, #483 in 2013 and not in the top 500 in 2014-2015. There is no consistent offer for Spotify during the period, and it was frequently not zero rated. However its ranking increased from an average of 42 (Apple) and 30 (Android) in 2013 to from 12 and 8 respectively in 2015. Globally Spotify has increased ranking in all countries, whether zero rating is present or not.	No for Telecom Slovenia's TViN. The ranking falls from 67 to 85 between 2013 and 2015 in the Apple store. No for Deezer; it fell from 116 to 133 for the period. VOYO fell from 116 to 125. For Hangar Mapa, Tsukabina, and TV.Si, they either never appear or show briefly with a low rank. For HBO Go, it rises from 282 to 68. As of Aug 15, 2015, it ranks at 291 for Apple.
The presence of zero rating will preclude the emergence of new applications and services.	Can't be determined. Facebook's Messenger and WhatsApp, ranked closely. Twitter, Instagram and Snapchat are popular. For Chilean apps as of Aug 15, 2015 in Apple, The Voice TV show app #1; marketplace Yapo at 12 (14 in Google), and the government's "Youth Card" at 21, allows youth differentiated pricing for various activities in Chile.	No. New apps from a variety of countries appear each month in the ranking. However it does not appear that the Dutch net neutrality law stimulates new Dutch applications, as was hoped. Only two Dutch apps appear in the top 25 of top ranked apps in either Apple or Android.	No. New apps from a variety of countries appear each month in the ranking. As of Aug 15, 2015 for Slovenia apps in Google Play, the market Bohla appears at 48, and 24ur.com, Slovenian news at 76. For Apple, the ASfalt traffic app at 19, bohla.com at 30, BOX app by Telekom Slovenija to manage TV programs, and 24ur.com at 90.

<sup>131</sup>“Onderzoek Telecommonitor derde kwartaal 2014,” Onderzoek, *ACM.nl*, (February 11, 2015), <https://www.acm.nl/nl/publicaties/publicatie/13838/Telecommonitor-derde-kwartaal-2014/>.

As for the assertion that users do not go beyond zero rated content, we could not find evidence for that assertion in any of the three countries. As for the assertion that operators which zero rate their own content foreclose other content, we could not find any evidence for that either. The only country with proprietary content was Slovenia. The operators' content was extremely niche-oriented competing in a large, global marketplace. The content appears to be non-rivalrous, that is its presence is appreciated by those who value it, but it does not detract from the experience of other users. In any event, its rank is so low that it does not "threaten" other content.

As pointed out by the competition authority in Slovenia, the zero rated offers in many cases consume only minimal data, and at best, may only impact price by a few cents per month. In other words, the data consumption for apps such as Spotify, WhatsApp, and Deezer is so small in relation to other services that it cannot be observed. If anything, purveyors of the most popular applications work to reduce the data consumption of their applications. Facebook re-engineered its mobile platform, decreasing average monthly data use from 14MB/mo to 2MB/mo.<sup>132</sup>

Naturally video applications consume the most data, so these cases are interesting to review. Vodafone Netherlands only had 3200 subscribers for its zero rated HBO Go application when it was ordered to end the practice. That the application was zero rated did not deter other content in the marketplace. Vodafone did not gain an advantage over competitors by zero rating the app.

In the case of Slovenia, the zero rated offers actually increased output on the market, even though they were not the most widely demanded application. For example Telecom Slovenia purchased sports rights and extended that benefit to its customers doubly with its investment and by zero rating the application. But the zero rated TViN service actually suffered a loss in ranking in the app store during the period. VOYO was a content service that was zero rated for a two year period, and it suffered a decline in app store rank as well. It shows that not all content is valued equally if it is free. Zero rating is not the competitive advantage that detractors like to describe it. More likely, as Baumol described, it is just one of a range of offers that providers have to make to survive in the marketplace.

