The Gathering Storm: WCIT and the Global Regulation of the Internet

BY RICHARD BENNETT

SUMMARY

At the upcoming International Telecommunication Union (ITU) World Conference on International Telecommunications (WCIT) in Dubai, to be held from December 3-14, delegates will consider proposals to amend the International Telecommunication Regulations (ITRs,) binding rules that govern telecommunications network practices around the world. While ITRs are currently limited to the telephone network, several WCIT proposals would expand their scope, making them apply broadly across the entire Internet ecosystem. The ITRs were last amended in 1988, before the Internet was a public system and before many of the most important telecommunications systems and networks we use today were even invented. ITRs have not historically applied to the Internet, which has developed its own international governance institutions, so it's peculiar that some nations want to extend them so radically at this stage.

The growth the Internet, the widespread adoption of mobile handsets, the rise of new media and the emergence of a new economic sector driven by the innovation these technologies enable all suggest that the community of global telecom regulators would be wise to follow the adage "if it ain't broke, don't fix it." There is nothing to be gained from expanding the ITU's reach into the details of Internet standards and governance, and much to be lost.

While it's certainly clear that the emergence of the digital economy is enriching entrepreneurs, growing the economy, and improving quality of life around the world (not to mention helping topple authoritarian governments,) change of this magnitude is bound to generate friction with traditional practices in local regulation and investment, as well as with national government practices and social norms.

The Internet's form of governance is, with the exception of the Internet Corporation for Assigned Names and Numbers (ICANN,) a loose, consensus-based system of voluntary agreements. The more dangerous proposals offered to WCIT would replace this largely informal system with a system even more rigid than the methods of traditional telephone network regulation currently embodied in the ITU.

The nations that seek to alter Internet governance have a variety of motivations and agendas:

1. Some European telephone companies who are burdened by unproductive EU unbundling regulations seek to obtain additional revenue by charging interconnection fees to networks in countries where unbundling is not the norm. Some developing nations, such as India, take the European proposal on interconnection fees a step farther, and would apply it in the content and services sector directly.

2. Some traditional states, concerned that the material the Internet makes available to their subjects can have a corrosive effect on traditional social norms, seek to legitimize their current censorship practices. Similarly, a relatively large group of non-democratic nations see the Internet as politically disruptive because it enables

citizens to circumvent local laws limiting criticism of government policies; they seek to legitimize current surveillance practices.

3. Other countries, such as China, desire to manipulate voluntary, industry-led global technical standards to the benefit of Chinese-owned companies, such as Huawei. They seek to make ITU-T "Recommendations," which are voluntary technical standards today, into mandatory regulations.

4. Russia seeks to transfer the management of Internet addresses and assigned names and numbers from ICANN to the ITU.

While these agendas are distinct and even inconsistent in many respects, the common belief that the current model of Internet governance falls short of meeting local needs forms the basis of a large "ITU Internet governance" coalition, at least by the numbers. This coalition is largely built on a fallacious premise, however.

China's interest in Huawei's success in the market for Internet switches and routers is quite distinct from the interests that concern other members of the ITU Internet governance coalition. Technical standards are a genuinely global issue, and China has already shown a willingness to involve the ITU-T (ITU's technical standards arm) in their development when Chinese companies are unable to get their way in the legitimate Internet standards forum, the Internet Engineering Task Force (IETF.) China successfully lobbied ITU-T to endorse a technical standard developed by Huawei after it was rejected by IETF, for example. ITU-T is extremely vulnerable to global political pressure because its members represent nations, while IETF is predominately driven by technical considerations and involves a much broader membership.

The issues that countries other than China have with the Internet's current norms in operation and governance can be addressed quite efficiently and effectively at the national level without changing the way the Internet governs itself:

1. National and regional regulators can alter the formulas they use for setting wholesale broadband prices such that network service providers are no longer discouraged from investing in next generation networks.

2. Technology exists that can censor Internet sites that disseminate undesirable material, and such technology can be employed with or without ITRs; these practices are common today and don't require ITU endorsement.

3. Similarly, local laws on speech, free and otherwise, can be enforced through traditional legal practices and by technology, as we've already seen in China and some other nations. ITRs add nothing to this process.

4. Developing nations can encourage the development of indigenous entrepreneurial business that can satisfy more local needs from data centers within the country, reducing their need to interconnect to far away data centers in Europe and North

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America, and reducing their costs. Developing nations burdened by the high cost of connecting to far away Internet Exchange Points (IXPs) can lower their costs and promote local enterprises by investing in their own IXPs.

