

# A Giant Step Backward or the Way Forward

## An Analysis of some Proposals before WCIT

**Rohan Samarajiva** | Chair and CEO, LIRNEasia | rohan[at]lirneasia[dot]net

*September 2012*



LIRNEasia is a regional information and communication technology (ICT) policy and regulation research and capacity-building organization active across the Asia Pacific. Its mission is *to improve the lives of the people of the emerging Asia-Pacific by facilitating their use of ICTs and related infrastructures; by catalyzing the reform of laws, policies and regulations to enable those uses through the conduct of policy-relevant research, training and advocacy with emphasis on building in-situ expertise.* For further information see [www.lirneasia.net](http://www.lirneasia.net) | Contact: 12 Balcombe Place, Colombo 00800, Sri Lanka. +94 11 267 1160. info[at]LIRNEasia[dot]net

## **Executive Summary**

In December, the International Telecommunication Union (ITU) will convene the 2012 World Conference on International Telecommunications (WCIT-12) in Dubai, United Arab Emirates, for the purpose of revising the International Telecommunication Regulations (ITRs) that govern the way nations handle telecommunications network traffic as it crosses their borders. Among the most troubling proposals submitted to the ITU's Council Working Group to prepare for WCIT-12 are the contribution from European Telecommunications Network Operators Association (ETNO) and the Africa Region contribution submitted by Egypt.

ETNO wants the ITU to designate Internet content providers as "call originators" and subject them to a "sending party network pays" rule that would allow telecommunications operators to charge them rates they believe are commensurate with the bandwidth their content consumes.

Such a change would have enormous implications for the expansion of the digital economy in the developing world.

- Access to content would become more expensive if content providers must pass along costs.
- Content providers may respond by terminating connections with operators, especially in countries with populations that have limited buying power and access to payment mechanisms. The Internet would be "balkanized" by cutting off some countries from large swaths of content.
- Loss of this access to content and applications, given the role played by the Internet in supporting these countries' transitions from low-income to middle-income economies, could cost them billions of dollars in lost growth.

The Africa Region's proposal aims to impose broad regulations on the economics and content of the Internet, and seeks to redefine narrow ITR definitions to encompass the much-larger ecosystem of the digital economy.

The proposals from ETNO and the Africa Region seek to reverse twenty years of liberalized, pro-market policies in international telecom regulation. These policies have delivered affordable connectivity to some of the world's most remote peoples and places and are beginning to bring the benefits of the Internet to them as well.

The way the international Internet works today does not require "fixing," especially by adding lumbering bureaucracies into the mix. Instead, government delegations to WCIT should recognize the progress that multi-stakeholder processes, market mechanisms, voluntary agreements and open access to information is creating in the developing world. Recent history and common sense show that this is the correct Internet governance model to endorse and promote.

## **The World—At a Schoolgirl’s Fingertips**

While working on her algebra homework at the kitchen table of her small home in Accra, Ghana, a schoolgirl finds herself challenged by a difficult quadratic equation. The girl is lucky enough to be part of a family that was able to purchase an Internet-enabled smartphone just a few months before. Using the phone’s Web browser, the girl navigates to Khan Academy ([www.khanacademy.org](http://www.khanacademy.org)), a non-profit site that offers free access to some 3,300 video lessons on topics ranging from computer science to history to math. Under the “Math” menu, the girl selects “algebra.” Under the submenu, “Quadratic Functions,” she finds 38 videos that can provide review and assistance. After selecting and playing “Applying the Quadratic Formula,” which is delivered from a YouTube server in the U.S., her classroom lessons are reinforced and she is able to solve the problem.

This girl’s story is a classic example of how international Internet connectivity improves the quality of life for anyone, anywhere in the world, who has access. As it is, this schoolgirl would be among the just one in ten Ghanaians who have it. Even so, Internet use in Ghana is growing fast. From 2010 to 2011, the ITU reports that Internet penetration in Ghana nearly doubled, increasing from 5.2 per cent to 10 per cent.<sup>1</sup>

Internet growth in Ghana tracks that of many developing countries in Africa and Southeast Asia. Policies that reformed government-owned operators, promoted market entry and competition, and established regulatory mechanisms have resulted in a huge increase of telecom access in the developing world. Now as mobile phones become tools for Internet and web access, Internet connectivity is on the rise. Indeed, there already are almost as many mobile phone subscribers (per 100 inhabitants) in the developing world (78.8) as the developed world (117.8).<sup>2</sup>

It is a virtuous cycle. The growing sophistication of wireless devices is spurring greater use of the Internet. Greater use of the Internet is spurring more telecom investment in these countries. More investment means more telecommunications network infrastructure and capacity. More infrastructure spurs greater use of the Internet, and so on. As a result, Internet use in the developing world has exploded in recent years, growing from 9.4 Internet users (per 100 inhabitants) in 2006, up to 26.3 in 2011.<sup>3</sup> Although significant work remains to be done, these are very positive trends.

