

Challenges and Opportunities for Advancing Internet Access in Developing Countries while upholding Net Neutrality

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Abstract

Net neutrality deliberations go hand in hand with discussions of upholding and preserving the openness of the Internet, widely perceived as a precondition to the realisation of the Internet's potential. This is particularly relevant with access to the Internet being increasingly accepted as a basic right. Rules and regulations to uphold net neutrality exist within various jurisdictions, and in both developed and developing markets. With mobile data plans as a primary mode of Internet access in developing markets, the practice of zero-rating – where mobile network operators enable customers to download and upload online content without incurring data usage charges, or having their usage counted against data usage limit – is closely interlinked with net neutrality deliberations. The overarching question is whether zero-rating defies the principle of net neutrality, by favouring some content over other content. The challenge for policy makers and regulators in developing countries, as addressed in this paper, is knowing which regulatory frameworks will be needed to expand Internet access to underserved communities, without compromising the fundamental principles of a free and open Internet.

Access to affordable Internet is increasingly a development priority, and even considered a basic right. There are huge economic and social benefits to be reaped from Internet access, as evidenced by gross domestic product contributions, as well as projections. However, a majority of the world's population, most of who are in developing nations, remain unconnected. A crucial policy debate on how to avail Internet access, while upholding and preserving the openness of the Internet, also known as net neutrality, is emerging as state actors, private sector players and civil society alike operate in this space. The practice of zero-rating – where mobile network operators enable customers to download and upload online content without incurring data use charges, or having their usage counted against data usage limit – is one of the most popular approaches to getting the unconnected online. This follows the fact that the mobile phone is the primary device through which the 'next billion' Internet users are expected to get online. The overarching question is whether zero-rating defies the principle of net neutrality, by favouring some content over other content. The challenge for policy makers and regulators in developing countries, as addressed in this paper, is knowing which regulatory frameworks will be needed to expand Internet access to underserved communities, without compromising the fundamental principles of a free and open Internet.

Introduction

Network Neutrality is at the core of conversations and policy deliberations on the future of Internet governance. A widely adopted definition states that net neutrality requires the Internet be maintained as an open platform, on which network providers treat all content, applications and services equally, without discrimination.

Net neutrality deliberations go hand in hand with discussions of upholding and preserving the openness of the Internet, widely perceived as a precondition to the realisation of the Internet's potential. This is particularly relevant with access to the Internet being increasingly accepted as a basic right. Rules and regulations to uphold net neutrality exist within various jurisdictions, and in both developed and developing markets.

With mobile data plans as a primary mode of Internet access in developing markets, the practice of zero-rating – where mobile network operators enable customers to download and upload online content without incurring data usage charges, or having their usage counted against data usage limit – is closely interlinked with net neutrality deliberations. The overarching question is whether zero-rating defies the principle of net neutrality, by favouring some content over other content. The ensuing debate around zero-rating and its implications for net neutrality is often framed as a tradeoff between a lesser degree of inclusion (zero-rating) and openness and equality of opportunity (net neutrality); however, the bigger issue is about expanding Internet uptake, and setting a precedent that would make it more difficult for users to freely access the Internet.

The challenge for policy makers and regulators in developing countries is knowing which regulatory frameworks will be needed to expand Internet access to underserved communities, without compromising the fundamental principles of a free and open Internet. As the markets with the highest potential for growth and development of Internet economies, it is imperative that research and multistakeholder consultative processes are exercised by regulators in these markets, to ensure that the next billion users enjoy the benefits an open and diverse Internet has to offer; that new innovators stand a fair chance of competing in their respective markets, and even globally. From a regulatory perspective, over-regulation would stifle innovation and stall attempts to increase connectivity, while under-regulation could result in untenable conditions for all stakeholders.

This paper explores the definitions, debates and regulatory recommendations around upholding net neutrality while increasing Internet access, and why regulators in developing countries should pay attention to these debates.

Internet Access and Economic Growth

Internet access has been heralded as a key enabler of development, especially in developing countries. Access to information and communication technologies (ICT), and broadband Internet in particular, has the potential to serve as a major development accelerator (UN Broadband Commission, 2015). The importance of connection to ICT is also recognised in the recently adopted Sustainable Development Goals (SDGs).