It cannot be observed that zero rating has reduced innovation in any of the countries. In anything bans on the practice have hurt users the most. This is particularly the case for the subscribers of Vodafone and Tasmobil. The bans against customer service applications such as Sizz (Vodafone Netherlands) and Tuskabina (Tasmobil Slovenia) were offered as courtesies, so that customers would not have to use data to top up their mobile subscription or minutes to call customer support. Neither of these operators hold dominant market positions anyway so punishing them for consumer-friendly activities seems harsh.

On balance for the three countries, it appears that the impact of zero rating is negligible but not negative.

---

<sup>132</sup> See Mark Zuckerberg comments at Mobile World Congress in 2014 at 28:20 <https://www.youtube.com/watch?v=VHwkHZpXqWc>.

## Zero Rating and Freedom of Speech

There is no doubt that zero rating is a potent policy issue. For advocates in many countries, zero rating and the larger net neutrality debate has become synonymous with free speech.

However it has been observed that making net neutrality laws in developing countries is premature because the majority of the population of these countries has never been online, and as such, cannot experience the Internet for themselves. Zero rating is perhaps the quickest, cheapest way to get the poor online, but that option is vigorously challenged.

It may be the case that people in developing countries could benefit from net neutrality, but the choice of how the Internet should be is made for them. The decision to make net neutrality rules has path dependencies with implications for more than just network access. Net neutrality rules across 20 countries have provisions related to copyright, data retention, pricing, surveillance, and more.<sup>133</sup>

Compared to people who are not online, net neutrality advocates are elite, sophisticated, and well-educated. They probably have computers at home with wireline access as well as the latest smartphone. A low or no data cap plan is their preference. But people who have never been online do not have the same expectation of Internet access. For a Chinese, the Internet might be equated a non-branded smartphone, WeChat messaging, Baidu search, and Youku video. It need not conform to a gold standard of neutrality, but it still can be a thrilling experience.

For Westerners, concepts such as free speech and freedom of expression are established and enshrined in constitutions and case law. But for a number of developing countries, these concepts are still in the making. There is no doubt that Internet freedom is important in these countries, as it is everywhere. But where Internet penetration is low and television, radio and print are still the dominant media, the pursuit of freedom for all media may be more appropriate than just net neutrality.

In any case, the question may boil down to whether those not yet online have sufficient economic power. As mentioned, developing countries may have mobile networks but still lag on key indicators for quality of life. There is no doubt that zero rating offers an opportunity for poor people to access the Internet, become politically aware, and hold leaders more accountable. Such empowerment could be destabilizing for the status quo.

This paper has focused specifically on Chile, Netherlands, and Slovenia. The following section offers an American perspective on net neutrality, particularly in light of nine legal challenges to the FCC's net neutrality rules, the third time the telecom authority is in court for making rules. However even Slovenia has free enterprise laws. Such arguments may be important in a former communist and war-torn country where entrepreneurs and private enterprises try to build a market economy.

Critics contend that zero rating is "discriminatory", but in the United States, zero rating is likely a form of speech that is protected by the First Amendment of the Constitution.<sup>134</sup> Zero rating conforms to all aspects of the classic definition of marketing: product, price, place, and promotion.<sup>135</sup> Thus bans on zero rating may be bans on free speech. To be sure, "deception" and false advertising are not allowed, but the freedom to make an offer in the marketplace is as fundamental as speech itself.

---

<sup>133</sup> See forthcoming paper by Roslyn Layton for a comparison of net neutrality rules in 20 countries.

<sup>134</sup> "Advertising and the First Amendment," *LawPublish*, accessed August 5, 2015, <http://www.lawpublish.com/amend1.html>.

<sup>135</sup> McCarthy, Jerome E. (1960). *Basic Marketing. A Managerial Approach*. Homewood, IL: Richard D. Irwin.

This argument<sup>136</sup> will soon have a test in court. It holds that a broadband provider is no different from a newspaper, printing press, or broadcaster from a constitutional perspective. Broadband access is speech just as print or broadcast.

