Global Commission on Internet Governance

Net Neutrality: Reflections on the Current Debate

Pablo Bello and Juan Jung

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The Global Commission on Internet Governance was established in January 2014 to articulate and advance a strategic vision for the future of Internet governance. The two-year project conducts and supports independent research on Internet-related dimensions of global public policy, culminating in an official commission report that will articulate concrete policy recommendations for the future of Internet governance. These recommendations will address concerns about the stability, interoperability, security and resilience of the Internet ecosystem.

Launched by two independent global think tanks, the Centre for International Governance Innovation (CIGI) and Chatham House, the Global Commission on Internet Governance will help educate the wider public on the most effective ways to promote Internet access, while simultaneously championing the principles of freedom of expression and the free flow of ideas over the Internet.

The Global Commission on Internet Governance will focus on four key themes:

- enhancing governance legitimacy — including regulatory approaches and standards;

- stimulating economic innovation and growth — including critical Internet resources, infrastructure and competition policy;

- ensuring human rights online — including establishing the principle of technological neutrality for human rights, privacy and free expression; and

- avoiding systemic risk — including establishing norms regarding state conduct, cybercrime cooperation and non-proliferation, confidence-building measures and disarmament issues.

The goal of the Global Commission on Internet Governance is two-fold. First, it will encourage globally inclusive public discussions on the future of Internet governance. Second, through its comprehensive policy-oriented report, and the subsequent promotion of this final report, the Global Commission on Internet Governance will communicate its findings with senior stakeholders at key Internet governance events.

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EXECUTIVE SUMMARY

The debate over net neutrality began in the late 1990s in the United States. Since then, it has been gaining momentum in several fields, generating dichotomous positions between different sectors. As a contribution to the debate, this paper attempts to separate the unquestionable principles — such as the need to preserve the Internet as a space that is open to innovation, and the freedom of users to access content and services — from the dogmas and beliefs that are put forward in the name of neutrality, but which affect the sustainable development of the digital ecosystem.

Telecommunications networks and services and providers of content over the Net uphold the digital ecosystem, and it is essential that both can develop sustainably, with equivalent regulations and principles. This raises two important thoughts. First, it is important to promote investment, innovation and competition, preventing distortions through the relationships produced within the digital ecosystem. Second, the regulatory principles should be balanced between the different actors of the value chain. Meeting certain basic principles in favour of competition and against arbitrary discrimination would create the conditions for fostering the development of the digital ecosystem.

INTRODUCTION

Net neutrality is often associated with the principles that guide the handling of traffic circulating over Internet networks. However, the lack of a precise and concrete definition has led to different interpretations by different agents. For some, net neutrality refers to the need to ensure the openness of the Internet, preserving users' free and nondiscriminatory access to content, applications or services available on the Internet. For others, net neutrality instead implies that all data on the Internet should be treated equally.

The debate began in the late 1990s in the United States and has since gained momentum in academia, civil society, the technical community and the private sector linked to Internet and telecommunications. As summarized by Paul Njoroge et al. (2013), on the one hand, enterprises related to content usually state that departing from net neutrality could threaten content innovation. On the other hand, Internet Service Providers (ISPs) may argue that strict net neutrality regulations can harm the return on investments, weakening the economic incentives to invest and upgrade their infrastructures. One of the most important academic contributions to the net neutrality debate came from Tim Wu (2003), who referred to the importance of giving users the right to use non-harmful contents or applications, and to give innovators the corresponding freedom to supply them. Wu examined the concept of net neutrality and its importance in promoting innovation, focusing

the analysis on three different approaches for regulation. Christopher S. Yoo (2005) expressed some concerns regarding the possibility of regulating net neutrality, as it may prove ineffective in such a dynamic framework, and may reduce incentives to invest in wider network capacity. He proposed an alternative approach, called "network diversity." Later, Wu and Yoo (2007) became engaged in a popular debate in which they contrasted their respective points of view. Various authors continued to study this subject from different angles. While Daeho Lee and Yong-Hwa Kim (2014), for instance, focused the analysis on ISPs' incentives to discriminate against application services, other authors, such as Gernot Pehnelt (2008), emphasized the welfare-loss problem caused by congestion problems, arguing in favour of the possibility of differentiation of data packets according to their quality sensitivity as a remedy. In any case, most fears of certain sectors come from the possibility that telecommunications operators could increase control over the content and applications that operate over the Internet, emphasizing the need to maintain end-to-end communication. Some of these fears have even led to proposals arguing against the diversity of commercial plans offered to users.

Over the last few years, debate has given way to regulations that have been implemented in various countries, and which have increased the intensity of the discussions in the public sphere. In the United States, the Telecommunications Act of 1996 represented a major change in the previous telecommunication law, as it included references to the Internet for the first time; however — and this is a key aspect — ISPs were not classified as common carriers.[1] More recently, the Federal Communication Commission (FCC) promoted its principles for "open Internet" in 2005, which were followed by the 2010 Open Internet Order. The 2005 principles were mainly related to consumer rights, such as the ability to access any lawful contents, and to choose any legal devices, providers, applications and services. The 2010 order emphasized rules regarding transparency, no blocking and no unreasonable discrimination. More recently, in January 2014, the DC Circuit Court stated that the FCC has no authority to enforce net neutrality rules and, as a result, in April 2014 the FCC announced a proposal that may allow ISPs to build special lanes for certain traffic, provided that it does not harm consumers or decrease competition. In November 2014, US President Barack Obama issued a statement proposing the FCC classify broadband under Title II[2] of the Telecommunications Act, a move that was recently approved by the FCC, and which implies that the Internet would be regulated as any other utility. Outside the United States, Chile and Colombia have approved flexible

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1   The definition mainly refers to telephone services.

