



access

THE IMPORTANCE OF
NET NEUTRALITY IN THE EMERGING
AND DEVELOPING WORLD

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ABSTRACT

Net neutrality works on the principle that all web traffic should be treated on an equitable basis no matter where it originated or the type of data transmitted.¹ However, as the number of Internet users increases and more individuals from emerging and developing countries come online, some Internet Service Providers (ISPs), telecommunications, and other technology companies have renewed calls for an end to net neutrality and the management of bandwidth available to certain websites based on the type of content they provide. A reversal of the net neutrality principle would be detrimental not only to users in wealthy democracies, but to the wave of new and existing users from developing economies that are rapidly becoming connected through broadband and wirelessly via their mobile phones. This briefing paper examines the ways in which governments, businesses and individuals in the developing world will be affected by any reversal of the net neutrality principle. Ultimately, findings reveal that net neutrality is key to unlocking the dynamic potential of ICT in the developing world. Policies and regulation that reject net neutrality will stunt economic growth and innovation as well as restrict access to social, health, educational and human rights services, which are increasingly dependent upon reliable, unfettered wireless connections.

INTRODUCTION

Large telecommunications companies would like to enshrine anti-competitive practices by ending net neutrality. The Google/Verizon proposal² to end net neutrality for wireless connections is an example of this. However, this is not only an issue for the telecommunications industry, but for every government, each current and potential business, the vulnerable, and the marginalized. Tiered payment will undeniably affect prospects for trade, e-governance, employment, education, and human rights as well as the use of data for development and humanitarian relief, while many in developing countries still have yet to benefit from the neutral access those in the developed world freely enjoy. Research shows that broadening access to wireless networks has a direct correlation to sustainable development. Governments around the world have recognized the importance of expanding access, for they are supporting the roll out of many e-government services to promote socioeconomic development. Micro businesses in remote areas as well as large multinational companies, having recognized that the Internet can reduce costs, speed up trade, and help connect them in a more meaningful and valuable way with consumers, are also prioritizing access. However, concerning trends in the West to control content and connectivity to the web have a direct impact on the internet policies of emerging economies, where adequate infrastructure and safeguards are not always in place. Thus as the internet plays an increasingly significant role in bettering the lives of individuals in emerging economies, it is crucial that net neutrality is enshrined not only in these regions, but worldwide.

E-GOVERNANCE AND E-GOVERNMENT

The development of e-governance and e-government is vital to fostering inclusion, improving services, as well as encouraging citizens to become more digitally literate. Governments can encourage businesses and individuals to use broadband Internet through the provision of many services online.

- 1 Network neutrality is based on the principle that internet service providers (ISPs) are to treat all web traffic equally, regardless of content type or origin - for whatever data is passing from content providers to end users. This means that any video, text or content from any source will get just as much bandwidth as any other, and individuals and organisations do not have to pay for how much bandwidth they use. A tiered Internet will force consumers to pay based on how much bandwidth they use.
- 2 This proposal called for the maintenance of net neutrality for wired connection, but not for the wireless Internet. Boorstin J (2010), Making Sense of Google & Verizon's Internet Proposal, CNBC, 9th August 2010 http://www.cnbc.com/id/38631264/Making_Sense_of_Google_Verizon_s_Internet_Proposal (Last accessed 13th May 2011)

WHERE OTHER COUNTRIES SIT

In April 2011, the U.S. House of Representatives voted to block a Federal Communications Commission (FCC) net neutrality ruling approved in December 2010 that banned ISPs from blocking traffic on their networks, but allowed providers to “reasonably” manage their networks and charge consumers based on usage.³ Developing countries are observing what happens in America, and antitrust practices in the US may encourage US companies to engage in similar practices in countries without strong regulatory mechanisms. In today’s information rich world, developing countries also have an eye on what is happening elsewhere, particularly with respect to government policies that mandate access, and the way in which these policies are driving development, upping the ante for US action in this policy arena.

Many countries have shown that a combination of self-regulation and government regulation is actually important to ensuring competitiveness and growth of the Internet and, by extension, the economy. Finland, Estonia, France, Greece, Spain, and Costa Rica⁴ have all made access to the Internet a human right and are promoting universal access and service that supports a neutral web. The Norwegian Post and Telecommunications Authority (NPT) have also implemented voluntary guidelines for internet neutrality.⁵ These soft regulatory guidelines, which are widely supported, were developed through collaboration with the internet’s multiple stakeholders. A BBC survey found that 4 in 5 people across the world believe that the Internet is a “fundamental right.”⁶ Furthermore, while the right to access is not enshrined in law in South Korea, described as “the most wired country in the world” in the BBC survey, the government has successfully developed broadband access through strategic government intervention which supports private sector development. The many government led initiatives to expand internet access are a clear indication of the recognition that the Internet as it stands – of which net neutrality is an essential policy component – is critical to boosting long-term economic growth and increasing a country’s productivity and competitiveness. Countries like Australia, Turkey, Malaysia, Qatar, and Singapore have identified information communication technology (ICT) as a priority for economic development and have implemented government strategies reflecting this.⁷