Many countries boast of the numerous benefits that access to affordable Internet has given their citizens, including driving the growth of digital economies that contribute to the gross domestic product (GDP). The United Kingdom, for instance, has the largest digital economy in the G-20, which contributes up to ten percent of GDP to the nation's economy. The Internet is the second biggest economic contributor in the UK, surpassing manufacturing and retail (BCG 2015). This achievement is made possible through affordable access, a level playing field, and an open, competitive environment that enables citizens to tap the economic benefits of the Internet, as well as to innovate.

Almost sixty percent of the world's population, however, is offline (A4AI 2014). The vast majority of those not connected to the Internet are in the developing world. Close to seventy per cent of households in the developing world do not have Internet access, and while Internet penetration rates have increased dramatically in recent years, the pace of change seems to be slowing; most simply cannot afford to be connected. Internet penetration in Africa is estimated to be approximately twenty nine percent, compared to a world average of approximately forty-six percent, according Internet World Stats, as of December 30, 2015. The disparity in Internet access also has a gender dimension; women are far less likely to be able to access the Internet affordably than men. In Africa, up to forty-five percent fewer women than men access the Internet (A4AI 2014). The Internet's contribution to GDP in Africa is only at approximately one percent, but the opportunities for the Internet to contribute to economic development and growth in Africa are already being perceived. The Internet's greatest impact in Africa is likely to be concentrated in financial services, education, health, retail, agriculture, and government. Gains in these sectors, because of technology, could be worth up to 318 billion US dollars by 2025 (Manyika et al. 2013).

Broadband strategies and ICT policies in developing countries, therefore, should efficiently address the barriers to Internet access, so as to unlock the Internet's transformative potential. Along with affordability of Internet access, the quality of the Internet accessed is just as significant a consideration for policy makers and regulators. The policy dilemma thus emerging is how to expand Internet access to underserved communities, without compromising the important principles of a free and open Internet. These principles are commonly referred to as network neutrality. As governments and private sector actors present strategies for achieving universal Internet access, it will be crucial to assess whether the proposed approaches would ensure access to a free, open, affordable, and secure Internet for all.

Net Neutrality

As of December 30, 2015 the Global Net Neutrality Coalition's website defined net neutrality as the principle that requires the Internet be maintained as an open platform, on which network providers treat all content, applications and services equally, without discrimination. Net neutrality discussions encompass factors such as free expression, user choice, discrimination, network traffic management and pricing.

The debate surrounding net neutrality policies is essentially about two competing technical architectures of information networks.. On one hand, it is about a non-discriminatory infrastructure that facilitates innovation at the Internet's edges, with service and content providers competing equally over the same networks. On the other, it is about an evolution toward networks that should be permitted to develop new business models on the physical infrastructure, asserting centralised control over the content on their networks, and monetising points of network congestion by charging differentially depending on usage (pay-for-play), to provide quality of service to content and service providers (Scott, Heumann, and Kleinhans 2015).

Professor Vishal Misra, in "Half the equation and half the definition", *Peer Unreviewed Blog*, December 29, 2015, <http://peerunreviewed.blogspot.in/2015/12/what-is-definition-of-net-neutrality.html>, suggests that net neutrality should be enshrined in the following definition: "the Internet is a platform where ISPs (Internet Service Providers) provide no competitive advantage to specific apps/services, either through pricing or QoS (Quality of Service)." Misra arrives at this conclusion by observing that the United States' Federal Communication Commission (FCC)'s definition, "broadband providers cannot block, throttle, or create special 'fast lanes' for content", while addressing how services are treated, does not address the issue of differential (data) pricing. Differential pricing for Internet services is essentially a proposition that would allow service providers to charge different tariffs based on the websites, applications and platforms being accessed on the Internet, with the aim of addressing network congestion.