The distinction between technical and commercial reasons is irrelevant for the First Amendment. Indeed for a network, technical and commercial concerns are one in the same. Thus some net neutrality rules against how operators price and manage their networks may be unconstitutional. Legal scholar Fred Campbell explains<sup>137</sup>

It is constitutionally irrelevant that the content-related restrictions in the open Internet rules also implicate business concerns.<sup>138</sup> The Court has long held that the commercial nature of the press does not deprive it of First Amendment protection, because there is no constitutionally permissible way for the government to separate the business interests of the press from its editorial function.<sup>139</sup> The existence of “commercial activity, in itself, is no justification for narrowing the protection of expression secured by the First Amendment,”<sup>140</sup> in part because even early printers were capitalists who were regarded as innovators.<sup>141</sup> The combination of the profit motive “with other motives that were self-serving and altruistic, and even evangelistic, at times,” played a role in the “rapid expansion of early printing industries.”<sup>142</sup> The editorial and business interests of the press have always been inextricably intertwined,<sup>143</sup> and the Press Clause has always forbidden government attempts to unravel them.<sup>144</sup>

While the court may recognize an argument for common carriage, this does mean free carriage. Thus an operator’s discretion of how to charge for delivery is protected as well. Price differentiation is enshrined in almost every country through the post, with priority, regular, and reduced rate postage. It is understood that there is social value to give mass media and books a lower price of delivery because it supports communication, expression and the exchange of ideas.

Moreover rather than declare such practices inherently harmful, however, the Supreme Court has upheld the government’s right to engage in paid prioritization of the mail for the purpose of subsidizing particular forms of speech.<sup>145</sup>

In this way, it is no different for some Internet content to get the “book rate” or the zero rate. It supports overall expression.

In some respects the zero rated Internet.org, a platform for Facebook and locally relevant content for developing countries is not unlike the very original conception of zero rating, a term<sup>146</sup> that comes from the international trade and tax policy of the European Economic Community in the 1950s. When value added tax (VAT) was imposed on goods distributed in what is today the European Union, certain “essential” items such as food, medicines, books, equipment for the disabled and were “zero rated” and not taxed. While it probably makes net neutrality advocates wince, Facebook is an essential for the Internet.

---

<sup>136</sup> Fred Campbell, “CBIT Amicus Brief: FCC Net Neutrality Rules Violate First Amendment,” *Center for Boundless Innovation in Technology*, August 6, 2015, <http://cbit.org/blog/2015/08/cbit-files-amicus-brief-fcc-net-neutrality-rules-violate-first-amendment/>.

<sup>137</sup> Fred Campbell, *The First Amendment and the Internet: The Press Clause Protects the Internet Transmission of Mass Media Content from Common Carrier Regulation*, 94 NEB. L. REV. \_\_\_\_ (2016). See also <http://cbit.org/blog/2015/06/cbit-white-paper-how-net-neutrality-invites-the-feds-to-ignore-the-first-amendment-censor-the-internet/> at p 32-33, 51

<sup>138</sup> *Bigelow*, 421 U.S. at 818, quoting *Ginzburg v. United States*, 383 U.S. 463, 474 (1966). (“The existence of ‘commercial activity, in itself, is no justification for narrowing the protection of expression secured by the First Amendment.’”).

<sup>139</sup> See *Tornillo*, 418 U.S. 241, 258.

<sup>140</sup> *Bigelow*, 421 U.S. at 818, quoting *Ginzburg v. United States*, 383 U.S. 463, 474 (1966).

<sup>141</sup> Elizabeth L. Einstein, *The Printing Press as an Agent of Change*, p. 22 (Cambridge University Press, 14<sup>th</sup> printing, 2009).

<sup>142</sup> See *id.* at p. 23.

<sup>143</sup> See *id.* (“It seems more accurate to describe many publishers as being *both* businessmen *and* literary dispensers of glory.”).

<sup>144</sup> The Press Clause has not been amended since its initial ratification.