The Netherlands recently became the second country in the world, after Chile, to require that internet providers abide by the net neutrality principle. This legislation would not only prohibit providers from throttling or filtering the connections of their customers, but they would also be prevented from using deep packet inspection (DPI) – which can be used as an advanced surveillance tool – to spy on their customers. Indeed, the law specifies that network operators and service providers may only inspect or check communications per user request (and this consent may be withdrawn at any time) or insofar as network management purposes or legal orders prescribe. Furthermore, to ensure compliance, providers will be inspected by the Dutch telecommunications watchdog, OPTA. Access believes this is landmark piece of legislation, which other nations should emulate.

REGIONAL AND INTERNATIONAL ORGANIZATIONS

Neelie Kroes, European Commission Vice-President for the Digital Agenda, has stated that the European Union (EU) is against practices like throttling and the blocking of voice over internet protocol (VoIP) services.⁸ In 2011, together with national telecoms regulators, the Commission will closely investigate current market practices under new EU telecoms

3 Drawbaugh K (2011), House rejects FCC’s ‘open’ Internet rules, Reuters, 8th April 2011 <http://us.mobile.reuters.com/article/idUSTRE7376UR20110408?WT.tsrc=Social%20Media&ca=rdt> (Last accessed 13th May 2011)

4 Psaila Borg S, (2011), Right to access the Internet: the countries and the laws that proclaim it, 2nd June 2011, An introduction to internet governance <http://igbook.diplomacy.edu/2011/05/right-to-access-the-internet/> (Last accessed 16th July 2011)

5 Norwegian Post and Telecommunications Authority (2009), Network neutrality: *Guidelines for Internet neutrality*, Version 1.0 24 February 2009 <http://www.npt.no/ikbViewer/Content/109604/Guidelines%20for%20network%20neutrality.pdf> (Last accessed 16th July 2011)

6 A large number of respondents in countries like Japan, Mexico, Russia, Brazil and Nigeria said they could not cope without access. BBC (2010), Internet access is ‘a fundamental right’, 8th March 2010 <http://news.bbc.co.uk/1/hi/technology/8548190.stm> (Last accessed 13th May 2011)

7 Dutta S and Mia I (2010/2011) op. cit. See this report for a comprehensive list of broadband strategies for these and other countries.

8 Kroes N (2011), The Internet Belongs to All of Us, Press Conference on Net Neutrality Communication Brussels, European Commission, 19th April 2011 <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/486&format=HTML&aged=0&language=en&guiLanguage=en> (Last accessed 19th July 2011)

rules which recently came into effect.⁹ According to Kroes although “there is no set definition of ‘net neutrality’ ... it will be a legal requirement under EU law as from 25 May 2011 that Member States’ telecoms regulatory authorities promote the ability of internet users “to access and distribute information or run applications and services of their choice¹⁰ (Article 8(§4)g of the telecoms Framework Directive 2002/21/EC, as amended by Directive 2009/140/EC)”. The EU has further recognized the benefits of strategic government interventions at the regional level; many now suggest that relying on markets alone might be insufficient to achieve widespread broadband services. Additionally, a recent OECD report states that the private sector should take the lead in developing well-functioning broadband markets, but circumstances persist where government intervention is needed.¹¹ While the UN does not specify the importance of network neutrality, a May 2011 report acknowledged the importance of access for realizing human rights. The UN Special Rapporteur declared that “cutting off users from internet access, regardless of the justification provided, including on the grounds of violating intellectual property rights law, to be disproportionate and thus a violation of article 19, paragraph 3, of the International Covenant on Civil and Political Rights.”¹² It also “calls upon all states to ensure that Internet access is maintained at all times, including during times of political unrest (and) urges States to repeal or amend existing intellectual copyright laws which permit users to be disconnected from Internet access, and to refrain from adopting such laws”.¹³ While not addressing the issues of net neutrality it does promise that the Special Rapporteur will examine other key determinants of access such as “the availability of the necessary infrastructure and information communication technologies, such as cables, modems, computers and software”.¹⁴

PROMOTION OF ANTITRUST ACTIVITY BY ICT COMPANIES

Tiered payment will increase antitrust practices among technology companies, and this will be exacerbated in developing countries where ICT regulation is not adequate or enforced, and consumers have a limited choice of providers. In many countries, the dominance of the current public telecommunications operators has hindered the competitiveness of the broadband market, and insufficient economies of scale have also been problematic. Difficulties also persist when an ISP tries to secure legal permission to operate. “It is not enough to have a competition-friendly authorization regime if the interconnection or spectrum assignment regime is anticompetitive or favors a small group of service providers.”¹⁵ For instance, if the T-Mobile/AT&T merger takes place, AT&T would control more than 40% of all US wireless subscribers¹⁶ and if similar mergers were to take place elsewhere, this could have dire consequences for competitiveness in this sector. It is important to build government institutions and improve regulatory oversight because this can support competition amongst providers before broadband reaches mass-market status in developing countries.¹⁷