5. While ICANN has been a whipping boy for a variety of interests, its shortcomings are primarily the result of a lack of participation by interested parties. Most ICANN participants today are domain registrars, but others are free to participate as well.

So it's unclear that a genuine common interest unites China and the other nations seeking fundamental changes in Internet governance, other than to substitute the current, effective, *ad hoc* governance system with a more regulatory state-directed one.

Even more disturbing is the evidence that much of the effort to impose new ITRs on the Internet comes from a fundamental lack of understanding of the Internet's technical norms and institutions as well as its power to spur economic growth and to enhance quality of life.

Some nations seek to establish end-to-end quality of service guarantees across flows that span multiple networks, for example, despite the fact that there is no technical means for making such guarantees today. Other nations seek to reorganize the Internet's multi-stakeholder governance system in order to gain a voice in the process when they can accomplish this end by simply participating in the current system.

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The legitimate role of ITU in Internet governance and regulation is very small. ITU is an organization that developed communications policy in a different era, when communication networks were largely limited to voice communications and were generally operated by governments and regulated by international treaty. To date, it has limited its work to necessary features of telephone network maintenance. The ITRs that govern this process have been brief, high-level statements of principle entirely different from the detailed, aspirational rules it's now urged to adopt by China, Russia, and the others.

In the new world of mobile networks and the Internet, the commercial sector is the network operator and each nation makes its own regulations governing networks. Shifting control of regulatory policy to a global body of regulators pressed by nations with parochial and often mercantilist Interests is not an improvement.

If any change needs to be made at all in the ITRs with respect to the Internet, it should be limited to creating a firewall between the authority of ITU and the operation of the Internet. The Internet's organic governance system has proved to be quite effective, in no small part due to its close proximity to the Internet's technical standards and business practices. Technologies that enable rapid rates of change need the ability to adapt to changing conditions quickly; an international treaty organization that convenes once every fifteen years does not fit the bill. The ITU is facing obsolescence as we begin to retire the

telephone networks that have been its sole focus since the phase-out of the telegraph, but this existential crisis does not justify a wholesale restructuring of Internet governance.

OVERVIEW

The International Telecommunication Union (ITU,) formerly known as the International Telegraph Union, is an agency of the United Nations responsible for regulating global telecommunications.[1] Primarily, it manages the global use of the telephone network, harmonizes radio frequency spectrum assignments, and establishes worldwide telecommunications standards and interconnection practices. At its upcoming World Conference on International Telecommunications (WCIT) in Dubai from December 3–14, ITU will consider a number of proposals that would expand the scope of its power to Internet regulation, interconnection, and governance as well as to the information technology (IT) sector generally. These proposals, if adopted in full, would transform ITU from an international telecommunications sector regulator to an "Information Technology and Communications (ICT) regulator," vastly expanding its reach. The mechanism for this expansion is amendment of the International Telecommunications Regulations (ITRs,) treaties that specify the ITU's duties and the common agreements among its 193 member states.

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Dr. Hamadoun I. Touré, Secretary-General of the ITU and chief proponent of extending the ITRs to the Internet and the IT sector, sought to justify the WCIT agenda in a recent article in *Wired Magazine*. His declared that his principal objective is to satisfy concerns over universal service:

> The conference will chart a globally agreed-upon roadmap that offers future connectivity to all, and ensures sufficient communications capacity to cope with the exponential growth in voice, video, and data. The sole focus of the event is making regulations valuable to all stakeholders, creating a robust pillar to support future growth in global communications.[2]

Touré cited additional concerns regarding safety and cybersecurity: "Governments are looking for more effective frameworks to combat fraud and other crimes." But it's anything but clear that future connectivity to all will be accomplished by regulation. Rather, such a digital opportunity agenda is best accomplished by smart and robust broadband deployment and adoption policies in individual nations and the limited use of global funds for smart infrastructure development initiatives in poor countries.

The following summarizes some of the most significant proposals to be discussed at the conference.

ETNO's Proposals

The principal proposal on the financial front comes from the European Network Operators' Association (ETNO,) a group of European wholesale telephone companies reeling from the effects of unbundling regulations applied to broadband wireline networks. ETNO's proposal addresses the issues of financial sustainability and network quality of service (QoS):

New services enabled by the Internet are changing the economic landscape, and indeed the very nature of the telecoms industry. All telecommunications traffic is migrating to Internet protocol-based communication. This transition from the dedicated phone and data networks to converged IP-based networks raises major regulatory, technical and economic issues.

It is therefore of utmost importance to ensure a sustainable development of the sector, essential for the necessary investments in the global telecommunications infrastructures of tomorrow. Revisions of the ITRs should acknowledge the challenges of the new Internet economy and the principles that fair compensation is received for carried traffic and operators' revenues should not be disconnected from the investment needs caused by rapid Internet traffic growth. This should at best be achieved through commercial arrangements between players.