<sup>145</sup> *Hannegan v. Esquire, Inc.*, 327 U.S. 146, 151 (1946).

<sup>146</sup> Harry Wallop, “General Election 2010: A Brief History of the Value Added Tax,” April 13, 2010, <http://www.telegraph.co.uk/news/election-2010/7582869/VAT-a-brief-history.html>.



But it is not the case that all expression must be treated equally. “The Supreme Court has rejected the notion that the government has an interest in equalizing the relative ability of individuals or groups to speak.”<sup>147</sup> “[T]he concept that government may restrict the speech of some elements of our society in order to enhance the relative voice of others is wholly foreign to the First Amendment,”<sup>148</sup> notes Campbell.<sup>149</sup>

Marketing and advertising to support the provision of service, content, access to users has been a quintessential part of every medium, whether radio, TV, print, search engine, social network, and music streaming. Classified advertisements, a forerunner to search advertising, supported Benjamin Franklin’s *Pennsylvania Gazette* in 1728. The telephone newspaper of the 1890s, a forerunner of today’s mobile broadband, was funded both by spoken ads and price differentiated subscriptions for different audiences.<sup>150</sup> Radio broadcasting would have been unknown in America had it not been for content providers’ zero rated programming.

To stimulate purchase of receivers from the De Forest Radio Company, owner Lee De Forest negotiated the Metropolitan Opera and the Columbia Graphophone Co., to zero rate their music content. Free broadcasts helped introduce America to this new medium. Thereafter it became commonplace for consumer product companies to sponsor radio shows. This was a norm for American television. Revenues from advertisers were used to expand radio and television networks and technologies. Unsurprisingly Internet companies such as Google, Facebook, Yahoo and others have availed themselves to zero rating style business models, so that their users need not pay money for the service. Google zero-rates search and its other products. Facebook sponsors its platform with advertising.

Marketing is also important to promote devices. Imagine if AT&T had not been able to make an exclusive distribution agreement with Apple for the iPhone in 2007. Nokia, in fact, invented the smartphone in 1996 but never got the credit because it failed to communicate to customers in a compelling way.<sup>151</sup> Consumers were able to take advantage of the iPhone in spite of its high price of \$399 because AT&T through its subsidy of the phone created a form of zero rating of the cost of the phone to the end user. Additionally Apple could leverage the marketing and distribution of its device in AT&T’s subscriber network. Such a partnership was needed to launch the idea of the smartphone in the consumer imagination<sup>152</sup>; it opened the door to other smartphones and fostered the development of mobile platforms on which WhatsApp, Spotify, Netflix, and other mobile applications have flourished. A zero rating like ban on partnerships between operators and device makers could have precluded significant mobile innovation.

Marketing is also essential for firms to differentiate themselves in the marketplace, and even more important for service based competitors which resell service on established networks. Consider the communication on the following two Chilean websites, one for Movistar and the other for WOM. Movistar, the market leader, features a bourgeois husband and wife in their properly appointed home with an offer of 150 voice minutes or 500 MB of data for a set price. WOM, an MNVO, features two girls at a party sharing a lemon wedge by mouth with the offer of 30 GB of data for \$25. These are two different customer sets with different needs and budgets. Marketing is essential for each operator to acquire customers.

---

<sup>147</sup> See *Citizens United*, 558 U.S. at 350.