Misra further justifies the addition of pricing in the definition of net neutrality by assessing, through game theory, the "Consumer Surplus"; how much an application costs changes the surplus a consumer obtains, and applications with similar utility (quality) but with differing costs provide different surpluses. Higher surpluses, therefore, get competitive advantages, hence the importance of modeling the cost aspect of an application in deriving a workable definition of net neutrality.

There are agreed-upon exceptions to net neutrality. The Global Net Neutrality Coalition notes that any interference by Internet Service Providers should only occur when: strictly necessary or

proportionate to giving effect to a legislative provision or court order; preserving the integrity and security of the network, service, and Internet users' terminal equipment; preventing the transmission of unsolicited communications for direct marketing purposes to Internet users who have given prior consent to such restrictive measures; complying with an explicit request from the subscriber, provided the request is given freely; mitigating the effects of temporary and exceptional network congestion, primarily by means of application-agnostic measures, or by means of application-specific measures, should the former not prove efficient.

While the discussion of net neutrality laws has previously taken place in more developed countries, the debate is now taking shape in developing and emerging markets. India, for instance, has ongoing deliberations that have captured global attention. It could be argued that the debate and outcome in the sub-continent will influence how the debate unfolds in other developing nations, as many work towards availing access to affordable broadband as a key development goal. The two key discussions in India on net neutrality have been about whether the regulator should subject some Internet applications to regulation, and whether differential data pricing models in the market should be allowed.

At the heart of the net neutrality debate is regulation. Pranesh Prakash in 'Regulatory Perspectives on Net Neutrality', on The Centre for Internet and Society Blog, 8 July 2015, <http://cis-india.org/internet-governance/blog/regulatory-perspectiveson-net-neutrality>, notes that 'Regulating net neutrality would not be needed if Internet Service Providers (ISPs) were not gatekeepers for last mile access.' Gatekeeping, he adds, 'occurs when a single company establishes itself as an exclusive route to reach a large number of people and business.' In such a case, services provided over the Internet cannot reach that telecommunication company's (or other ISP) customers without passing through the telecommunication (ISP) network. The issue of gatekeeping is particularly nefarious in 'last mile' connectivity, where multiplicity of routes through which to transfer data packets is not possible. As Prakash further observes, regulating net neutrality will vary in different contexts, and specific rules may need to change depending on changes in conditions such as the 'last mile' market, the interconnection market, technology and available bandwidth, as well as the conflicting interests of ISPs.

Net Neutrality Laws, Regulations and Rules

According to the Global Net Neutrality Coalition's 'Status of net neutrality around the World' map as of March 1, 2016, net neutrality protections are in place in North America, most of South America, a few European countries, India, and Tunisia and Israel in the Middle East and North Africa region. Most European countries, Australia, Pakistan and South Africa are considering protections. Russia, China and Myanmar have been found to have no protections in place, and research is pending for most African and South-East Asian countries.

Chile, for instance, is acknowledged as the first country in the world to uphold net neutrality in law. Included in the country's General Law on Telecommunications, the provision states, 'Internet Service Providers will not be able to arbitrarily block, interfere, discriminate, hinder or restrict content, applications or legal services that users perform on their networks, as reported by Claudio Ruiz on the Global Voices Blog, 4 September 2010, <https://globalvoices.org/2010/09/04/chile-first-country-to-legislate-net-neutrality/>.

The Netherlands are noted as the second country globally (and the first in Europe) to enshrine net neutrality in law, 'by banning its mobile telephone operators from blocking or charging consumers extra for using internet-based communications services' as reported by the Associated Press on 23 June 2010. Slovenia also has provisions in law, making it the second European country to enforce net neutrality. The law requires network operators to make every effort to preserve the open and neutral character of the internet such that they do not hinder, withhold or slow down internet traffic at the level of individual services or applications, or take measures to degrade these services or applications, except in specific stated events. The law also tasks the pertinent agency with promoting 'the possibility of end users making their own choices with regard to access, the dissemination of information or the use of applications and services' (Kmet 2015). In October 2015, the European Union voted in net neutrality regulations that allow providers to prioritise specialised services such as remote surgeries, and the prevention of terrorist attacks. These specialised services cannot be offered, however, if they restrict bandwidth for normal Internet users (Hern 2015).