9 Ibid

10 European Commission (2011), Digital Agenda: Commission underlines commitment to ensure open internet principles applied in practice, Press Release, Reference: IP/11/486 19th April 2011 <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/486>

11 OECD (2008), Broadband Growth and Policies in OECD countries, OECD Ministerial Meeting on the Future of the Internet Economy, pg. 12. <http://www.oecd.org/dataoecd/32/57/40629067.pdf> (Last accessed 13th May 2011)

12 United Nations General Assembly (2011), Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Frank La Rue, Human Rights Council Seventeenth session Agenda item 3, 16th May 2011, pg. 21 http://www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdf (Last accessed 16th July 2011)

13 Ibid

14 Ibid, pg. 4.

15 Kim Y, et al (2010), Building broadband: Strategies and policies for the developing world, Global Information and Communication Technologies (GICT) Department, World Bank, January 2010 p. 39 http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/282822-1208273252769/Building_broadband.pdf (Last accessed 13th May 2011)

16 Ovide S (2011), AT&T/T-Mobile Will Have 40% of Mobile Market Wall Street Journal blog, 20th March 2011 <http://blogs.wsj.com/deals/2011/03/20/att-t-mobile-will-have-40-of-mobile-market/> (Last accessed 13th May 2011)

17 Kim Y, et al (2010), op cit. p.40

Bocache et al (2007)¹⁸ emphasize that developing countries are vulnerable to the negative effects of different kinds of Internet segmentation because some do not have the tools and experience to deal with these complexities. For example, most developing countries have only one or only a few ISPs, which also tend to dominate the telecommunications sector. As such, these ISPs frequently prevent users from using newer and more cost effective technologies (e.g., VoIP), in order to protect their traditional telecommunications business.

As ISPs seek to leverage the monopolistic control they have in most markets (developing and developed) to maximize their profits, it is likely that they will push forward non-neutral net management policies. For example, video streaming and downloads will only be available if an ISP wants you to have these capabilities, and such decisions will be based on the business interest of the ISP.¹⁹ Moreover, in a world where a search engine like Google can decide what its users find on the Internet, if a tiered Internet is introduced, the world's information ecosystem will be increasingly monopolized and controlled by a few corporations.²⁰ Put another way, if an aspiring entrepreneur in the developing world wanted to compete with Facebook, he or she would have great difficulty succeeding since Facebook could in essence pay to ensure that other rival sites are comparatively much slower.²¹ Furthermore, start-up companies will have to gain the approval of access providers, which will inevitably stifle innovation as what is seen online will be only what the Internet access providers approve of.²²

REVERSAL OF GAINS MADE IN BRIDGING THE DIGITAL DIVIDE

As efforts to bridge the digital divide come to fruition, increased costs levied by a tiered Internet will slow the implementation of universal access, which will affect development in poorer countries. This will reverse many socio-economic gains made, as well as those predicted for the foreseeable future, as e-governance and e-government takes off and ICT becomes essential for improvements in areas like agriculture, health, and education. For instance, the Internet contributes significantly to education as it provides free and instant access to information as well as opportunities for better teaching methods, in the classroom and through distance education, while also promoting lifelong learning.²³ This is ever more important given that developing countries are increasingly providing more information online than in printed books.²⁴ The quality of the information available on higher tiers will also likely be of a better quality than what is made available on the free internet, which is where most of the public who have Internet access will be finding their information.

This point is driven home by online educators who argue that, without net-neutrality, the cost of online learning would skyrocket, marginalizing many potential students. According to Larry Johnson, CEO of the Texas-based New Media Consortium, "The more time a student spent online, the higher [his or her] Internet bill would be... It would come to a point... where [students] wouldn't want to do distance learning anymore."²⁵ Educators further argue that it would be difficult for