2   Title II refers to the classification as common carriers as defined by the Telecommunications Act of 1934.

legislation on net neutrality. In the case of the European Union, former Vice-President and Commissioner for the Digital Agenda Neelie Kroes stressed on several occasions her stance in favour of freedom of choice for users, and the need for a commercially differentiated supply.

It is important to bear in mind that currently when aspects related to net neutrality are debated, fundamental freedoms and principles should not be at stake. In fact, in the countries in which net neutrality discussions have taken place, there is no evidence of ISPs aiming to block legal content. There seems to be consensus over the need to avoid arbitrary discrimination practices, the blocking of legal services and any practice leading to the degradation of service quality for arbitrary reasons. Any activity that distorts the market should be avoided, whether it comes from access providers or content providers. To the extent that it is accepted by all those who participate in the debate, it will surely contribute to bridging differences.

However, one characteristic of this current debate is the polarization of the arguments employed, without qualification or an adequate conceptualization of the problem. Some actors have little interest in understanding divergent points of view. This is the situation that has encouraged the authors to write this paper in order to provide reflection without dogmas.

From the authors' point of view, net neutrality debates basically refer to competition, investment and innovation within the digital ecosystem. As pointed out by Yoo (in Wu and Yoo 2007), the debate can be viewed as an "intramural fight between large content providers (such as Google) and the large network providers (such as Verizon and Comcast)." In the last 10 years especially, the context of the debate has changed. In particular, important investments and deployment of wireless networks, and the development of advanced wired networks, have increased considerably the connectivity options for end-users, a fact that suggests that the role of access networks as gatekeepers of the Internet has decreased (and will probably continue to do so), while, on the other hand, there is an increasing concentration in the provision of services and contents over the network.

Ensuring that the Internet is maintained as a space that is open to innovation is a principle on which this reflection can be based. In this sense, Wu (2003) has expressed the necessity of understanding net neutrality in terms of safeguarding competition and innovation. The capacity to develop new services, new solutions, new applications and new technology is what has enabled the considerable progress made in the development of the Internet globally. Openness to innovation is inherent to the Net, and surely every actor within the digital ecosystem will agree on the importance of preserving this. In fact, it is rare to hear voices in debates on the subject opposing innovation. The

freedom of users to access content and services is also not in dispute.

A second essential aspect when approaching this discussion is related to the subject of analysis. In the pre-convergence era of telecommunications and information technology, the separation between physical infrastructure (networks or hardware) and services provided over that infrastructure (telephony, television or software) could be understood. With convergence, the layer/tier model has become much more porous and it makes increasingly less sense to refer to telecommunications networks as something dissociated from the Internet and the services offered over it.

This is a key aspect of the discussion. The "Internet's openness" should be understood as a guiding principle that transcends each of the layers/tiers and extends throughout the digital ecosystem, and that each of the stakeholders of this ecosystem is essential to its development. This means that there needs to be innovation, competition and investment in the telecommunications networks, as well as in the intermediaries, services, content and operating systems.

This paper is structured as follows: First, a description of the so-called digital ecosystem is presented. This is followed by a number of principles that are understood to be necessary to keep the Internet as a space that is open to innovation. Finally, the discussion around net neutrality is presented, along with some final thoughts.

Figure 1: Evolution of the Global Traffic over Internet Networks
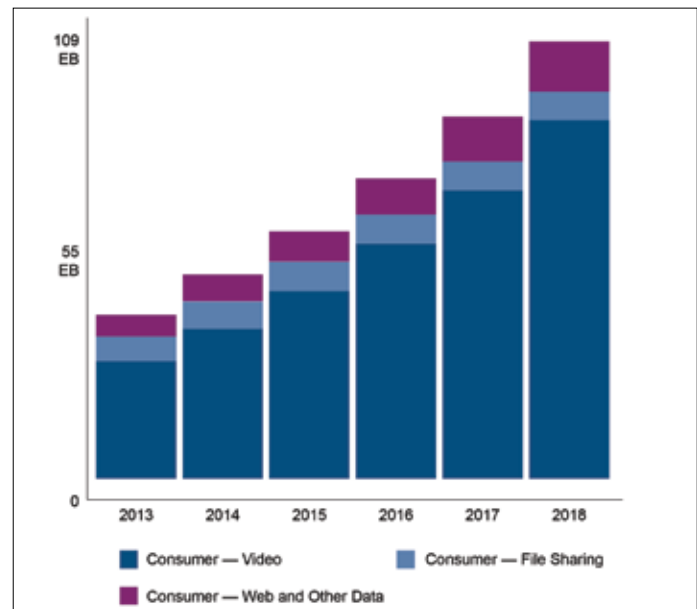
Source: CISCO (2014).