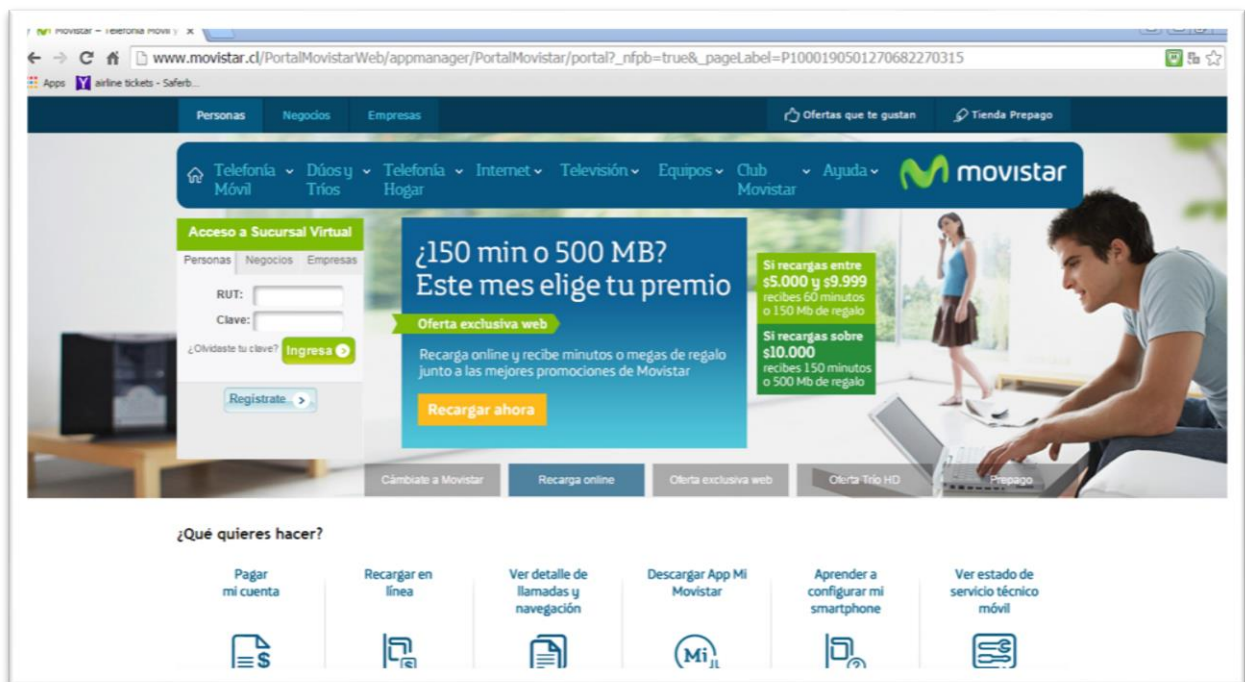
<sup>148</sup> *Buckley v. Valeo*, 424 U.S. 1, 48-49 (1976).

<sup>149</sup> Supra

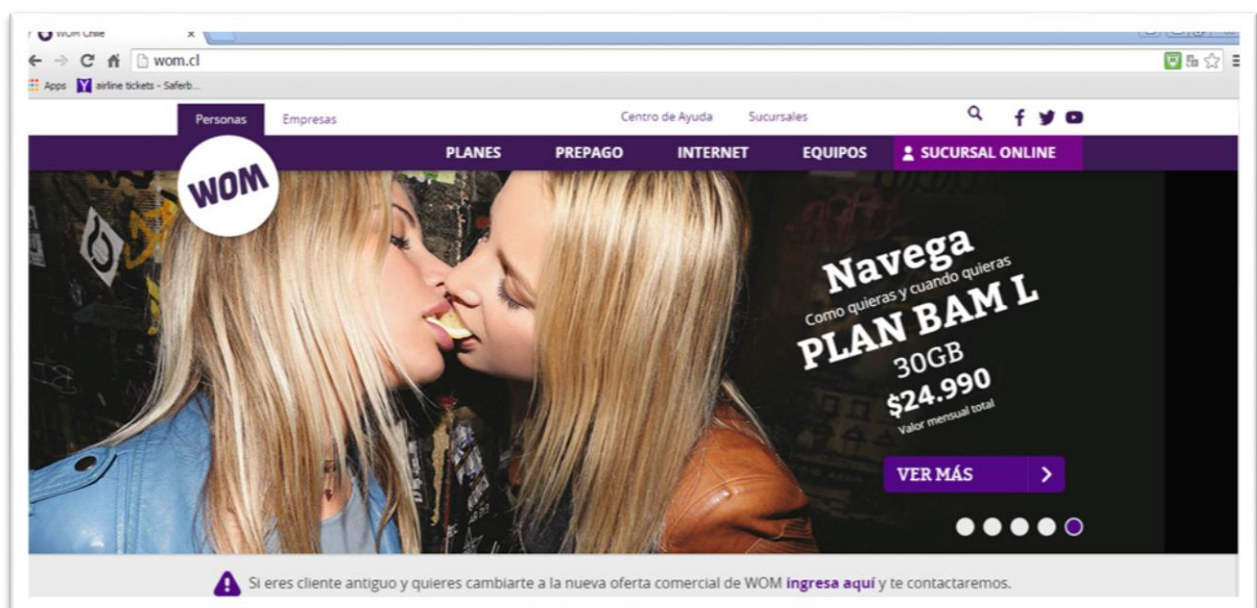
<sup>150</sup> Roslyn Layton. “What the 19<sup>th</sup> Century Telephone Newspaper Tells us about Today’s Internet.” August 13, 2015. <http://www.techpolicydaily.com/internet/telephone-newspaper-todays-internet/>