In the US, the Federal Communications Commission put net neutrality rules back in place in June 2015 (having overturned them in court in early 2014, after an initial implementation in 2010). The rules prevent internet providers from blocking access to apps and websites, from throttling traffic speeds, and from selling (Internet) 'fast lanes' (Kastrenakes 2015). The rules apply to mobile Internet and traditional wired connections, and they also reclassify Internet providers' legal standing in a way that will give the FCC more authority to regulate them.

On February 8, 2016, the Telecom Regulatory Authority of India (TRAI) published its new regulations prohibiting discriminatory tariffs for data services. In the ruling, the regulator states that "no service provider shall offer or charge discriminatory tariffs for data services on the basis of content". The ruling also prohibits service providers from entering into any arrangement or contract with any legal or natural person that would have the effect of discriminatory tariffs for data services offered or charged to consumers on the basis of content. The prohibition is not expected to apply to closed electronic communication networks, "unless such tariffs are offered or charged by the service provider for the purpose of evading the prohibition in this regulation." The only exemption allowed to the final and binding ruling of the regulator is that "a service provider may reduce tariff for accessing or providing emergency services, or at times of grave public emergency." (TRAI 2016).

Following the net neutrality laws being put in place, Chile, Slovenia the Netherlands and most recently India have ruled that zero-rating goes against the principles of net neutrality, and have engaged in various measures, such as fines imposed on telecommunications companies for zero-rating certain platforms and the banning of 'free' social media services.

As the world watches the net neutrality debate and the subsequent enforcement of the aforementioned regulation in India, one question being posed is whether net neutrality should be under discussion in developing markets. A rigid application of net neutrality principles in developing countries where access is still rather expensive 'may have the unintended consequence of keeping the poor off the Internet while maintaining an open Internet for those who had already accessed the services' (Futter and Gillwald 2015). However, regulators in these markets should keep their eye on the ball, and members of the civil society should not be dissuaded from advocating the advancement of an open, diverse and affordable Internet for all.

Zero-rating

Zero-rating is a key consideration in the Net Neutrality debate, especially in developing markets. Zero-rating is a special form of differential pricing, in which the cost of bandwidth is borne by either the ISP or content provider. Mitchell Baker of the Mozilla Foundation observes that zero-rating as practiced today means either someone other than the ultimate consumer covers the data charges, or that the parts of the Internet accessed under such arrangements are limited, and predetermined by entities with financial power. Zero-rating could take several forms: it "could be zero-priced or fixed-price; capped or uncapped; subscriber-paid, Internet service-paid, paid for by both, or unpaid; content or source/destination-based, or agnostic to content or source/destination; automatically provided by the ISP, or chosen by the customer", as noted by Pranesh Prakash in the previously cited blog. Different models and motivations drive zero-rating in various markets, and it can be competitive or anti-competitive.

Making an economic case for zero-rating, Eisenach (2015) suggests that "zero-rating (in the context of network effects) is appropriately understood as a mechanism for achieving increased participation within relatively small communities, including within lower-income populations in developing economies." Eisenach further argues that in the context of differential pricing, or competitive price discrimination, zero-rating offerings can be viewed as "mechanism(s) by which mobile carriers engage in efficient price discrimination through the bundling of two goods (mobile wireless service and content), thereby creating the ability for marginal consumers to pay a reduced price by choosing a differentiated product in the form of a 'basic' form of online access." This, however, is highly contested, and actually considered harmful. It is widely considered that this approach would disadvantage small players and startups, leading to anti-competitive behaviour (Drossos 2015).