To ensure more efficient use of networks and to allow for new business models better reflecting future demand, Member States should support a new IP interconnection ecosystem that provides both, best effort delivery and end-to-end Quality of Service delivery. Delivery based on QoS allows for management of the IP traffic according to its characteristics (i.e. delivery requirements and acknowledged value) thus supporting innovation to provide a value-added service, making better use of the assets of telecommunications operators.[3]

ETNO proposes that these objectives are best met by adding the following two clauses to the ITRs:

Article 3, International Network

3.1. Members States shall ensure that Operating Agencies cooperate in the establishment, operation and maintenance of the international network to provide satisfactory quality of service. Member States shall facilitate the development of international IP interconnections providing both best effort delivery and end to end quality of service delivery.

3.2 Operating Agencies shall endeavour to provide sufficient telecommunications facilities to meet requirements of and demand for international telecommunication services. For this purpose, and to ensure an adequate return on investment in high bandwidth infrastructures, operating agencies shall negotiate commercial agreements to achieve a sustainable system of fair compensation for telecommunications services and, *where appropriate, respecting the principle of sending party network pays.*

Article 4, International Telecommunication Services

Operating Agencies shall cooperate in the development of international IP interconnections providing both, best effort delivery and end to end quality of service delivery. Best effort delivery should continue to form the basis of international IP traffic exchange. Nothing shall preclude commercial agreements with differentiated quality of service delivery to develop.[4][Note: Emphasis added.]

While some critics have attacked the content of these proposals for their apparent departure from Internet norms, such criticism misses the point. These proposals, by themselves, are neither wholly destructive nor utterly out of step with current practices. The controversial "sending party pays, where appropriate" proposal mirrors the practice of "Paid Peering, where appropriate" that is relatively common in the Internet ecosystem today, despite protestations to the contrary.[5] In the United States, Comcast and Level 3 interconnect on this basis, for example.[6] "Paid Peering" is less common than "Paid Transit" or "Settlement Free Peering," but it certainly exists. The fact that this form is interconnection is occasionally used today demonstrates that its addition to the ITRs serves no useful purpose.

It is also possible for specialized networks and Internet Exchange Points (IXP) to support connections that have stringent Quality of Service (QoS) requirements not met by the mainstream, best-efforts Internet model; two examples are the Voice Communication Exchange (VCXC,) created for voice exchange, and premium backbones provided by such firms as Korea Telecom for video streaming.[7] These interconnection regimes are generally separate and distinct from best-efforts interconnection regimes, however. VCXC is a specialized facility housed in a separate location from the mainstream IXPs and its members only exchange voice traffic with each other. This is because end-to-end QoS guarantees require a specialized infrastructure that doesn't support the mixing of QoS and best-efforts traffic. While VCXC uses Internet Protocol, it's not "the Internet" but a parallel network that requires members to employ traffic engineering that's not commonplace. ETNO members and others who desire to interconnect with guaranteed QoS are free to join specialized exchanges such as VCXC today, hence Article 3.1 is redundant. It also creates confusion by conveying the impression that the ordinary, public Internet is generally capable of providing QoS guarantees when it isn't.

Just as the financial terms proposed as "appropriate in some instances" by Article 3.2— "Sending Party Pays"—are freely negotiated in "Paid Peering" agreements today, QoS interconnection is possible where it's required.[8] There is simply no need to amend ITRs to permit practices that are already relatively common, let alone to mandate them.

Finally, the proposed Article applies not just to the "Recognized Operating Agencies," the nations who are the traditional signatories of the ITRs, but to a broader category of "Operating Agencies," all networks that participate in the Internet, and potentially to service providers as well. This expansion of the scope of the ITRs changes them from voluntary agreements among nation states drafted with full participation of all affected parties to a micro-management of commercial activities between parties who are not allowed to participate in the WCIT process and who most assuredly would not consent to such conditions if they could participate.

Most of the networks that comprise the Internet are privately owned, as the United States' submissions make clear. One of the Internet's most profound advancements is the private ownership of its constituent networks and the ability to interconnect peer-to-peer according to terms of their choosing. ETNO would seemingly erase the dynamism of the Internet's business model by favoring a system of rigidly-defined regulations over private agreements that would have the long-term effect of locking-in the *status quo*.