<sup>151</sup> “Nokia 9000 Communicator Detailed Specs,” *PDADB.net*, accessed August 14, 2015, [http://pdadb.net/index.php?m=specs&id=879&view=1&c=nokia\\_9000\\_communicator](http://pdadb.net/index.php?m=specs&id=879&view=1&c=nokia_9000_communicator).

<sup>152</sup> Strand Consult iPhone Report, 2009. <http://www.strandconsult.dk/sw3896.asp>



**Movistar's Homepage**



**WOM's Homepage**

## Why the War on Zero Rating

This paper has examined the arguments for and against zero rating. It examines the key concerns about zero rating and attempts to find evidence for the claims. It reviewed the leading database of financial information for mobile operators and the leading database of application performance in mobile app stores. We conducted primary research in the three countries that ban zero rating. The case studies highlighted a number of similarities in the countries, including strong net neutrality laws, reluctant regulators, and the role of powerful advocacy organization to make zero rating illegal. While this demonstrates the success of these organizations to activate the media and policymakers, the case studies highlight the lack of analysis, evidence, and investigation in net neutrality policy, showing that each country is highly idiosyncratic in its rulemaking.

Through a variety of quantitative and qualitative techniques, we have attempted to find evidence for the harm that zero rating allegedly creates to consumers and competition.

In short, we cannot find evidence that shows that zero rating creates harm. We find that zero rating has a negligible but not negative impact on the marketplace.

Zero rating is one of a number of marketing techniques that mobile operators need to employ in competitive marketplace. For some operators in the study, their outcomes are the opposite predicted by critics. Some operators that deployed zero rating actually lost market share, and their zero rated applications were insignificant in terms of rank. We do not believe that this is a result of zero rating, but rather that zero rating is the result of the operator's competitive situation. To rephrase Baumol, operators don't deploy zero rating because they can, but because they must.

It is strange however that a service that has such a minimal impact should be so maligned. It is also inconsistent that zero rating is rampant across Internet applications and services (e.g. advertising supported games, search, social networks, music streaming etc) but arbitrarily prohibited on mobile broadband services.

We noticed that in the three countries that advocates have a goal to make flat rate internet subscriptions and high data caps (preferably no data caps) the norm, if not the law. While such offers have appeal, they necessarily mean low volume users, whether by choice or budget constraint, are forced to pay more for internet access. Meanwhile high volume users, those who want to stream movies or play video games, pay proportionately less for their service. Such a situation would be a particular boon to companies such as Netflix, whose streaming service takes up a disproportionate share of mobile traffic. Thus it appears that campaigns against zero rating are waged as a way to pressure mobile operators to change their pricing in favor of users who consume high volume video and against those users who have never used the Internet but want an incentive to try.