Figure 2: Evolution of Internet Users and Traffic — The Case of Latin America
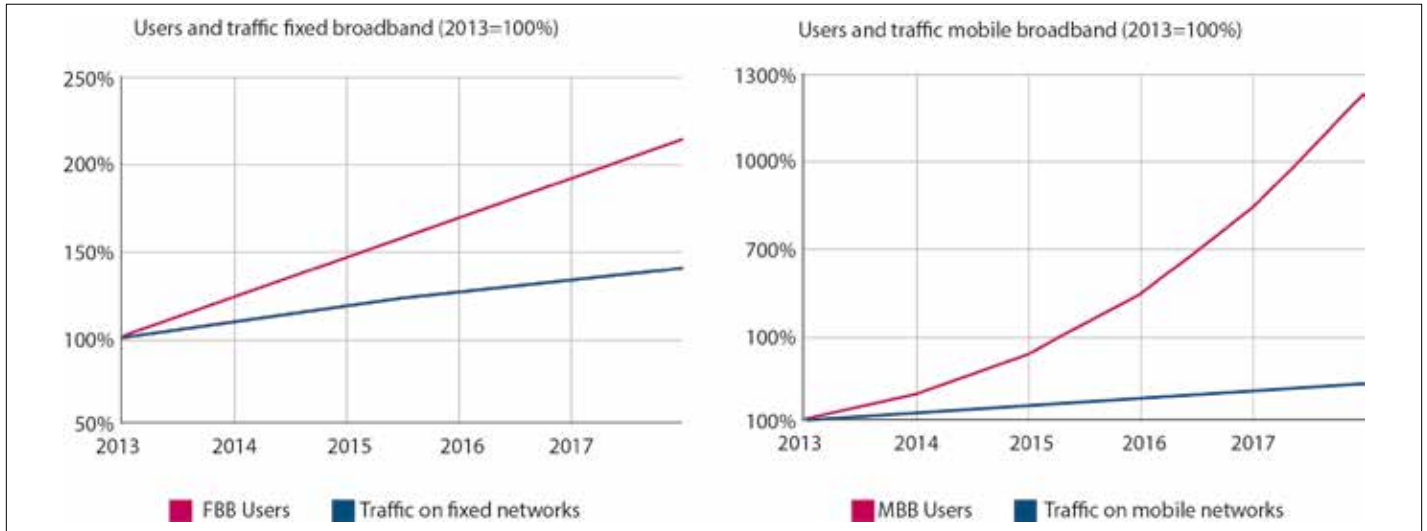
Source: Authors' calculations based on estimates by Convergencia Research and CISCO VNI Widget. The countries covered are Argentina, Brazil, Chile and Mexico.

THE DIGITAL ECOSYSTEM

As a result of the transformation experienced by telecommunications and information technologies over the last 20 years, and in particular in the last decade with the explosion of Internet and convergent services, a new space has been configured: the digital ecosystem, in which the networks and the services provided over the networks must necessarily coexist harmoniously and sustainably. In other words, without telecommunications networks there is no Internet, but without services and applications the Internet is pointless.

The basic issue, therefore, is to ensure the appropriate conditions to maximize the joint development of the two essential components of the ecosystem. This would contribute to maximizing general welfare, a goal that must be taken into account in discussions related to the digital ecosytem.

CURRENT TRENDS

In recent years, there has been an accelerated expansion of services provided over networks that are increasingly bandwidth-intensive, in particular derivatives of multimedia services, mainly using voice and video. These trends are expected to intensify in the coming years. Figure 1 shows the foreseeable evolution of the expected residential traffic for Internet networks, worldwide, until the year 2018. The graph shows the increasing levels of expected traffic, which will generate significant pressure on the capacity of current networks. This will require significant investments to expand the networks' capacity and ensure the quality of service required. This increased traffic is mainly associated with the use of video over
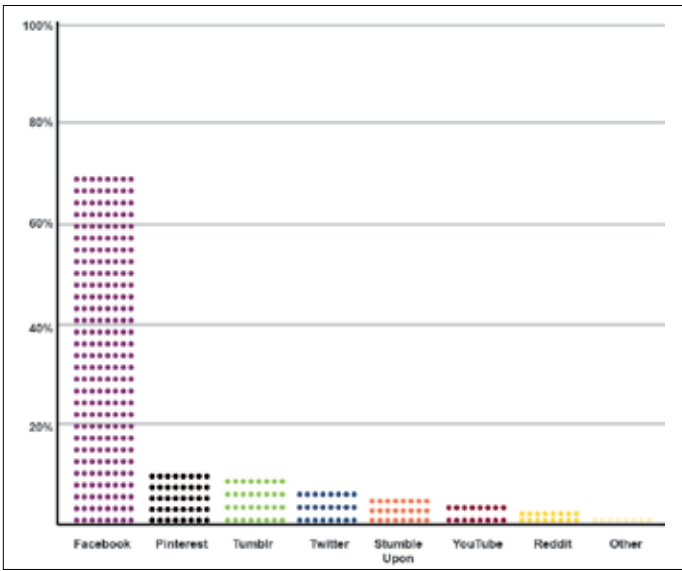
the Internet, but will also have to take into account the "massification" of the Internet of Things (IoT), which will generate an exponential increase in the number of connected devices. In any case, it should be noted that a small number of intensive users are the main originators of traffic, either through the use of video or through content downloading. According to data produced by CISCO (2010), one percent of broadband users are responsible for 20 percent of the total traffic, while 10 percent of users generate 60 percent of traffic worldwide. These facts are especially relevant since, as stated by Yoo (2005), net neutrality debates are usually based on the assumption of uniformity of consumer demand, something that clearly no longer holds true.