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The fact that the ETNO proposals range from redundancy to incoherence would be sufficient grounds for rejection in its own right, but the deeper problem is their desire to involve the ITU in a matter that's quite clearly outside its zone of expertise. If these proposals had merit on their own, they could be negotiated in national and regional jurisdictions where agreement exists on their implementation details, not in a global body whose expertise is limited to traditional telecommunication and spectrum harmonization. Particular pairs of networks are certainly free to interconnect on this basis if they wish, in any case.

ETNO's proposals appear to the motivated by constraints on network operator behavior imposed by Europe's "unbundling" system. United States policy is to promote appropriate levels of investment and pricing through "intermodal" or "facilities-based" competition between such entities as former telephone companies, cable TV companies, wireless network service providers, satellite broadband providers, and "third pipe" companies that serve smaller areas, such as Sonic.net, the San Francisco Bay Area ISP that serves customers through a combination of DSL and fiber.

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For a variety of historical reasons, Europe has taken a different tack, emphasizing "intra-modal competition" between retail ISPs over the common infrastructure inherited from the formerly state-owned telephone networks now in the hands of regulated, privately-owned monopoly service providers, similar to America's AT&T before divestiture. Without facilities to support choice between physical networks, Europe seeks to create the appearance of competition among retail ISPs who share a common wholesale network.

The effect of intra-modal competition in Europe has been to keep the price of broadband service artificially low and to limit private investment in networks more advanced than Digital Subscriber Line (DSL) on legacy copper networks. ETNO sees WCIT as a way to bypass the investment-killing effects of unbundling by collecting access fees from other networks, ironically those in intermodal countries. Analyst Larry Downes explains this dynamic:

> The companies are hamstrung by EU regulations on pricing and unbundling of their assets, which ETNO claims is driving its members broke. Their plan is to use WCIT to resurrect the old international long distance model, enabling them to extract revenue from high-volume websites and other Internet services. Most of these services, including video providers such as YouTube, Netflix, and Hulu, operate outside the EU.[9]

Europe adopted unbundling in the 1990s when the typical European nation had a single communications network, the telephone system. Since then, cable TV networks have become more common and many nations have invested in fiber networks that are government-subsidized or simply less regulated. The conditions that justified unbundling are waning, so even if it were wise to try to remedy its effects by infusing the local network with cash extracted from foreign networks, the timing of this proposal is out of step with current realities. If Europe wants to solve this problem while maintaining unbundling it simply has to allow an increase in wholesale prices.

India's Proposals

India proposes to use the ITRs to impose non-market based prices on Internet and mobile services:

> 6.15 Member States shall promote cost-oriented pricing. Regulatory measures may be imposed to the extent that this cannot be achieved through market mechanisms and to the extent that such measures do not hinder competition.[10]

India also emphasizes the right of nations to tax international interconnections:

> 6.1.3 Member States are free to levy fiscal taxes on international telecommunication services in accordance with their national laws;[11]

Consequently, it's not unreasonable to suppose that the combination of these two clauses would support an Indian policy of taxing foreign-owned networks connecting to Indian networks under the guise of promoting domestic network competition.

While some of this language exists in current ITRs governing telephony, India, like many other states, seeks to expand the scope of the ITRs beyond the traditional sphere of simple "telecommunication" (the transmission of information) to the much more expansive sphere of "Information Processing and Communications Technologies" (ICT) which encompasses the creation, processing, and storage of information as well its transmission. It would add the language in italics to the current definition of the scope of the ITRs:[12]

> 2.1A Telecommunication/*ICT*: Any transmission, emission or reception, *including processing,* of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems, having a bearing on Telecommunication Technologies and Services.

This is an enormous expansion of jurisdiction for the ITRs that would make information processing services the subject of international treaty for the first time. The term "information processing services" relates to the activities performed by such Internet-based service providers as Google, Facebook, Twitter, and Skype, firms that have never been regulated by U. N. treaty before. This is extremely disturbing because it's in the nature of international treaties to preserve the commercial and technical status quo, which inhibits progress in information processing services.

India also seeks to micromanage international pricing according to the following non-market-based terms:

> 6.D Member States should endeavor to take measures to ensure that an adequate return is provided on investments in network infrastructures in identified areas. If this cannot be achieved through market mechanisms, then other mechanisms may be used.[13]

This relates to the tariff issue. As previously mentioned, carriers are inhibited from investing in infrastructure where prices are fixed at levels too low to promote investment.

Where investment is inhibited by such excessive regulation, India proposes to impose even more regulation to mitigate the effects of current regulation on the communications and IT sectors in this case to essentially impose tariffs on incoming bits.