Zero-rating is a means by which mobile operators (also viewed as platform providers) “create opportunities for distribution by content providers by increasing the number of subscribers, while enhancing the value of the platform for subscribers by increasing the amount of available content” (Eisenach 2015). Carriers will offer zero-rated services, even when not financed by a content provider due to the value increase of their platforms. Furthermore, zero-rating of platforms such as social media networks - where consumers are also content providers - increases both the number of content consumers and the amount of content available. Mobile wireless carriers will likely embrace zero-rating as a tool for product differentiation, in a bid to intensify competition in markets (Futter and Gillwald 2015). Indeed, carriers who are either later entrants into markets, or smaller players keen to benefit from an increased market share, have adopted zero-rating plans across Africa.[1]

There is an emerging distinction between commercial and non-profit uses of zero-rating. Wikipedia Zero, for instance, falls in the latter category; being a not-for-profit, their zero-rating service is designed with net neutrality principles in mind (Wikimedia Foundation 2015). In contrast, Airtel Zero[2] in India would be considered commercial zero-rating, as content providers pay for their content to be zero-rated. Popular forms of zero-rating in most developing markets are service-specific, such as Facebook Zero[3] and Wikipedia Zero. Telecommunications companies in these cases enter an agreement with the content providers to avail their sites to users at no additional cost. Users need not have received or purchased data beforehand to access such sites. Carriers offer free access to basic text-based sites, but charge for access to videos or other multimedia. To carriers, the amount of data through predominantly text-based platforms is negligible enough to zero-rate, and could help people transition to becoming data-using consumers (Francis 2015).

One of the most popular and controversial zero-rating services is Free Basics by Facebook, which is operational in over thirty developing countries. The contention surrounding Free Basics and their zero-rating practices is whether they violate the principle of net neutrality. Free Basics is presented as a not-for-profit zero-rating model, developed and managed by a commercial entity (Facebook), creating much debate about their intentions and hidden interests, which they have been working to clarify and, in some cases, rectify (such as the platform’s name change from Internet.org to Free Basics).

Free Basics zero-rates access to a suite of sites through a single application, in partnership with telecommunication networks. Through the Free Basics app, users can access various pre-loaded sites, some local and others global, and content providers can submit their services to Free Basics (reviewed by Facebook) by following a set of technical specifications.

The controversy surrounding this initiative stems from the seeming advantage that Facebook and select sites (content providers) get from carriers who zero-rate their content at no cost. In its initial rollout, Facebook had a pre-selected range of services, such as its social network and

messaging platform, as well as a range of health, news, and weather information applications. It has been observed that Facebook, a private, U.S.-based company, is taking it upon itself to define what a “basic” service is for developing markets, and to curate - through the specifications for content providers to avail their services on the platform - what constitutes basic Internet service.

Another issue with the Free Basics model is that Facebook can decrypt the content of the apps on its servers, perceived as unfettered access to information about its platform’s users (such as health, for which there are several pre-loaded apps in the various markets). However, Facebook, in its 2015 “technical guidelines”, states that such temporary decryption of Free Basics traffic via mobile websites is “to ensure proper functionality of the services and to avoid unexpected charges to people”, and that they preserve information privacy by only storing the domain name of a service and the amount of data being used.

The “free” in Free Basics is also hotly contested; since the cost of availing Free Basics service data must be recouped by mobile operators, it is possible that this would come from the services not covered under the arrangement, translating to increased cost for those already accessing the Internet, as note in a joint statement from professors on the SaveTheInternet Coalition (India) blog, April 23, 2010, <http://blog.savetheinternet.in/joint-statement-by-professors/>.

Potential Harm of Zero-Rating

The main threat zero-rating could pose concerns discrimination between different content providers; as Michelle Baker notes in “Zero rating and the Open Internet”, on her Lizard Wrangler blog, May 6, 2015, <https://blog.lizardwrangler.com/2015/05/06/zero-rating-and-the-open-internet/>, selective zero-rating (i.e. zero-rating for a few applications and websites, exclusion for the rest of the Internet) could be detrimental to the long-term opportunities and (economic) inclusion of the target demographics. Baker contends that this approach could limit or even hinder the ability of new Internet entrepreneurs to grow on a global scale. The determination (and determinants) of what is subsidised could potentially stifle innovation in local content development, and also dissuade entrepreneurs from entering the Internet economy, if such a practice were to create an environment in which new users accept anything less than unfettered Internet access (Futter and Gillwald 2015).