There has been a substantial global increase in telecommunication indicators in recent years. Worldwide, annual investment in telecommunications services has increased more than 60 percent since 2000 (International Telecommunications Union [ITU] 2014).[3] Global fixed broadband penetration has doubled and mobile broadband penetration has been multiplied eight times since 2007 (ibid.). The quality of Internet connections is also continuously increasing. Year-over-year global average peak connection speed had increased by 38 percent by the third quarter of 2014 (Akamai 2014).

Despite all this, telecommunications infrastructures may not have been able to grow at the same rate as data traffic, in part due to the higher deployment times they require, as well as the disincentives that have occurred as a result of lower revenues derived from lower prices. To illustrate this last point, it should be noted that the average revenue per

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3   Authors' estimation from ITU data.

Figure 3: Use of Social Networks (Top Seven Desktop, Tablet and Console Social Media Sites from June 2013 to June 2014)

Source: Stat Counter Global Stats (2014).

Figure 4: Use of Search Engines on Internet (Top Five Desktop, Tablet and Console Search Engines from June 2013 to June 2014)

Source: Stat Counter Global Stats (2014).

user (ARPU) of telecommunications services has declined in all regions in recent years. For example, the overall ARPU for mobile services decreased by 7.6 percent between 2008 and 2012 according to GSMA data (GSMA 2013).

While part of the growth in traffic may be due to a greater number of users, it is also true that existing users will increasingly require higher bandwidth. This is reflected in Figure 2, based on data for Latin America. As can be seen, although the number of users will grow, the expected traffic growth is even higher, especially in the case of mobile networks.

Recent trends are generating a movement of the digital ecosystem's power centres from telecommunications operators to the large providers of content and services over the Internet. In simple terms, few telecommunications companies have a higher market value than WhatsApp[4] (the leading provider of instant messages over Internet with more than 700 million users worldwide), a company with less than 100 employees.

This calls for further reflection on how the various national economies are positioned in the digital ecosystem. The vast majority of services provided over the Internet are based in the United States.[5] They operate in a deregulated environment with increasing concentration.

While in most markets there are acceptable levels of competition in the access segment (which will surely
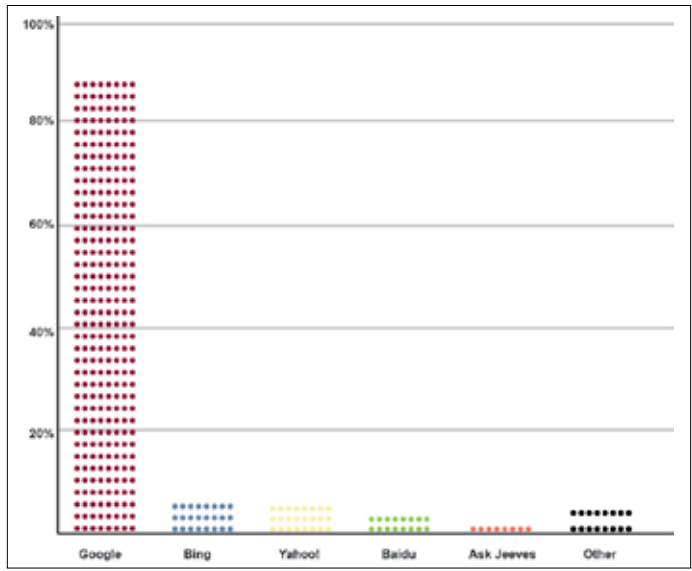
increase with deployment of 4G and 5G technologies), the same cannot be said about the market of services provided over the networks. The oligopolistic tendencies of the Internet services market can be seen in Figures 3 and 4. Figure 5 summarizes the trends in the mobile operating systems market, which also approximates an oligopolistic framework. These trends toward concentration leave very little space for potential challengers. The fact that the Internet services market seems to present much higher concentration levels than the telecommunications industry should remove any concerns about gatekeeper control by the network owners.

Recent market trends also show another phenomenon: the increasing substitutability of traditional telecommunications services (voice or messages) for similar applications provided by companies operating over the network. Because of this, the boundaries of markets become increasingly more diffuse and the relevant markets become broader, which generates the need to promote fair competition along the entire value chain. Contrary to conventional wisdom, in the case of some telecommunication services, widening the relevant markets can deteriorate competition levels, because of the entrance of global dominant players, which are out of the jurisdiction of local regulations.

As a result, when analyzing the competition within the digital ecosystem, this oligopolistic tendency of the Internet services market must be taken into account, in addition to the lack of interoperability between virtual platforms, the absence of portability mechanisms and the indiscriminate abuse of personal information for commercial purposes. Interoperability is essential to

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4   WhatsApp Inc. was sold to Facebook in 2014 for US$22 billion.

5   83 percent of the global capital stock of Internet companies belongs to US-based companies (Telefónica 2014).