In Africa, mobile technology and policies of liberalization have stimulated \$56 billion in private sector investment between 1998 and 2008.<sup>4</sup> Still, major differences exist in Internet bandwidth per user between Africa and other regions of the world. In Africa, according to the ITU, there are less than five mobile broadband subscriptions per 100 inhabitants, compared to all other regions, which have penetration levels above 10 percent.<sup>5</sup> But it must be noted that governments and the ITU are not very adept at counting mobile broadband users, so the numbers may be understated. Recent major investments, especially in backhaul networks, hold the potential to yield levels of rapid growth in broadband that were seen in voice telephony in recent years.

However, a series of proposals under consideration by the members of the International Telecommunication Union (ITU) stands to create obstacles to the developing world's ability to access Internet content and applications. By extension, the economic and personal benefits the digital economy is already bringing to those at the bottom of the pyramid in the developing world could come to a standstill.

### **The WCIT Proposals**

In December, the ITU will convene the 2012 World [Congress-Conference](#) on International Telecommunications (WCIT-12) in Dubai, U.A.E., for the purpose of revising the International Telecommunication Regulations (ITRs) that govern the way nations handle telecommunications network traffic as it crosses their borders.

WCIT organizers have been receiving and evaluating proposals for ITR changes and modifications. Among the most troubling submissions to the Council Working Group on WCIT-12 are proposals from European Telecommunications Network Operators Association (ETNO) and the Africa Region.

ETNO is a Brussels, Belgium-based organization representing 41 large incumbent telephone companies in 35 European countries. Members include Deutsche Telekom, Telecom Italia, and Orange. ETNO seeks to impose a uniform "Sending Party Network Pays" principle to replace the current market-based mechanism that governs Internet interconnection payments between international carriers, that is, the funds the operators pay each other to transmit data across each other's networks. [ETNO proposes to have the ITU administer this concept internationally.](#)

Meanwhile, the Africa Region contribution, which does not necessarily represent all interests in all countries of that continent, makes a set of proposals that, at first glance, appear to be reasonable attempt to improve Internet quality of service and the general security of Web-based information and applications, yet contain language vague enough to pose severe consequences for both the economics of Internet interconnection and access to content.

### **The ETNO proposal**

At present, Internet interconnection arrangements are negotiated among the operators themselves. This model allows the suppliers of services to set prices for network interconnection and transmission with low transaction costs. In most cases the traffic is exchanged without written agreements.

The rapid pace of Internet development is putting pressure on capacity throughout the value chain, requiring investment in access networks as well as domestic and international backhaul networks. When an Internet user requests a streaming video, the upstream bandwidth used for the request is dwarfed by the downstream bandwidth consumed by the video. Hence, ETNO wants the ITU to designate content providers as "call originators," and subject them to the "sending party network pays" rule that would allow

telecommunications operators to bill them at rates they believe are commensurate with the bandwidth their content consumes.

To be clear, content providers do lease considerable network capacity worldwide and do pay local operators and Internet service providers for quality control and Web caching. In this context some form of contribution to the access networks may be feasible, provided terms are negotiated commercially. Giving “sending party network pays” the force of law, however, turns the concept into a government-sanctioned leveraging tool operators can use to extract high sums from content providers with no room for negotiation. It can also increase the transaction costs of moving data across thousands of networks in the present liberalized environment.

Since many applications and services, especially video, consume large amounts of bandwidth, these interconnection fees can quickly become extraordinarily high. YouTube, its parent company Google, Facebook, Amazon and iTunes, on down to non-profits like Khan Academy, would have to pay national network operators significantly more for the bandwidth their services use.