Eisenach (2015), however, argues that there is no *prima facie* basis for concluding that zero-rating programs involving exclusivity (selective zero-rating) would be anti-competitive. Exclusivity arrangements “typically are justified by efficiency motivations, such as the desire to avoid ‘free riding’ on brand-specific investments. Exclusivity raises competition concerns, on the other hand, only under limited conditions, including that the exclusive arrangement must be

sufficiently widespread so as to foreclose entry (and expansion) by an otherwise equally efficient competitor (i.e. by preventing such a competitor from achieving minimum efficient scale)". In the absence of clear evidence to support the former argument, this and many other aspects of the debate around zero-rating are primarily ideological.

There are also concerns about zero-rating limiting freedoms of expression and of choice. Eisenach (2015) states that this is based more on speculation than empirical evidence, and that the firms engaging in zero-rating, or whose platforms are zero-rated, are vehicles for open expression, "subject to only *de minimis* limitations". Part of the concern is that while social media networks such as Facebook and Twitter, which currently dominate zero-rating plans in most markets, may be platforms for free expression, this does not necessarily translate to a diversity of options through which Internet users can freely express their views. Should these popular sites (perhaps made so through zero-rating plans) be inaccessible for whatever reason, it is worth pondering whether users would be able to afford access to alternative platforms for expression that are not zero-rated. Zero-rating of certain platforms, which may rightfully be avenues for free expression, also takes away users' choice to determine which applications or sites are best for them to express themselves, especially if cost is the primary barrier to accessing the Internet.

A pervasive argument for availing Internet access to the world's poor in particular, and in defence of zero-rating models such as Free Basics, is that they are providing some (Internet) access, which is better than none. Just as it is the case that most stakeholders believe in upholding net neutrality, the point of departure for this argument is in the "how": that is, how some access - which is better than none - is determined. The tradeoff thus presented is "a lesser degree of inclusion over openness and equality of opportunity" as Baker notes on her blog. This tradeoff, however, does not reflect the issue at hand; rather, the real tradeoff is "between expanding Internet uptake and setting a precedent that will make it harder for users to freely access the Internet" (Futter and Gilwald 2015). Opting for limited inclusion today may offer short-term benefits, but as Baker notes, will likely pose "significant risk to the emergence of an open, competitive platform, that will ultimately stifle inclusion and economic development".

Essentially, what we have is "a clash of values: between access to the Internet (in a limited form) and the maintenance of neutrality in an atmosphere that is inherently unequal" (Parthasarathy 2015), making the tailoring of a solution to this problem an arduous process. A false premise has seemingly emerged; those arguing for net neutrality are, in effect, against increased Internet penetration. Indeed, some access to the Internet is better than none. The contention, however, lies in what constitutes "some" access, who determines "some", and why they get to do so on behalf of the consumer (Sambuli 2015). The apprehension lies in the theoretical laudable end (increased Internet access) but unethical means (selective zero-rating, defying of net neutrality principles). If Facebook alone makes the consumer choice decision, for instance, which might contradict the notion that every developer has an equal chance to be a

part of Free Basics, subject to certain criteria, “what we have is almost a paternalistic web. In such a situation, information, far from being free, is shackled by constraints imposed by the service provider”(Parthasarathy 2015).

It is also important to note that in these spirited debates about availing Internet access to underserved communities, their voices are largely missing. This points to a glaring gap in the multistakeholder approach to Internet governance. The “next billion” Internet users need to be explicitly acknowledged and represented as stakeholders; it is insufficient for others to speak and deliberate on their behalf, and without their input.

“Equal Rating” as an Alternative Model

A study by the Alliance for Affordable Internet (2015) found that despite the attention that zero-rating receives, it was not the most popular practice in eight developing markets assessed. Out of 181 plans reviewed in eight developing markets,[4] only thirteen per cent were zero-rated plans. Service-specific plans, where a user purchases a data bundle that facilitates access to a specific set of sites for a specified period of time, were the most common. With this approach, “mobile phone companies...engage in different marketing strategies to improve their customer base while responding to what they perceive as services that are in demand” (A4AI 2015).