Figure 5: Mobile Operating Systems (Top Eight Mobile Operating Systems from August 2013 to August 2014)
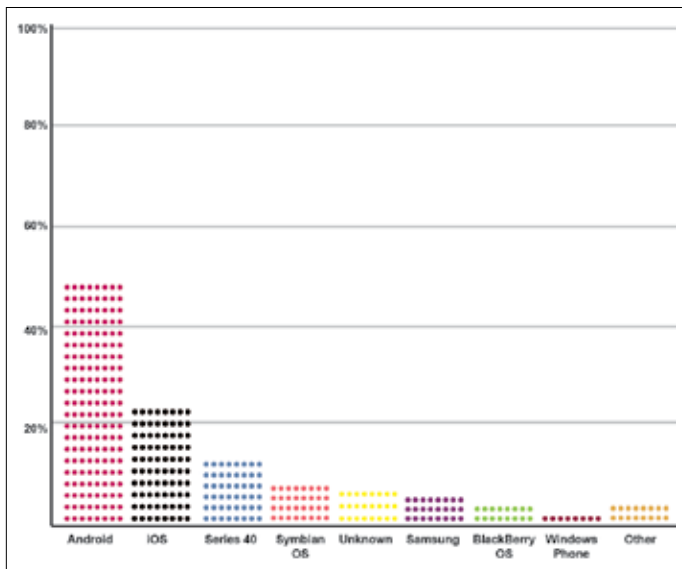
Source: Stat Counter Global Stats (2014).

communicate or interact with any other user regardless of who the service provider may be, while portability enables users to switch companies without incurring in a loss of value. Recent trends resulting from the increase in services provided over the Internet have gone in the opposite direction, generating adverse effects for the user because of the accentuation of a trend toward the creation of closed interaction spaces (monopolistic by nature), contrasting with what telecommunications networks are by nature: interoperable and portable.

THE BEST-EFFORT PRINCIPLE AND THE TREATMENT OF DATA PACKETS

The above, in particular the traffic growth forecasts, shows that the management of traffic over Internet networks should be put forward as an inherent element of the Internet's sustainable development. Competition and measures against arbitrary discrimination should be protected.

Traffic management refers to a number of techniques that can be carried out by telecommunications operators. Management practices can be divided into those of a technical nature (oriented toward avoiding congestion) and those of a more economic or legal nature (associated with the link to the final consumer) (Canadian Radio-television and Telecommunications Commission 2009).

While the Internet operates on the principle of "best effort," the nature of the data packets is not the same in all cases. The fact that they should be treated in differentiated manners when appropriate may be relevant for and to the benefit of all actors in the digital ecosystem.

There are now applications that are more sensitive to latency (delay) than others, something that has led authors such as Wu (2003) to express that the original conception of Internet Protocol (IP) neutrality is dated. For example, synchronous services, that is, those that are consumed "in time," such as the streaming of audio and video or conversations between two or more people, require a higher quality of service, that is, more bandwidth and less delay than asynchronous services, which can wait a little longer and do not need to have a specific order or sequence, for example, an email or web page. The fact that data packets should be treated according to their nature benefits all the actors within the digital ecosystem and maximizes the quality of the end-user's experience. It is network management that does not produce distortions, and it is positive.

Undeniably, changes in consumption patterns of services provided over the Net generate significant challenges that will require addressing. For example, according to data provided by Sandvine (2014), Netflix and YouTube combined currently account for almost half of the Internet download traffic over North American fixed access (34 and 13 percent, respectively, in the first half of 2014), which is, in turn, growing exponentially, requiring that the issue of financing the necessary investments to expand network capacity be addressed.

These changes in consumer patterns, which were also evidenced in the continuous growth of the traffic/users ratio (see Figure 2), are a challenge to address because networks were effectively designed considering an expected behaviour from the users, which have been largely overtaken by these facts. The architecture of telecommunications networks, like that of any transport network, is designed following probabilistic usage parameters. This is also the case in networks designed to access the end-user, where the range depends on the probabilistic factor of "last mile" technology. Because the networks are designed to support certain capabilities, the use intensities must be adjusted if there is a very significant deviation from what is normal.

Consider an analogy with the real world: If a very large load needs to be transported through a tunnel, and no one else can use the tunnel while the move takes place, it is clear that to minimize the impact on other users who are interested in using the infrastructure, the move must occur at a time when there is a very low demand. The same applies to certain users who make a very intensive use of the Internet's network capacity. Commercial broadband plans, both in regard to price and installed capacity, are designed for the average user and a "reasonable" maximum deviation from this average. Those who make ultra-intensive use of the facilities degrade the quality of service for other users, just like the large load in the tunnel. Accordingly, bearing in mind technical considerations, it is convenient to manage the use of available capacity in

the network to maximize benefits for the vast majority of actors in the digital ecosystem.

Sudden changes in consumer patterns affect the parameters of network design and, as a result, its structure of costs is also affected. There are three options when faced with this situation: a decline in the quality of service for all users; increasing the price of Internet access, which affects those who have not yet accessed the services (and those who have but are not intensive users of videos); and exploring mechanisms so that traffic with an obviously commercial nature contributes to finance the required investments.

As an example of these mechanisms, which may help to contribute to finance investments, specific cases in which someone other than the end-user pays for the connectivity, at least partially, can be mentioned. For example, cases of two-sided markets are the possibility of selling ebooks through Amazon for Kindle devices; or the existence of toll-free 800 numbers, where end-users do not pay for the phone call. Another example can be found in the "sponsored" zero-rated services. These are services provided through mobile networks that are not charged to the end-user (companies such as Facebook and Google provide this kind of service).

In any case, what matters is that competition should not be distorted and anyone should be able to access specialized services. Over-the-top (OTT) services should not be intentionally forced to use alternative channels; ultimately, the service provider should be able to choose how to provide a service.