- 18 Bocache R et al. (2007), The Net Neutrality Debate and Development, DiploFoundation, March 2007 pg. 19 <http://www.diplomacy.edu/poolbin.asp?IDPool=453> (Last accessed 13th May 2011)
- 19 Norwood T J (2011), Net Neutrality Died and Nobody Noticed, Sci-Tech News 19th April 2011 <http://rinf.com/alt-news/science-technology/net-neutrality-died-and-nobody-noticed/11743/> (Last accessed 13th May 2011)
- 20 Ibid
- 21 Klurfeld M, What Net Neutrality Really Is And What's Really At Stake, The Next Web, 8th July 2010 <http://thenextweb.com/us/2010/08/07/what-net-neutrality-really-is-and-whats-really-at-stake/> (Last accessed 13th May 2011)
- 22 Norwood T J (2011), op cit.
- 23 Op cit. Dutta S and Mia I (2010/2011) p. 65
- 24 World Information Access (2006), Developing Countries Put More Content Online Than Into Books, 15th March 2006 <http://www.wiareport.org/index.php/32/developing-countries-put-more-content-online-than-into-books> (Last accessed 15th March 2011)
- 25 Eschool news (2010) Could net-neutrality ruling hinder online education?, staff and wire report, 7th April 2010 <http://www.eschoolnews.com/2010/04/07/could-net-neutrality-ruling-hinder-online-education/> (Last accessed 13th May 2011)

smaller schools to compete in the online-learning market as large schools could pay for preferential treatment.

According to a World Bank Infodev report, many governments are pushing for comprehensive national broadband plans to secure investment in their networks because “once broadband usage reaches a critical mass, (e.g., 25 per cent) it will come to be considered indispensable for all if balanced development is to be achieved without discrimination based on geographical location.”²⁶ World Bank research reveals that there is a direct correlation between investment into broadband and direct economic growth. According to a recent report, every 10 percentage point increase in broadband penetration in low and middle-income countries speeds up economic growth by 1.38 percentage points, which is more than in high-income countries and more than for other telecommunications services.²⁷ McKinsey & Company also estimates that a 10 percent increase in broadband household penetration increases a country’s GDP from 0.1 percent to 1.4 percent.²⁸ They also found that bringing mobile broadband levels in developing countries to that of Western Europe standards could possibly add \$300–420 billion (USD) in GDP to developing countries. Moreover, Booz & Company found that a 10 percent higher broadband penetration in any specific year is correlated to 1.5 percent more labor productivity growth for the next five years²⁹ and that countries in the top tier of broadband penetration have 2 percent higher GDP growth than countries in the bottom tier.³⁰ These studies illustrate the importance of an open and neutral Internet to a country’s economy.

Furthermore, the digital divide does not only refer to high income countries with good access versus middle and low income countries with limited access, but also the divides within countries and communities and between corporations and individuals. Cities with better and neutral Internet access can potentially attract more investment, and communities can thrive if they can communicate with people within and outside their communities about common interests, as well as if they can access government services online.³¹ As public and private services are increasingly provided online, the inability of some population groups to access the Internet becomes a serious public policy problem, since certain groups will systemically be denied access to information.³²

EXCLUSION OF BUSINESSES, INSTITUTIONS, AND INDIVIDUALS FROM DEVELOPING COUNTRIES IN THE ONLINE WORLD

In the world of online search and ranking, a tiered Internet will thwart small and micro businesses in developing countries. This is because a neutral Internet provides a massive, open, and international market, and the ability for anyone to access information, products, and services via any Internet connection; it is this knowledge that encourages entrepreneurs in

26 Kelly T, et al. (2009), What Role should Governments Play in Broadband Development? Paper prepared for infoDev World Bank Workshop on “Policy Coherence in ICT for Development”, Paris, 10-11 September InfoDev World Bank, pg 9 <http://www.scribd.com/doc/25442592/What-Role-should-Governments-Play-in-Broadband-Development> (Last accessed 13th May 2011)

27 Kim Y, et al (2010), op. cit. p. 2

28 Buttkeireit S, Enriquez L, Gripink F, Moraje S, Torfs W, Vaheri-Delmulle T (2009), Mobile broadband for the masses, Regulatory Levers to Make it Happen, February 2009, http://www.mckinsey.com/en/Client_Service/Telecommunications/Latest_thinking/-/media/McKinsey/dotcom/client_service/Telecoms/PDFs/Mobile_broadband_for_the_masses.ashx (Last accessed 13th May 2011)

29 Friedrich R, et. al (2009), Digital Highways: The Role of Government In 21st-Century Infrastructure, Booz & Company, 2009, p. 5 http://www.booz.com/media/uploads/Digital_Highways_Role_of_Government.pdf (Last accessed 13th May 2011)

30 Ibid, p. 5

31 Woyke E (2008), America’s Most Wired Cities, Forbes.com, January 2008, http://www.forbes.com/2008/01/09/wired-cities-wifi-tech-wireless-cx_ew_0110wired.html (Last accessed 13th May 2011)

32 Kim Y et al (2010) op. cit. p. 40

developing countries to pursue online endeavors.³³ There are very few local businesses that can survive the onslaught of the multi-national companies (MNC)s based in the developed world without the full utilization of ICT.³⁴ As a result, a non-neutral Internet will exclude the many businesses based in the developing world from the global marketplace. If world trade depends on the speed of transactions³⁵ then it is essential for all countries to have neutral access.