Given the differing points of view, and very little empirical evidence (especially from developing countries) on the effects of zero-rating and differential pricing, it is worth exploring alternative models for enhancing affordable Internet access. “Equal rating” (or “zero-rating for all”), for instance, has been proposed as a model, based on the premise that, as Michelle Baker notes on her blog, “all data is transmitted at the same price, whether that price is ‘zero’ or anything else”. The idea is that consumers can select content to access based on quality, not the financial power and business partnerships of the provider. The private sector is envisioned organising itself to provide a “baseline equal rating” for some data at a discounted rate or no charge. An example cited is the Orange and Mozilla partnership, unveiled across a range of developing markets in Africa and the Middle East, which targets consumers who would otherwise find access to mobile Internet unaffordable. The offer, starting at less than USD 40 (EUR 35) avails a consumer with a smartphone, data, and a voice and text bundle. A typical data bundle is up to 500mb per month for six months (depending on the market), with the opportunity to top-up when reaching the end of the bundle (Orange 2015).

Steve Song, in “A Better Approach to Zero-Rating”, on his *Many Possibilities Blog*, November 11, 2014, <https://manypossibilities.net/2014/11/a-better-approach-to-zero-rating/>, proposes that “equal rating” is posited as a “more egalitarian approach to zero-rating”, benefitting all content and service providers and upholding the Internet’s role as a “fitness landscape for new ideas”. Providers would also be incentivised to optimise their applications and sites in terms of data

consumption. Value for operators would likely be gained from encouraging adoption of 3G access as more people begin to value online services, and the network effects of new data users would likely increase the value of data services. The role of governments could be to offer flat incentives to operators to zero-rate 2G. Other impacts would include providing justification for government investment in e-services, as data would be legitimised as a means of civic communication. The approach could also decrease the digital divide; free low-bitrate access to data “would create a true on-ramp to the Internet” and its diversity of offerings, as Song notes in “Zero-Rating: A Modest Proposal”, Many Possibilities Blog, November 25, 2015, <https://manypossibilities.net/2015/11/zero-rating-a-modest-proposal/>.

While Song’s proposal is yet to be tested, and particularly in developing markets, it has been seen to be in effect for roaming post-paid customers on US operator networks such as T-Mobile and Sprint (Martonik 2015). This could be a viable idea to connect more users to the Internet while upholding the architectural principles of the Internet.

Another equal-rating model observed in the market is “earned data”, where a user receives data in exchange for performing some action. The action could be as simple as viewing ads in order to access other sites, a model pursued by Mozilla and Grameenphone in Bangladesh or completing surveys, watching videos, or contributing to marketing-related activities (A4AI 2015).

Recommendations on Regulation Considerations

It has been argued that the regulatory approach pursued in some countries may not be the right way to resolve the developing issues in the varied approaches to availing affordable Internet to all. Regulation, for instance, could allow governments to determine which content could be zero-rated, defying the very premise of net neutrality; that no one should decide to what the user has access. It has also been observed that the regulatory approach by governments could create room for contradictory rulings, such as in Chile where zero-rating is not allowed under the net neutrality laws, but Wikipedia Zero is exempt. There could also be implications for free expression and censorship if governments have the ability to control content available on the Internet, as Michelle Baker notes on her previously cited blog post.

In deliberating whether to pursue net neutrality regulation, regulators in developing countries could consider the following: (i) Regulatory principles should be applied both to the telecommunications service providers and to the providers of services over the Internet. Issues such as data protection and sanctions should be addressed based on the characteristics of the services, and not on the platform that provides them (Bello and Jung 2014). (ii) Network management, in cases involving special treatment of certain data packets, must be based on the service and not on the provider. Any special treatment for related companies that are in the content and/or applications market should be avoided, and under no

circumstances should the quality of access to a provider or a particular service be 'degraded' (Bello and Jung 2014). (iii) In the case of zero-rating, positive discrimination that has a negative impact on effective competition should not be permitted, since in such cases, it is equivalent to negative discrimination. Positive discrimination that does not have a negative impact on effective competition may be permitted, especially since it results in increased access and increases consumer benefit, as long as the damage to openness and diversity is minimised notes Pranesh Prakash on The Centre for Internet and Society Blog, 8 July 2015, <http://cis-india.org/internetgovernance/blog/regulatory-perspectiveson-net-neutrality> . (iv) A regulator should not prohibit an act that does not negatively impact access, competition, consumer benefit, or openness (including diversity), since that would be over-regulation and would harm innovation, as also noted by Prakash.