THE FALSE PREMISE OF SINGLE-SPEED INTERNET

The possibility of having specific lanes for certain traffic has led to some actors arguing against what has been called a "two-speed" Internet, as it would supposedly represent a departure from the "single-speed" model. However, this argument is based on the assumption that the Internet is currently of a single speed, when the reality is that the Internet is of n speeds.

In fact, because of the very nature of the Internet, to the extent that the content and/or applications servers are "further away" from the end-users, the quality as perceived by them (the "speed") decreases. There is a single network and to be visible on the Net and be able to provide content, it is enough to have a PC converted into a server at home, connected to an asymmetric digital subscriber line (ADSL). A user who is thousands of kilometres away will require many international links and intermediate servers to access that content. If many users wanted to access the content, link and server capability would quickly collapse. And if they wanted to upload content requiring more bandwidth, the ADSL link may prove to be insufficient.

For example, on an old PC with Linux, far away from the final user, the content that it hosts will not be easily accessible — it will be "slow" and poor quality. If the provider of that content wants to improve the quality of service, they will have to increase the contracted bandwidth (pay) and buy a bigger server (pay). If things go well they will possibly then need to host content in a data centre (pay) and further increase the contracted bandwidth (pay). If the provider continues to grow, they will want to provide better service, so they will go to a content delivery network (pay). Each step will mean more capacity and more proximity between the content and the end-user. Each step taken will result in "more speed" from the end-user's viewpoint. The quality of service can continue improving. The content provider can connect directly to the same Internet provider as the end-user (pay) and require a dedicated link to the nearest station (pay), or a transport service with guaranteed quality of service (IP, no Internet) within the network (pay). It is the content provider who decides where to connect in order to optimize the total cost of accessing the end-user and the quality of service offered.

It is clear that it is not one speed but n speeds. The possibility of getting closer to the end-user is certainly very valuable for many services over the Internet that require a higher quality of service and very high bandwidths, such as video streaming services. In a context in which the demand for data has grown exponentially, absorbing the networks' capacities and therefore tending to degrade the quality perceived by the end-users, the option of having separate "high-speed" channels for services with very intensive bandwidth requirements could be beneficial to all users, including those who do not use those particular services. It would improve the customers' experience of the services and could generate revenues to finance the expansion of network capacities.

It is fitting to reiterate that, in essence, this service, which could be provided by a telecommunications company within its network, is no different conceptually than what content delivery networks or data centres connected to an Internet exchange point do. That the content and/or applications provider pays to improve the quality of service to the end-user is not new. In addition, it should be up to the service provider to decide where and how they connect to the network to offer services to the end-user. No actor in the production, transport and distribution chain can be allowed to artificially degrade the quality of Internet access to determine which particular connection mode providers use. The argument that innovation would be affected by the fact that one more opportunity exists to improve the quality perceived by the end-user does not seem tenable.

PRINCIPLES FOR AN OPEN INTERNET

As mentioned in the introduction, there seems to be consensus on the need to preserve the Internet as a space that is open for innovation, as well as on the importance of safeguarding the freedom of users to access content and services. In current debates, this is not in dispute. The express prohibition against blocking any kind of content or service that falls within the law is the most important guarantee to ensure that the Internet will remain open.[6]

The same freedom of choice guaranteed to users of applications and content over the Internet applies to their developers. Any service someone wants to offer over the network, to the extent that it meets the legal conditions that each country has established, may be offered to all network users, without restrictions and without prior demands of any kind. This is also a basic principle, inherent to the integrity of a global network that has been characterized as, and will continue to be, a space that is open to innovation and entrepreneurship. All the big actors who currently offer services over the network were, in their early days, projects conceived and developed by entrepreneurs with an innovative idea.

The above does not prevent certain malicious content, which affects the quality of Internet services and may generate harmful effects over the Net or on user devices, from being restricted or limited by telecommunications operators. This also requires the possibility that the Net may be managed. There is consensus on the importance of minimizing spam, limiting the spread of viruses and protecting equipment on the local network from denial-of-service attacks. This kind of application ban seems clearly justified, because, as expressed by Wu (2003), the intervention is related to solving a clear problem of a negative externality. Under national laws or existing authorizations, certain content can and should be blocked in the name of the greater good, for example, content related to child abuse. In other words, there are circumstances that reasonably legitimize blocking certain content, regarding those who would wish to offer it as much as end-users wishing to access it.

In order to maintain compliance with the above principles, network management must be based on the premise of transparency, both for end-users and for those who provide content and services over the Internet. The above examples show that it is not about discrimination itself, but if that discrimination is justified or not (non-arbitrary discrimination), and its eventual impact in the market.

Network management should be carried out based on commonly accepted technical criteria and principles of reasonableness. It is essential to ensure that network management does not generate negative effects on the digital ecosystem as a whole, including, undoubtedly, competition.[7] Eventual concerns on anticompetitive effects, either from ISPs or from services over the Internet, must be mitigated with flexible and soft regulation, as well as through the competition authorities. Clearly, this implies that any arbitrary degradation in connectivity quality should be avoided, and it is important that interested parties are able to verify this through public information about the network parameters. Promoting transparency in the information will be key in this sense.