Having neutral access to the Internet can further ensure business users' connectivity and significantly strengthen business performance. A study of 1,200 companies in six Latin American countries revealed that broadband deployment improved the speed of data processing, and the diffusion of information within businesses, leading to business growth.³⁶ Should a switch to a tiered internet occur, those businesses that are unable to utilize the Internet and services that larger organizers are able to use will be at a severe disadvantage. Additionally, better access to information tends to help markets work more efficiently and raise producer incomes,³⁷ while delays in incorporating new technologies can limit a company's market presence.³⁸

According to César Alierta of Telefónica: "To put it bluntly, progress does not really exist for those who are unable to access a telecommunications network. However, not just any network will do: it must have sufficient—and probably growing—bandwidth to provide suitable quality and reliability. This will allow the full potential of the phenomenon of convergence (networks, equipment, applications, services, and so on) in turn permitting yet new options to be developed.³⁹ The availability of neutral access worldwide can enable the adaptation of the Internet to different languages, character sets etc. (localization 1.0) as well as adaptation of these features to local laws, customs and cultures (localization 2.0)."⁴⁰ If the sites that can be visited are based on payment, the development of diversity online will be inhibited. Additionally, as increased access to the Internet helps to drive costs down, entrepreneurs in the developing world are employing principles of division of labor and economies of scale as they increase their participation in the Internet economy while simultaneously reducing costs without sacrificing quality.⁴¹

Moreover, high hopes exist for the use of cloud computing in the developing world as it can help businesses and researchers in developing countries achieve levels of success similar to the developed world, because this technology drastically reduces IT costs. However, bandwidth and access are vital for those who want to use it, so a non-neutral net would jeopardize opportunities for use of this technology in the developing world. As more and more workers not only in the developed world but also the developing world move around and utilize the cloud to gain access to and store information, neutral access will become increasingly important. According to Linthicum, "the Google-Verizon proposal would narrow the playing field for cloud computing providers quickly and businesses using public cloud computing will have fewer choices, while their costs will go up as these fees are passed onto cloud computing customers."⁴² If provider networks are permitted to control traffic, they could give priority to the larger cloud computing vendors for a fee while smaller cloud computing startups who cannot afford the payment may get slower access or be barred from the network.⁴³

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- 33 Schonfeld E (2008), The Net Neutrality Debate All On One Page, Techcrunch, 31st August 2008 <http://techcrunch.com/2008/08/31/the-net-neutrality-debate-all-on-one-page/> (Last accessed 13th May 2011)
- 34 Ibid p. 6
- 35 Kelly T et al (2009) op. cit. pg 5
- 36 Ibid p. 11 Cited in: Momentum Research Group, *Net Impact Latin America: From Connectivity to Productivity*, Momentum Research Group, 2005, http://www.netimpactstudy.com/nila/pdf/netimpact_la_full_report_t.pdf. (Last accessed 13th May 2011) Cited in IC4D 2009; Mohsen Khalil, Philippe Dongier & Christine
- 37 OECD, (2008) op. cit. p. 7
- 38 Op cit. Dutta S and Mia I (2010/2011) p. 62
- 39 Ibid p. 64
- 40 Ibid p. 85
- 41 The Economist (2010), The world turned upside down, 15th April 2010, <http://www.economist.com/node/15879369> (Last accessed 13th May 2011)
- 42 Ibid
- 43 Linthicum D (2010) The lowdown on Net neutrality and cloud computing, Infoworld, 26th August 2010, <https://www.infoworld.com/d/cloud-computing/the-lowdown-net-neutrality-and-cloud-computing-075> (Last accessed 13th May 2011)

STIMULATING EMPLOYMENT

Free and untiered access is encouraging employment, not only because it multiplies the number of entrepreneurs but also because of the related services and applications that accompanies equal access. Having unfettered access to the Internet creates significant and equal economic opportunities for each user, service provider, application developer, and network operator alike. McKinsey has estimated that bringing broadband penetration levels in emerging markets to Western European levels could possibly generate 10–14 million jobs.⁴⁴

Furthermore, it is not only the highly skilled worker but also the low skilled worker that will increasingly be able to perform microwork tasks, which will contribute to a rise in income. This can include digital tasks like data input, but also playing online games and selling virtual assets to rich players.⁴⁵ In this “virtual economy” of digital goods and services, the potential for employment and socioeconomic development increases.⁴⁶ It follows that upholding net neutrality can help reduce poverty through direct income generation, and through diversified and more secure employment opportunities.⁴⁷