A more productive approach is to stimulate domestic investment through a combination of market liberalization and direct subsidies to rural networks. In less developed countries, investment in Internet Exchange Points and telephony exchanges is often severely limited, which raises communication costs by requiring low-distance backhaul to such IXPs as do exist, typically in large cities and often in other countries. The solution to this problem is an international fund to subsidize IXPs and voice exchanges, with appropriate oversight against corrupt misdirection of funds.

The expansion of the scope of the ITRs to "ICT" instead of "telecommunication" means that content and services made available to users around the world would be subject to tariffs and fees, not simply the mechanisms that allow for information to be transmitted and received. Instead of paying a fee for each minute that a phone call is connected, the norm in international telephony but not for Internet interconnection, every packet of information flowing into India would potentially be subject to taxation based on the cost of the production of the packet, per the "cost-oriented pricing" scheme mentioned above.

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In other words, India proposes a scheme that would allow every packet of information crossing its borders to be taxed according to a judgment of its cost of production. One major issue with all "cost-oriented pricing" schemes is that the task of establishing the production cost of a packet or an information processing service falls on a bureaucrat who is motivated to subsidize and protect the domestic sector. Commercial agreements are more efficient means of establishing pricing, as long as effective competition exists.

Imposing tariffs on the content of communications contradicts the ITU Constitution's goal of "promoting the development of telecommunication services and their most efficient operation while harmonizing the development of facilities for world-wide telecommunications."[14] Hence India, along with several others, seeks to elevate the ITRs to equal status with the ITU Constitution by declaring it a "complement" rather than a "supplement." Such small changes can have enormous consequences.

China's Agenda

China has effectively established a neo-colonial relationship with many developing countries by investing extensively in local projects and supporting local officials. Hence, it rightly regards ITU as a friendly venue for its broad Internet agenda. One stark example of China's manipulation of the ITU is the debacle around the technical standards for the telephony variant of Multiprotocol Label Switching (MPLS,) the technology that underlies much of the Internet. The MPLS controversy was described by IETF member Iljitsch van Beijnum in an *Ars Tecnica* article:

> Over the past few days, a long-simmering disagreement between the ITU-T and the IETF over a management protocol for telecom-operator networks erupted into the open. The technology at the heart of the dispute is operations and management (OAM) for Transport MPLS. T-MPLS refers to an adaptation of the Internet

Engineering Task Force (IETF)'s MPLS protocol to telecom networks. MPLS can carry packets of different types, exactly what telecom operators need to offer private connections as well as regular IPv4 and IPv6 over a unified backbone.

The International Telecommunication Union Standardization Sector (ITU-T) Study Group 15 working on T-MPLS voted last week to go ahead with its own management protocol, rather than keep working with the IETF on the development of a single protocol. In response to this, the Internet Society (ISOC), which is closely associated with the IETF, warned in its newsletter that the ITU study group decision would "jeopardize the globally interconnected Internet." Just to make sure the ITU understood these are fighting words, IETF admonished the group, saying that "furthermore, this ITU-T SG15 action represents a serious breach of the IETF/ ITU-T Joint Working Team (JWT) agreement."[15]

The ITU claimed that IETF had "unilaterally disbanded" the MPLS-TP working group, which is not correct, since the IETF working group responsible for developing the OAM protocol for MPLS was not disbanded. The working group had spun off a design team to produce a technical solution, and when this team had done its work, the design was accepted by the full working group and the design team was terminated. The Internet Society has explained that the full working group then went to develop a standard around that very design without missing a beat:

[T]his ITU-T SG15 action represents a serious breach of the IETF/ ITU-T Joint Working Team (JWT) agreement. This JWT was commissioned by the ITU-T and IETF to examine the feasibility of a single, collaborative solution to MPLS transport requirements. The team unanimously agreed that a single viable solution had been identified; their report was completed in April 2008 and accepted in December 2008. This JWT Report states not only that a single solution was possible but also recommended an approach where protocol development for MPLS-TP would be undertaken by the IETF. The IETF and ITU-T independently accepted and endorsed the JWT report. The ITU-T committed to the IETF that they would abide by the JWT recommendations and recognized the IETF as the design authority for MPLS. Furthermore, the JWT confirmed that it was technically feasible to extend the existing MPLS architecture to meet the requirements of a transport profile, now called MPLS-TP. Since the acceptance of the JWT Report, both organizations have worked constructively until now. [16]

The underlying issue is that Huawei, a Chinese firm that some assert is controlled by the Chinese government, and Alcatel-Lucent, a French firm, had developed their own OAM protocol before either ITU-T or IETF had begun their respective processes of standardization. When IETF members, who have considerably more expertise in Internet standards and protocols than does ITU-T, studied the Huawei/Alcatel solution they found a number of issues that would make the system unstable on the Internet. The IETF design team devised what they believed to be a better solution and proposed that Huawei and Alcatel move their customers toward it. Huawei and Alcatel initially agreed but then objected, insisting that both their solution and IETF's solution should move forward with

equal status, despite their prior promise to follow IETF's lead. ITU-T was only too happy to comply, reversing its agreement with IETF and making the Huawei/Alcatel solution an "ITU-T Recommendation," effectively a standard. The current standards are in fact non-interoperable, which leads to confusion, network errors, and further instability.