Should they see added cost burden as undue and the transaction costs too onerous, Internet content and application providers may simply decide not to route traffic to ITR signatories. As demonstrated in a new report by Analysys Mason’s Michael Kende, content providers would rethink placing content closer to African and Asia users. The practice, called caching, improves the quality and speed of content delivery while lowering costs. As more users have come online in the developing world, content providers have been placing web caching servers in Europe, which itself stimulates the IT and hosting services market there. This will slow if European networks start demanding enormous fees for connection and transmission. Under the incentives of the present arrangements, what is cached in Europe today could be cached in African locations tomorrow, now that Africa’s cable connectivity has improved dramatically. But, if ETNO’s proposals are adopted, the incentives to cache Internet content in multiple locations will be attenuated.

Sending party network pays will hurt the populations in developing countries, particularly those in Africa and Asia, the most. Its unthinking adoption has the potential to cut off much of the developing world from the Internet applications they have come to depend on, resulting in a “balkanization” of the Internet where the majority of multimedia applications are available only to wealthy countries.

### **Costs Imposed on the Developing World**

Even if content providers stop short of total cutoff, they will be forced to pass along the added costs incurred through sending party pays. For the schoolgirl in Ghana, this may mean that video lessons from Khan Academy are no longer free.

If hitherto free content goes behind a paywall, there will be required a low-transaction-cost international method of payment available to a majority of the previous users. Millions of users in the developing world will not have such a mode of payment and will necessarily be

excluded from the content, even if they are willing to pay for it. The end result will be the exclusion of millions of users from the developing world from useful and attractive content. They will have little reason to use broadband. Although the stated purpose of these proposals is to provide broadband to millions in the developing world, ironically, the effect will be to push them off the broadband platforms they just clambered aboard. They will suffer, but so will the broadband providers in their countries.

At this critical juncture, just as Internet penetration is rising among middle- and low-income groups in these countries, a sudden jump in cost of access could short-circuit the wider economic growth the digital economy can foster.

The extraordinary success experienced in connecting millions of people in developing countries to voice networks was achieved through a Budget Telecom Network business model, the basis of which is low prices and low transaction costs made possible by prepaid plans.<sup>6</sup> The current upsurge in Internet use in the developing world is driven by efforts to extend the Budget Telecom Network model from voice to data. When users see useful and interesting content at affordable prices and they can access such content through relatively low-cost devices using prepaid plans that allow them to pay for what they use when they have the money, there is rapid adoption of mobile broadband.

Ghana offers a good illustration because, with annual Gross Domestic Product growth of 20.1 percent, and a GDP in 2011 of \$37.2 billion, it is the fastest growing economy in Africa.<sup>7</sup> Economists predict Ghana's annual growth rate will be about 10 percent per year over the next three years.

Meanwhile, Internet penetration in Ghana is estimated also to be growing by 10 percent per year,<sup>8</sup> fueled by attractive content and declining Internet prices that put on-line access within the reach of more Ghanaian consumers. Monthly wireless Internet packages are as low as \$7.50.<sup>9</sup>

A sending party network pays regime will change this model in several ways. For Ghanaian users, access to any site, large or small, that must traverse a sending party pays network, is likely to come at a surcharge, if it is available at all.

So what happens? Sending party network pays policies will lead to a general slowdown in Internet penetration as users experience higher prices and less utility from their Internet access.

Because the digital economy is a general growth driver in developing countries, slower Internet adoption stands to ripple through the economy as a whole. It is well accepted that broadband growth is correlated to economic growth, though there may be differences of opinion regarding the extent of the contribution at different stages of development. The corollary is that if broadband growth slows or reverses, there is bound to be negative effects on economic growth. This is something that must be kept in mind when far-reaching changes to the very architecture of the Internet are sought to be implemented at WCIT.

## **The Africa Region Proposals**

Alongside the ETNO sending party network pays proposal are a group of controversial regulations proposed in the Africa Region contribution. The cost consequences of ETNO's sending party network pays proposal, however, are easy to identify and even address through consensus and compromise. The Africa Region proposals pose deeper problems.

The Region's proposal aims to impose broad regulations on the economics and content of the Internet, and seeks to redefine once-narrow ITR telecommunications definitions to encompass the much-larger ecosystem of the digital economy, including Internet service providers (ISPs), content providers and Internet standards-making bodies.

Mostly through the use of vague, general language, these objectives are woven into wholesale rewrites of the ITRs, couched in ways to appear merely as technical approaches to billing, network management, quality control and security. While the changes are more nuanced than a sound bite can contain, they have been the source of the headlines about UN control of the Internet.