WIRELESS MOBILE PHONES — THE PRIMARY PATH TO CONNECTION IN THE DEVELOPING WORLD

The International Telecommunications Union (ITU) has reported that 90% of the world’s population has a mobile phone signal.⁴⁸ The mobile phone, an “omnipresent symbol of ICT”⁴⁹, is the primary means by which individuals in the developing world are and will be connecting to the Internet. As 3G mobile is increasingly rolled out in developing countries, wireless access via mobile phones will be crucial for the many people in these countries without computers and/or fixed broadband. The ITU has reported that from 2000 to 2010, the number of Internet users has grown from under 400 million to 2 billion, and there are also an estimated 5.3 billion mobile subscriptions, 17% of which are 3G connections. Developing countries are also estimated to have an astounding 76% of the world’s mobile phones.⁵⁰

There are many innovative ways in which mobile phones are being used in fields like agriculture, banking and health that are unique to some developing countries. For example, MPesa in Kenya is the world’s largest mobile banking platform⁵¹, and many in Kenya use it to transfer money, and purchase goods. Mobile technology is enabling farmers to work more

44 Buttkeireit S, et al (2009) pg. 3

45 Lehdonvirta V & Ernkvist M (2009), Knowledge Map of the Virtual Economy, Infodev, World Bank, April 2011, cited in Heeks, R. (2009) Understanding ‘Gold Farming’ and Real-Money Trading as the Intersection of Real and Virtual Economies. *Journal of Virtual Worlds Research* 2(4) <http://journals.tdl.org/jvwr/article/view/868> (Last accessed 13th May 2011)

46 Lehdonvirta V & Ernkvist M (2009) op. cit.

47 Dutta S & Mia I (2010/2011), op cit. p. xii

48 Shein E (2010), Mobile Networks Penetrate 90% Of World’s Population, *Information Week*, 19th October 2010, <http://www.informationweek.com/news/smb/mobile/227900281> (Last accessed 13th May 2011)

49 Kelly T, et al (2009) op. cit. p. 3

50 Hondrogiannis S (2011), ITU tracks the decade that transformed the world, *International Telecommunications Union*, 1st March 2011, <http://www.itu.int/net/pressoffice/stats/2011/01/index.aspx> (Last accessed 15th March 2011)

51 World Bank (No date cited), Mobile Banking Goes Viral: M-Pesa and Kenya’s Telecom Revolution <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/KENYAEXTN/0,,contentMDK:22770800~menuPK:50003484~pagePK:2865066~piPK:2865079~theSitePK:356509,00.html> (Last accessed 13th May 2011)

effectively,⁵² and developing countries that face shortages of healthcare workers are utilizing mobile technology to promote quality health care. mHealth initiatives like Text to Change in Uganda increased the number of people getting counselled and tested for HIV/AIDs by 40%.⁵³ Greg Elphinston, Director Community Involvement at Nokia, says that with regard to mobile health “we are at an inflection point in terms of acceptance. Whether it turns out to be the peak of inflated expectation or the trough of disillusionment will depend on whether governments make the link between telecommunication policy and health, and the extent to which donors encourage transparency in sourcing and the participation of local entrepreneurs.”⁵⁴

As mobile phones are increasingly used in developing countries including in remote, rural locations and innovative mobile applications and services are introduced, a neutral Internet will be essential for increasing the potential for ICT to reduce poverty. According to Kenya Advertising Research Foundation’s (KARF’s) 2010 statistics, over 60% of Kenyans access the Internet from mobile phones. In the Democratic Republic of Congo, mobile penetration rose from 5-59% and in Guinea from 2-56%.⁵⁵ As this trend continues to spread throughout the developing world, the ability to access the wireless Internet via a mobile phone is fast becoming essential for development. This has the power to revolutionize conceptions even further about the benefits of Internet access on mobile phones and stimulate unprecedented growth.⁵⁶

Developments in new technologies and business models are enabling networks to reach more people at lower costs. In the developed world, fiber optic networks are moving closer to users, reaching their neighborhoods, offices, and homes.⁵⁷ Simultaneously, in the developing world, wireless broadband is already more prevalent than wired broadband. Many countries have skipped landline connections and gone straight to wireless connections. In Sub-Saharan Africa, for example, there are eight times as many users with wireless broadband subscriptions than those with wired connections,⁵⁸ adding more substance to the claim that the future is indeed wireless. While 71% of people in the developed countries are online, only 21% of the populations in developing countries are online.⁵⁹ It follows that mobile wireless networks need to adopt net neutrality principles in order to increase the number of Internet users. There cannot be significant differentiation between landline and wireless. The mobile phone is and will continue to be essential for carrying out important day-to-day activities critical for survival in the developing world, so implementing tiered payment will put these countries at a severe disadvantage.