China now seeks to make ITU-T the official standards body for the Internet, with IETF in a subordinate role. This would be a fundamental change from the past practices of both IETF and ITU-T, bad for the Internet in three respects:

1. ITU-T has not demonstrated an ability to create original standards on its own. Rather, it endorses commercial systems designed outside its process and lacks the broad participation and deep expertise that characterizes IETF.

2. While IETF "Standards" and ITU-T "Recommendations" are currently voluntary, out of respect for the evolving nature of technology, China seeks to make ITU-T "Recommendations" into mandatory standards. This change elevates them to the status of binding legal obligations that can only be modified or replaced through a bureaucratic process that China currently controls through its clients, allies and proxies. This is wrong on every level.

3. It is important to remember that in the ITU every member country gets one vote, putting a country like Moldavia on the same grounds as Japan or the United States. If the ITU controls the Internet standards process, the probability that future technical standards will become political instruments to favor some firms over others, depending on their ties to particular national governments, is extremely high.

As of this date, China has not formally proposed this change in role for ITU-T, but appears to be advancing this agenda through proxies and other informal means.

Russia's Proposals

Russia seeks to transfer control of Internet addresses, assigned names and assigned numbers from ICANN to ITU. It does this by adding a new article 3A to the ITRs directly establishing jurisdiction over the Internet, including its shared naming, addressing, and numbering systems. Russia proposes that this new article include the following clause:

> 3A.2 Member States shall have equal rights to manage the Internet, including in regard to the allotment, assignment and reclamation of Internet numbering, naming, addressing and identification resources and to support for the operation and development of basic Internet infrastructure.[17]

While this language doesn't say the ITU should abolish ICANN, it raises an objection to ICANN's current mode of operation, which effectively grants unequal power to those who participate in its deliberations over those who don't participate. If ITU member states are to have equal rights to manage the Internet, its governance would need to be transferred

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from ICANN and IETF to an organization composed of ITU member states in which each has an equal voice. The only such organization in existence is the ITU itself.

Current methods of Internet governance and administration give more power to direct participants than to disinterested bystanders, but this is a good thing. It ensures that all parties affected by Internet governance, not just governments but commercial firms and civil society, have a voice in the decision making process equal to their knowledge and interest. While it's certainly the case that registrars, protocol designers, and the firms that produce Internet equipment and who operate networks have more influence over the process than others, this influence is related to the expertise in technical and economic matters and their commitment to the process.

Russia would shift the balance of participation from a network-to-network system to a government-to-government system in which experts would be required to participate indirectly, through government actors much less well informed on the issues:

> 3A.5 Member States should ensure that administrations and operating agencies cooperate in ensuring the integrity, reliable operation and security of the national Internet segment, direct relations for the carrying of Internet traffic and the basic Internet infrastructure.[18]

A better approach would be for nations to participate directly in ICANN and IETF, organizations whose meetings are open to all who care to take part.

BUILDING A FIREWALL

Submissions by the United States and the Internet Society (ISOC), the formal convener of the IETF standards process and related bodies such as the Internet Architecture Board (IAB) and the Internet Research Task Force (IRTF,) reflect a clear understanding of the Internet's pros and cons and a realistic assessment of the role of the ITRs in the regulation of global networks.

ISOC Proposals

On the positive side, ISOC reminds WCIT of the good the Internet has done:

> The Internet Society fundamentally believes that the growth of the Internet is good for humanity. Globally interconnected networks have empowered citizens, transformed economies and brought enormous benefits to communities worldwide. The expansion of telecommunications networks throughout the 1980s and 1990s combined with the ingenuity of the technical community, the liberalization of policy frameworks worldwide, and a competitive marketplace for new communication services all have contributed to the success of the Internet. [19]

It's useful to note, without succumbing to gloom and doom, that we stand to lose many of these positive developments if the Internet is shackled by the worst of the WCIT proposals. But ISOC isn't afraid to acknowledge the basis of the concerns that have prompted some ITU member states to propose new regulations on the Internet. There are real problems,

but these problems demand realistic solutions that ITU cannot provide through the simple expedient of micro-managing Internet applications and interconnections by treaty:

> At the same time we that recognize greater global connectivity has raised a host of new policy challenges for governments. Clearly, developing countries face very real economic challenges in bridging the digital divide. Throughout the WCIT preparatory process, governments have raised important concerns about spam, security, and connectivity costs. We understand and, in some cases, share these concerns; however, we do not believe that a binding intergovernmental treaty is the best mechanism to solve these complex and evolving issues. The reality is that technology moves faster than any treaty process ever can. It is also important to recognize that there is rarely a one-size-fits-all solution to the kinds of policy challenges outlined above. Local policy environments, market conditions, and the development context are important factors in any policy process. Solutions need to work locally.[20]

ISOC offers clear and concise suggestions on each of key issues raised by the proposals to increase ITU's role:

1. On the scope of application of ITRs—Operating Agency / Recognized Operating Agency:
   ISOC proposes to limit ITRs to states rather than private networks
2. On the voluntary Nature of ITU-T Recommendations:
   ISOC proposes to retain current voluntary nature of ITU-T Recommendations
3. On Private Commercial Arrangements:
   ISOC proposes to keep ITRs out of commercial agreements
4. On definitions of Telecommunication and International Telecommunication:
   ISOC proposes to retain current definitions
5. On the addition of ICT to the ITRs:
   ISOC proposes not to expand the ITR scope to information processing and services
6. On the addition of provisions related to spam:
   ISOC proposes not to add anti-spam language, especially the proposed unenforceable language
7. On the role of competition:
   ISOC proposes to recognize that pro-competition local policies on network investment produce the best results
8. On Quality of Service:
   ISOC proposes to refrain from imposing telecommunication network design assumptions on the Internet
9. On Traffic Routing:
   ISOC proposes not to add specific regulation on routing
10. On Naming, Numbering and Addressing:
    ISOC proposes not to conflate telephone numbering with Internet addressing

11. On Cybersecurity:

ISOC proposes to limit the scope of security ITRs to transnational issues

United States Proposals

The United States submissions, produced with wide consultation with the Internet community, are consistent with ISOC's. They propose minimal changes to the ITRs, largely to clarify the distinction between the telecom network and the Internet and to preserve the sovereign right of nations to develop their own policies according to the following rationale:

> [The United States] believes that the existing multi-stakeholder institutions, incorporating industry and civil society, have functioned effectively and will continue to ensure the continued vibrancy of the Internet and its positive impact on individuals and society. Furthermore, recalling that Member States agreed in Plenipotentiary Resolution 130 (Guadalajara, 2010) that "legal or policy principles related to national defense, national security, content and cybercrime . . . are within [Member States'] sovereign rights," the United States will oppose any provisions that interfere with those rights. The United States invites other administrations to engage in dialogue consistent with these principles, which are vital to the continuing development of international telecommunications."[21]

The United States offers the following specific proposals:

1. Minimal changes to the preamble of the ITRs;
2. Alignment of the definitions in the ITRs with those in the ITU Constitution and Convention, including no change to the definitions of telecommunications and international telecommunications service;
3. Maintaining the voluntary nature of compliance with ITU-T Recommendations;
4. Continuing to apply the ITRs only to recognized operating agencies (ROAs) and not expanding their scope to commercial networks that are not involved in "the provision of authorized or licensed international telecommunications services to the public;" and
5. Revisions of Article 6 to affirm the role played by market competition and commercially negotiated agreements for exchanging international telecommunication traffic.[22]

The United States and ISOC proposals represent an accurate picture of the Internet community's consensus on the content of the ITRs and the relationship of ITU with the Internet. ISOC, by definition, speaks for the Internet community as a whole, and the United States offers proposals consistent with ISOC's.

CONCLUSION

The proper role of ITU with respect to the Internet is that of a stakeholder among the many stakeholders who currently govern the Internet through a consensus process. Developing countries complain that the Internet standards and procedures devised by

IETF and ICANN are controlled by those who can afford to attend their meetings. This criticism is completely valid, despite the efforts IETF has made to support remote participation. Those who are in the room when standards are debated have more influence than those who aren't, and it can be expensive to attend meetings three times a year in far-flung locations. It's even more expensive to dedicate the time necessary to understand the issues examined by IETF, and more critical. Nations such as China, India, and Russia certainly have enough resources to be actively involved in IETF, which China demonstrates each time it sends a large delegation of the employees of its state-controlled enterprises to each IETF meeting. A fraction of interest generated by China's sizeable trade surpluses provides sufficient means to affect the IETF process substantially.