Irrespective of the above, technological and commercial innovation on the Internet, through the development of the telecommunications networks, is essential to maximize consumer welfare and the digital ecosystem as a whole in at least three ways: to allow the possibility of offering the consumers low price connectivity services with specific restrictions associated with content or services; to allow (or to not limit) the possibility of offering free access to some services or contents on the Internet (zero-rated services); and to allow agreements between ISPs and companies that provide contents or services over the Internet to provide higher-quality services. These modalities should be prevented from having a negative effect on competition within the digital ecosystem. For that reason, special conditions should be equally available to all concerned, through public offerings, which should be auditable, to ensure no special treatment for vertically integrated services, in particular in the case of those models that involve a quality standard in fast-lane access. This must be done without damaging the quality of normal "best effort" access. To prevent any harm to competition and innovation levels within the digital ecosystem, transparent conditions will be needed, as well as guarantees for its publicity and auditability. Flexible models for access will undoubtedly be beneficial to end-users, but also to those service providers who may require special access. This will become even more relevant with the increased quality of multimedia content (ultra high definition) and the development of the IoT.

Ultimately, the principles that should be ensured can be translated into the following conditions for telecommunications companies:

- banning the blocking of content that can legally circulate;

- banning the artificial degradation of the quality of connectivity services;

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6   In fact, evidence indicates that in most cases where content and/or services provided over the Internet globally have been blocked, the decision has not been made by telecommunications operators but by governments as an instrument of censorship or, what is worse, it has been the unilateral decision of Internet content and services aggregators at a global level.

7   The proposal currently being debated in the United States and the regulations established in Chile, Colombia and Brazil, to name a few cases, consider these principles for reasonable network management.

- banning preferential and exclusive treatment for related companies;

- possibility of equal access of all stakeholders to special service conditions; and

- complete and adequate information about the conditions of service.

Similar criteria (non-arbitrary discrimination) must be applied to companies that provide services and/or content over the Internet, in particular those with intermediation roles in the digital ecosystem, which so far have not been subject to these criteria. According to an article published in *The Wall Street Journal* (Winkler 2015), it was known that some staffers at the US Federal Trade Commission (FTC) had recommended charging Google with violating antitrust laws. An FTC staff report dated from 2012 argued that Google incurred in the practice of altering search results to favour its own services, although the commission did not take any action at that time. More recently, the European Commission has sent a Statement of Objections to Google arguing that the company was abusing a dominant position, in breach of EU antitrust rules, by favouring its own comparison shopping product in its general search results pages.[8]

The criteria Google uses to prioritize searches and make those who pay stand out, as well as those used by Facebook to suspend an account or Instagram to delete photos, should be more transparent.

In order to have an open and transparent Internet, issues such as the implications of oligopolistic tendencies in the digital ecosystem and the need to implement interoperability between virtual platforms and portability between systems, as well as to ensure the adequate protection of personal data, should also be considered.

FINAL THOUGHTS

It is important to start building some consensus positions, which may help to guide those countries that may attempt to incorporate net neutrality norms within their jurisdictions. Currently, the countries that have already regulated net neutrality shared a vision of accepting reasonable traffic management practices, recognizing the importance of restricting malicious contents, allowing differentiated commercial plans and highlighting the importance of transparency. These approaches may help to guide any future action in other countries.

An important part of the debate on net neutrality stems from the way of understanding the digital ecosystem and the technological and market trends present within it. As mentioned at the beginning of this paper, the

digital ecosystem is an evolving whole that must be understood comprehensively. The digital ecosystem cannot be analyzed based on the traditional structure of the telecommunications industry. Today users can choose between different Internet access providers and can access countless additional services that are not related either directly or indirectly with the provider. It is essential that freedoms exist that will enable the digital ecosystem to continue evolving in the same way in the future.

As mentioned previously, the digital ecosystem is upheld both by telecommunications networks and services and content providers over the Net, and it is essential that both can develop sustainably, with equivalent regulations and principles. In this context, beyond the previously stated, the misnamed principle of neutrality should necessarily translate as those conditions that maximize the development of the digital ecosystem and strengthen competition within it.

In this regard, there are two crucial considerations. First, regulatory principles (reasonable and where applicable) should be applied both to the telecommunications service providers and the providers of services over the Internet. This is very relevant. Issues such as the protection of privacy and data, tax obligations and sanction mechanisms, among others, should be established based on the characteristics of the services and not on the subject that provides them. An approximation of "neutral" public policy on the digital ecosystem should naturally result in the obligations of an SMS messages provider over the mobile network and an instant messaging service over the Internet being essentially equivalent. Or that "telephone" services over the Internet, which are increasingly replacing traditional telephony, should be taxed in a reasonably similar way. This is relevant because as is already evident, many of the services provided over the Internet are becoming de facto substitutes for those traditionally provided over telecommunications networks, which expands the options for users, but at the same time are receiving preferential treatment from governments and regulators, generating unfair competition that tends to discourage investment in the networks that support the Internet. This is not at all about limiting the users' options, but about balancing the situation and establishing the right regulatory conditions so that the services provided by incumbent operators can compete with the new actors.