### *Regulation of Internet Service Providers and/or Content Providers*

Current ITU treaty obligations apply only to operators typically recognized as common carriers, such as AT&T in the US, NTT in Japan and Telekom in South Africa. The Africa Region proposal (along with several others) supports expanding the scope of certain international telecommunications regulations to include "operating agencies." The term could significantly expand the reach of the treaty to include ISPs and content providers. Expanding the definition of telecommunications serves the same function. Every entity along the line from content creators to end users could be subject to rules, regulations and tariffs that were developed more than 20 years ago for circuit-switched networks.

In addition to these general changes, there are more granular proposals. Chiefly, the Africa Region proposal aims to rewrite the entire section of ITRs on charging and accounting—Article 6—starting with new heading called "Economic and Policy Issues." Here, the Africa Region proposes a sweeping range of wholesale and retail price regulation, quality of service standards, intercarrier compensation and international financial support for universal service.

These provisions represent a new and significant international intervention into private economic activity. Proposed language such as "fair compensation for carried traffic" could be used as a means for governments to impose additional charges on Internet interconnectivity agreements previously negotiated by private sector parties.

Moreover, these provisions likely would require numerous domestic regulatory actions to implement. For example, the reference to universal service is unclear. Many countries have universal service subsidy mechanisms funded in various ways. These domestic policy initiatives should not be linked to the ITRs. To the extent this language refers to

international universal service charges, the proposal essentially gives governments the right to tax incoming international telecommunications, changing a crucial element of the consensus arrived at in the difficult negotiations over the ITRs in Melbourne in 1988.

### *Standards Development*

The Africa Region supports a greater role for the ITU in standards setting, including establishing standards for Internet-related issues. The ITU-T and ITU-R already are part of the standards process. These proposals, however, would elevate the ITU's role of standards setting, potentially to the point where standards would have the force of treaty, supplanting the work of established and voluntary multi-stakeholder organizations like Internet Engineering Task Force (IETF) and the Institute of Electrical and Electronics Engineers (IEEE), among others.

### *Call Routing Transparency*

A number of proposals seek to give ITU member states the right to know which international routes are used for carrying incoming Internet traffic. The Africa Region, however, wants to go a step further and give governments the right to impose routing regulations over international traffic, up to and including the creation of a single authorized gateway for incoming Internet data.

The extended proposal seeks to fundamentally change the architecture of the Internet, a not very realistic objective. Even if implementable, it would create a series of bottlenecks that removes the resiliency and redundancy that allows the Internet, as a packet-switched network, to function properly.

### *Dispute Resolution*

The Africa Region supports the creation of new international forums—such as at the ITU—for resolving disputes between international operators and mandating that operators have access to alternative dispute resolution mechanisms. In essence, the proposal would supplant existing dispute resolution mechanisms that have been agreed to by the parties involved and enforced by local legal jurisdictions. These proposals could give the ITU an unprecedented quasi-judicial enforcement role with arbitral powers beyond that which it holds today. Such proposals must be assessed in terms of the ITU's actual capabilities and the slow pace of its work.

### *Cybersecurity and Spam*

The Africa Region contribution supports adoption of broad, new cybersecurity regulations, including mandatory cross-border cooperation and information sharing. Although this sounds like a worthy goal, the envisioned mechanism is fraught with problems. For one, the proposals would impose broad obligations on governments in the areas of privacy, security, and fraud, possibly impinging on domestic sovereignty and policies. Second, the ITU has never been involved in areas of content control or crime prevention. These

complex issues are outside of its expertise. Credible organizations such as FIRST.org are already providing expert cyber security assistance to developing countries. Finally, the proposals are vague enough to potentially open the door for countries that wish to regulate content in the name of security.

The proposals from ETNO and the Africa Region, in concert with others that seek to elevate the ITU's role in content control and management of Internet domains, threaten to reverse 20 years of competition-based policies in international telecom regulation—a course that the ITU has endorsed and supported in the past. The existing policies have worked. They have been responsible for deployment of a worldwide voice telephony platform that is now being extended to data. The market-based approach has delivered affordable connectivity to some of the world's most remote peoples and places. And now, it is putting the expanse of the Internet in their hands as well.