Proposals made by China, India, Russia, the Arab States and others also display a failure to understand present day Internet dynamics, willful or otherwise. The history of ITU-T with respect to MPLS displays a willingness to rashly endorse internally inconsistent and technically deficient standards at the insistence of powerful members; it also exhibits a tolerance for multiple, contradictory standards antithetical to the spirit of Internet technical standards. An old engineer's joke sarcastically declares "the great thing about standards is that there are so many to choose from." The sarcasm is apparently lost on ITU-T since they've adopted standards proliferation as an operating principle.

This unfortunate situation can be remedied if ITU members would begin to participate in IETF. Developing countries pooling resources to fund a delegation of participants would gain the influence of the "people in the room" and increase their awareness of Internet issues in the bargain. If this experience shows that improvements are needed in the IETF process, as they surely are, the ITU delegation would be in a position to promote them as a stakeholder with a history of commitment.

Chinese participation in IETF is already quite intense, with large coteries from Huawei and the government-owned telecommunications firms present at every meeting, sometimes in leadership positions. IETF is open to participation by anyone, and its proceedings are accessible over the Internet as they take place to encourage participation by those with limited travel budgets. Less-developed countries should follow the lead of the United States and China in this regard.

The concerns of less-developed countries for help with developing national infrastructure are quite distinct from the issues that China brings to the table. It certainly is the case that many LDCs suffer from undeveloped infrastructure and need help with network build-out and modernization. Rather than taxing international traffic to support infrastructure development, LDCs should examine the examples set by model LDCs such a Kenya who have developed a thriving ICT sector by wise investment and innovation-friendly policies:

> There's a vitality about Kenyan start-ups, grappling with the life-and-death problems of the developing world, that gives them an edge somehow lacking in Western apps designed to, say, find a parking space, or play a game, or shop or wake up on time.

> More start-ups are brewing in iHub, a meeting place on Ngong Road where developers and designers brainstorm.

IHub manager Tosh Juma, 26, a hip young Kenyan, isn't the kind of person you would expect to hear praising anyone in government.

"The Ministry [of Information and Communications Technology] is supportive and they recognize what we do," he said.

Kenyans go to the polls next year and, given the influential enemies he has made, there's no guarantee that an incoming government will reappoint [ICT Minister Bitange Ndemo.] But he says that even if he's not in government, he has plenty to do, like spreading the IT revolution across Africa.

"People see the benefits of liberalization," he said. "Other countries will see what we have done and will want to do it the Kenyan way."[23]

The "Kenyan Way" includes investment, subsidized Internet access to universities, and a commitment to transparency on the part of the government:

> In 2006, a year after he became the director of the information ministry, Ndemo tired of the endless delays as 23 African countries bickered over plans for a joint fiber-optic cable for high-speed Internet. Instead, he linked up with one from the United Arab Emirates.
>
> When the cable was switched on in 2009, Ndemo made sure universities got unlimited Internet capacity. He pressed the government to put money into IT research and start-up incubators. He persuaded the president to make all unclassified Kenyan government data open source—available to anyone online—a move nothing short of revolutionary on a continent where reflexive secrecy is the rule.[24]

International support for development of "Kenyan Way" measures in other LDCs can take the form of a globally-administered fund, perhaps managed by the World Bank.

International support for development of Kenyan measures in other LDCs can take the form of a globally-administered fund, perhaps managed by the World Bank (which would have to first demonstrate that as an institution it understands the power of the Internet and ICT more broadly to power development) to build the kinds of facilities Kenya has built on its own, such as Internet Exchange Points and startup incubators, although these facilities are not very expensive in any case. It should become commonplace for all countries, developed or not, to cover their territory with facilities where Internet and mobile packets can be exchanged at low cost and from which content can be distributed.

When such facilities are created, often by independent firms who don't operate networks in their own right, one of the essential components of ICT development is put in place, prices for interconnection and transit are reduced, and a local ICT sector begins to flourish. Self-sufficiency is a better path to economic growth than is the condition of permanent dependence that some nations urge on their LDC partners.

The ITRs should remain strictly limited to their legitimate subject matter, and problems that lie outside their scope should be addressed by other means. In summary if the ITU truly wants to make a positive difference it should focus less on regulation and more on facilitation.

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ABOUT ITIF

The Information Technology and Innovation Foundation (ITIF) is a Washington, D.C.-based think tank at the cutting edge of designing innovation strategies and technology policies to create economic opportunities and improve quality of life in the United States and around the world. Founded in 2006, ITIF is a 501(c)3 nonprofit, non-partisan organization that documents the beneficial role technology plays in our lives and provides pragmatic ideas for improving technology-driven productivity, boosting competitiveness, and meeting today's global challenges through innovation.

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