There is a need for more data and/or empirical evidence to support or refute various claims and points of view on whether zero-rating is a viable model that can uphold the principles of an Open Internet. It is not yet known, for instance, if users cease to use or diminish their use of the Internet once they have to pay for access beyond the zero-rated sites or platforms. [5]

Further research is required to better establish the merits (or demerits) of zero-rating. Data collected from operators for billing purposes, for instance, could be used to assist in assessing the impact of zero-rating services on the Open Internet, especially data on free and paid use by the newly connected, for whom these services are rolled out. The same applies to Facebook's Free Basics; publicly availing its data would allow researchers and other stakeholders to verify their claims on the platform's impact (Futter and Gillwald 2015).

Research also needs to be undertaken on whether zero-rating offerings create a digital divide between those who have unlimited access to the Internet and those with limited access to zero-rated content. Evidence to suggest whether data prices could increase (as a result of zero-rating becoming a widely adopted strategy) and make it harder for users who currently access the Internet to pay for unfettered usage, linked to the competitive environment in each market, would be useful for all stakeholders to make informed decisions (Futter and Gillwald 2015).

On the question of whether Internet access (for the unconnected) is at the cost of net neutrality, ultimately, we must view net neutrality as a concept that stands for the values that we want to build as a society; it pertains to concerns about ensuring freedom of expression and about creating an open space for ideas where democracy can thrive. (Parthasarathy 2015)

Conclusion

The net neutrality debate is likely to remain a contentious issue in Internet Governance. Zero-rating as a practice to advance Internet access to underserved communities will demand the attention of regulators in developing countries, whose citizens are the intended beneficiaries. While zero-rating may offer undue advantage to some actors over others, as noted in many models, it could also be a viable model for making the Internet more affordable. The challenge lies in how to make the Internet as affordable as possible for current users and the “next billion” users, while upholding the fundamental principles of the Internet, as an open, free and secure platform for all. The Internet should not further entrench inequalities and societal divides as it continues to grow in significance and ubiquity. More empirical data and research is needed to inform regulatory considerations and decisions. The current pushback against some of the proposals (by private industry players) to enhance Internet access can be interpreted as increased civic engagement by stakeholders, advocating for and defending the future of the open Internet. There are numerous benefits to be reaped from ubiquitous Internet access in developing economies, which could include fast-tracking many development agendas. However, this is largely dependent on the management of the Internet; whether a few actors will have undue influence on quality, and at what cost the Internet will be accessed. Regulators in developing countries, therefore, must pay attention to the global debates, and assess the solutions presented for advancing Internet access in their markets, with the aim of ensuring that the net neutrality principle is upheld.

Notes

[1] Airtel, for instance, has a presence in several African markets, mostly as a smaller player. Facebook has partnered with Airtel to roll out Free Basics in those markets. Cell C in South Africa also offers Free Basics, possibly as a strategy to gain market share.

[2] Airtel Zero is a platform through which Bharti Airtel, the leading telecommunications service provider in India, would offer users free access to certain mobile applications and services from companies who have signed up with the telco.

[3] Facebook Zero is an initiative undertaken in collaboration with mobile carriers to access a stripped-down, text-only version of Facebook’s mobile website. It differs from Free Basics, which is a suite of zero-rated applications, including Facebook itself.

[4] Of the eight markets studied, three were in Africa: Kenya, Nigeria and Ghana

[5] The only data point addressing issue this comes from Facebook, who suggest that fifty per cent of Free Basics users “graduate” to the paid-for Internet within 30 days of use. It is not clear if the crossover is permanent, or for one-off visits to sites or links that are outside the Free Basics platform.

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