52 See examples here: Food and Agriculture Organization of the United Nations (2010), Study on Potentials of Mobile Phones in Investment and Development Projects, Working Paper, Report No.: 10/014 FAO-GEN, Food and Agriculture Organization of the United Nations - Rome Investment Centre Division, 20th December 2010, <http://www.e-agriculture.org/sites/default/files/uploads/media/Study%20on%20Potentials%20of%20Mobile%20Phones%20in%20Investment%20and%20Development%20Project%20.pdf> (Last accessed 13th May 2011) p. 3

53 Deign J (2011), African M-health: How Mobiles Save Lives in Developing World, CISCO, 24th January 2011 http://newsroom.cisco.com/dlls/2011/ts_012411.html (Last accessed 13th May 2011). A UN Foundation, Vodafone Foundation report highlighted 50 mhealth projects taking place throughout the world Vital Wave Consulting (2009), mHealth for Development: The Opportunity of Mobile Technology for Healthcare in the Developing World. Washington, D.C. and Berkshire, UK: UN Foundation-Vodafone Foundation Partnership, 2009. http://www.globalproblems-globalsolutions-files.org/unf_website/assets/publications/technology/mhealth/mHealth_for_Development_full.pdf (Last accessed 13th May 2011)

54 Ibid

55 Dutta S and Mia I (2010/2011), op. cit. p. 69

56 Mkaigwa (2011), Analysing The Impact of Safaricom’s New Internet Browsing Tariff & Their Outlook on Data for 2011, Afrinnovator, 20th April 2011 http://afrinnovator.com/mobile/analysing-the-impact-of-safaricom-s-new-internet-browsing-tariff-their-outlook-on-data-for-2011?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed:+Afrinnovatorcom+%28Afrinnovator.com%29 (Last accessed 13th May 2011)

57 Kim Y, et al (2010) op. cit. p. 8

58 Ibid

59 International Telecommunications Union (2010), The World In 2010: Facts and Figures - The Rise of 3G, <http://www.itu.int/ITU-D/ict/material/FactsFigures2010.pdf> (Last accessed 13th May 2011)

POLITICAL MANIPULATION OF THE INTERNET AND THE EFFECT ON HUMAN RIGHTS

Many dictatorial governments are cracking down on the use of the Internet and implementing various forms of online censorship. However, where access is available, individuals have been able to utilize the Internet to help increase transparency and accountability of governments and shed light on human rights abuses. With tiered access it will be easier for oppressive governments to manipulate content and control the Internet. More specifically, without neutral access, citizen journalism and news from civil society through blogs, video, and audio may be replaced by news controlled and influenced by corporations and the government. If bloggers, for instance, have to pay extra to blog, and readers have to pay extra to read this content, this will have serious implications for online democratic engagement.

Moreover, governments are becoming increasingly aware of the power of Internet access. A study by Noman & York (2010/2011) found that governments in forty countries are using Internet filtering to control the flow of online content deemed disagreeable for social and political reasons, but increasingly also for “security” reasons.⁶⁰ The report found that Western filtering tools and services are popular among authoritarian regimes and that nine countries in the Middle East and North Africa (MENA) utilize such tools, blocking a total of over 20 million Internet users from accessing such websites.⁶¹ However, this is not just an issue for MENA. Though the Australian government has been implementing strategic broadband policies at a cost of \$36 billion (AUS), it also wants to force every ISP to filter websites according to a secret government blacklist.⁶² In today’s age of increasing transparency and accountability, there is no place for a non-neutral Internet.

EFFECT ON THE USE OF OPEN, REAL-TIME AND LINKED DATA FOR DEVELOPMENT AND HUMANITARIAN RELIEF

Today, more government data is being made available online, and this data is being mashed up and linked with other data to provide a better picture of what is needed for socio-economic development. Open, real time, and linked data is increasingly providing valuable information to help solve some of the world’s most pressing problems, and governments are making more data easily accessible online and free for reuse. If tiered access is implemented, the data being used to make important decisions not only on behalf of communities, but on behalf of the world, will be skewed. Moreover, in a world plagued by an increasing number of natural disasters, access to information online, including crowd-sourced information, is proving vital for emergency relief.

A neutral Internet has helped victims of the Haitian earthquake through the use of the Ushahadi crowdmap platform, which gathered data from people around the world in real-time to help with the crisis. It is also facilitating the development of this type of technology to help with future humanitarian response, political uprisings, and other social issues. Without neutrality, the possibilities for the inclusive use of data for development will be halted. The data gathered by Ushahadi depends on individuals in all parts of the world being able to submit information on the open, free web, which will be difficult to obtain if the net neutrality principle is abandoned. While the less well-off would be unable to afford fast access,

60 Noman H and York C. J (2010/2011), West Censoring East The Use of Western Technologies by Middle East Censors 2010-2011, Open Net Initiative Bulletin http://opennet.net/sites/opennet.net/files/ONI_WestCensoringEast.pdf p. 1 Last accessed 13th May 2011)

61 Ibid p. 1 & p. 3

62 Foo F (2011), Vint Cerf’s message to Australia: internet censorship isn’t effective, Australian IT, 21st January 2011 <http://www.theaustralian.com.au/australian-it/vint-cerfs-message-to-australia-internet-censorship-isnt-effective/story-e6frgakx-1225992330849> (Last accessed 13th May 2011)

they tend to be the ones who suffer most in emergencies, and information about their situations would not be conveyed as quickly. Additionally, their data will not form part of the emerging data picture, which will be used to respond appropriately, limiting the inclusive and therefore effective use of such data for development.