The second consideration is even more relevant: it is essential to prevent distortions of competition through the relationships produced within the digital ecosystem. The establishment of treatments that are arbitrarily discriminatory between the fundamental services of the digital ecosystem should therefore be avoided. From the perspective of operators, this means that network management, in those cases involving special treatment of certain data packets, must be based on the service and not on the provider, that any commercial offer made to the

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8   See http://europa.eu/rapid/press-release_MEMO-15-4781_en.htm.

end-user that establishes certain special considerations for some services should be open to all those interested (for example, the "sponsored data" service offered by AT&T), that any special exclusive treatment for related companies that are in the content and/or applications market should be avoided and in no case should the quality of access to a provider or a particular service be "degraded."

Recently the debate on zero-rated services has increased. They are specific applications, usually offered through sponsorship, that allow users (usually a lower cost or at an entry level) to use certain services, benefitting from this "subsidized" access. Portraying these services as an infringement of net neutrality would amount to taking the definition to the extreme. Setting aside this extremism, the existence of these services in no way contradicts the spirit of net neutrality, insofar as there are not arbitrarily privileges to any provider, and the user's freedom of choice is preserved, through transparent information, and without distortion of competition.

Similar criteria should be applied to providers of content and services over the Internet, in particular those that accumulate positions of dominance in certain markets (such as Google in search services, Facebook in social networks or Netflix in video on demand) or that possess certain valuable content exclusively, to prevent them from distorting the market for Internet access. The principle that must be defended is that no actor who could eventually have significant market power in any of the segments of the digital ecosystem should have the potential to distort competition, without having to renounce to maximize the options for users, telecommunications companies and content and/or applications providers. The above measures and adequate transparency in the contractual relationship that may be established enable the harmonious development of the digital ecosystem to be suitably safeguarded.

To the extent that certain essential principles that favour competition and are against arbitrary discrimination are met, there should be no reason to assume *ex ante* that a flexible approach on net neutrality could affect the development of the digital ecosystem. On the contrary, to increase the regulatory burdens, as happened after Internet classification under Title II of the US Telecommunications Act, would surely increase asymmetries inside the digital ecosystem, and this may have an impact on the future development of Internet. On the other hand, a model like the one described benefits all the actors in the digital ecosystem, in particular the users, encourages innovation, facilitates the supply of higher value-added services and promotes the deployment of additional transport and connectivity infrastructure, as the foundation of a digital ecosystem that still faces immense challenges regarding inclusion, in particular in Latin America, where two out of three households still do not have Internet access.

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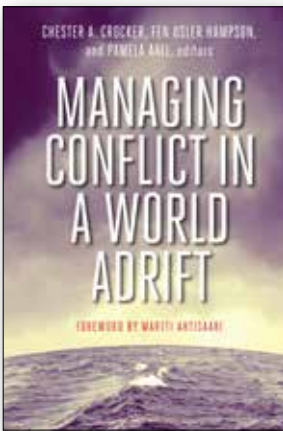
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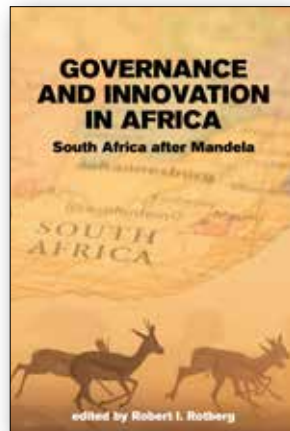
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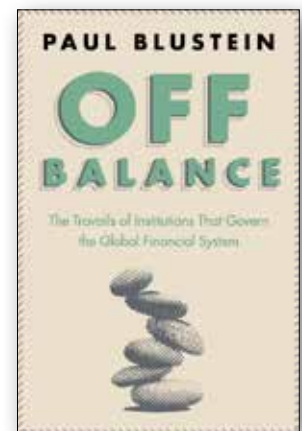CDN$25

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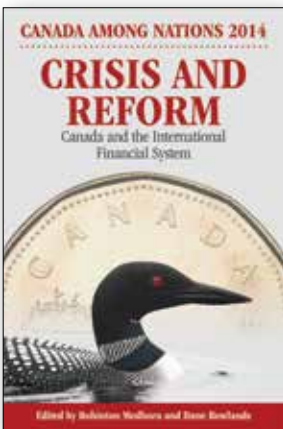
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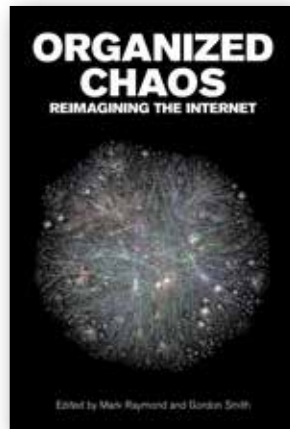
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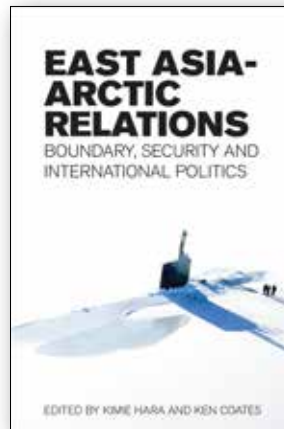
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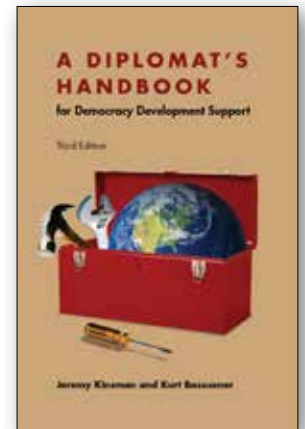
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