## **Conclusions**

The enormous momentum that the developing countries have achieved in telecommunications is endangered by the ill thought out proposals before the WCIT. If the revised ITRs artificially raise the cost of network interconnection, content delivery, or quality of service, all these costs will be passed along to those least able to afford them, or will result in their exclusion from the Internet economy. The door will be opened for creation of a top-down, inflexible international regulatory regime for the Internet, replacing the multi-stakeholder process that has yielded unparalleled benefits.

Throughout its years of tremendous growth in access and connectivity, the Internet has been guided by multiple stakeholders from around the world. They include corporations, governments, NGOs, standards bodies, and concerned individuals. The process has not always been smooth, and there has often been disagreement and compromise. But one goal has been paramount—maintaining an Internet built on open standards and connectivity that would allow seamless connection and free exchange of content and applications.

If business process innovations enabled by competition are solving the problem of connecting billions of people, why, then, is a greater role being proposed for the ITU? When the budget telecom network business model is delivering the goods, the most appropriate government action is to leverage it to advance public policy objectives.<sup>10</sup> Innovative business models that above all deliver services that people need and are within their means to afford, as was done with voice telephony, can indeed build the necessary revenues needed for broadband investment. The massive investments in Africa's international backhaul capacity illustrate this point.

Success in voice was not achieved by extracting revenues from third parties. Neither will success in data. The WCIT in Dubai offers a significant opportunity for the member states of the ITU to re-commit to their past support of liberalization and multi-stakeholder processes and turn back efforts to extend to the Internet policies that were proven ineffective even for voice telephony.

---

## Endnotes

- <sup>1</sup> "Internet penetration Grew by 10 per cent Last Year," Ghanaweb.com, March 16, 2012, available at <http://www.ghanaweb.com/GhanaHomePage/business/artikel.php?ID=232902>, accessed Sept. 6, 2012.
- <sup>2</sup> International Telecommunications Union Key Global Telecom Indicators for the World Telecommunication Service Sectors updated Nov. 16, 2011, available at [http://www.itu.int/ITU-D/ict/statistics/at\\_glance/KeyTelecom.html](http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html), accessed Sept. 19, 2012.
- <sup>3</sup> International Telecommunications Union Key Global Telecom Indicators for the World Telecommunication Service Sectors updated Nov. 16, 2011, available at [http://www.itu.int/ITU-D/ict/statistics/at\\_glance/KeyTelecom.html](http://www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom.html), accessed Sept. 19, 2012.
- <sup>4</sup> World Bank, Transformation Ready: "Using ICT to Fast-Track Africa's Development Path," (no date), p. 2, available at [http://siteresources.worldbank.org/INFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/WorldBank\\_ICT\\_brochure.pdf](http://siteresources.worldbank.org/INFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/WorldBank_ICT_brochure.pdf), accessed Sept. 19, 2012.
- <sup>5</sup> International Telecommunication Union (ITU), "Key statistical highlights: ITU data release June 2012," 2012, available at [http://www.itu.int/ITU-D/ict/statistics/material/pdf/2011\\_Statistical\\_Highlights\\_June\\_2012.pdf](http://www.itu.int/ITU-D/ict/statistics/material/pdf/2011_Statistical_Highlights_June_2012.pdf), accessed Sept. 12, 2012.
- <sup>6</sup> Samarajiva, Rohan (2009). How the developing world may participate in the global Internet economy: Innovation driven by competition, in *ICTs for development: Improving policy coherence*, pp. 75-118. Paris: OECD. <http://www.oecd.org/dataoecd/39/15/44003919.pdf>
- <sup>7</sup> Kwame E. Bid, "The State of Ghana's Economy in 2011," GhanaWeb.com, Aug. 30, 2011, available at <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=217368>, accessed Sept. 11, 2012.
- <sup>8</sup> "Internet penetration grew by 10 per cent last year," GhanaWeb, March 16, 2012, available at <http://www.ghanaweb.com/GhanaHomePage/business/artikel.php?ID=232902>, accessed Sept. 11, 2012.
- <sup>9</sup> Charles Mensah, "Glo Data Bundles in Ghana," TechyAfrica, May 9, 2012, available at <http://techy-africa.com/2012/05/glo-internet-rates-in-ghana>, accessed Sept. 11, 2012.
- <sup>10</sup> Samarajiva, Rohan (2010). Leveraging the budget telecom network business model to bring broadband to the people, *Information Technology and International Development*, 6, special edition: 93-97. <http://itidjournal.org/itid/article/view/630/270>, accessed Sept 11, 2012.