The Internet, Web 2.0 applications, and open-source software allow users to interact with each other, with their governments, and with businesses like never before. Web 2.0 applications, such as “Web-based communities, hosted services, Web applications, social networking sites, photo and video sharing sites, wikis, blogs, mash-ups, and folksonomies are interoperable, user-centered, and collaborative and allow users to generate, distribute, and share content in real time.”⁶³ These are part of a family of rapidly increasing ICT data gathering and data analyzing tools that are being used to “collect, filter, integrate, fuse, analyze, map and visualize online information real-time information, drawn from a variety of sources”⁶⁴ and inform business and government policy and even the day to day decisions of individuals.⁶⁵

Improvements in science and technology are today aided by the Internet, and free access is important for academics and researchers. Open data initiatives by institutions around the world are enabling researchers in developing countries to exchange information and advice with those in the developed world. Reversal of net neutrality will increase the cost of sharing information, which will have dire consequences for all. Thirty OECD countries as well as China, Israel, Russia, and South Africa have adopted a Declaration on Access to Research Data from Public Funding in recognition of the importance of sharing information to facilitate cost-effective access to digital research data.⁶⁶ Moreover, as organizations like Electronic Information for Libraries (EIFL)⁶⁷ work to promote access to information from the world’s libraries and research institutes online, such initiatives will reduce the ability for organizations and individuals in developing countries who cannot pay for access to have more information at their disposal.

CONCLUSION

A plethora of recent reports have revealed the way in which neutral access to the Internet is fueling innovation and consequent growth. While the US grapples with decisions regarding whether the net should remain open, many governments in emerging and developing economies are maintaining that there should be better and faster access for all, despite sometimes contradictory heavy-handed governmental monitoring of the Internet. It is estimated that emerging markets will represent about half of the world’s Internet economy by 2020.⁶⁸ As one report says: “The next decade will see the global Internet transformed from an arena dominated by advanced countries, their businesses, and citizens to one where emerging economies will become predominant.”⁶⁹ Nevertheless, network neutrality does not solely concern ISPs, but is fast becoming an increasingly pertinent issue of the less privileged. The global flow of information is an important human resource because “poverty has an important informational dimension.”⁷⁰ The Internet is essential for modern society and the world’s economic system. When accessible, it also gives a voice to those that reside in the most remote regions of the world, which can create ripples worldwide. However, the reversal of net neutrality in the USA and other Western democracies will have a knock on effect, prompting ISPs and their government regulators in other countries to follow suit, which will inevitably negatively impact the developing world. New and promising technological trends, such as cloud computing, enable developing countries to compete with the West, and net neutrality also stimulates the economy and

63 Kim Y, et al (2010) op. cit. p. 9

64 PSFK (2011), PSFK Presents Future of Real Time data, Prepared by PSFK for UN Global Pulse <http://www.slideshare.net/PSFK/psfk-presents-future-of-realtime> (Last accessed 13th May 2011)

65 Dutta S and Mia I (2010/2011), op. cit. p. 92

66 OECD (2007), OECD Principles and Guidelines for Access to Research Data from Public Funding <http://www.oecd.org/dataoecd/9/61/38500813.pdf> (Last accessed 13th May 2011)

67 EIFL website <http://www.eifl.net/our-achievements> (Last accessed 13th May 2011)

68 Dutta S and Mia I (2010/2011), op. cit. p. 34

69 Ibid p. xii

70 Ibid p. 72

increases employment rates by giving power to aspiring entrepreneurs to innovate and challenge corporate monopolies. As wireless penetration far exceeds landline connections, tiered payment would put these countries at a severe disadvantage as such access becomes increasingly essential for carrying out important day-to-day activities. Furthermore, net neutrality is key to enabling greater access to educational and health services, which depend on unbiased, reliable wireless network connections. Ultimately, neutral access is essential for social, political, and economic growth in developing countries. As big strides are made in bridging the digital divide and as developing countries invest in related infrastructure, it is essential that this principle is upheld. The nullification of net neutrality will undoubtedly reverse and limit progress in developing countries in today's global village, as the widening of the digital divide necessarily means increasing the divide between the rich and the poor.

Access is a global movement for digital freedom premised on the belief that political participation and the realization of human rights in the 21st century is increasingly dependent on access to the internet and other forms of technology.

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