BACKGROUND PAPER

Digital Dividends

Multistakeholder Internet Governance?

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Abstract

Global debate over alternative approaches to governing the Internet has been wide ranging, but increasingly has pivoted around the wisdom of "multistakeholder governance." This paper takes controversy around a multistakeholder versus an alternative multilateral approach as a focus for clarifying the changing context and significance of Internet governance. A critical perspective on this debate challenges some of the conventional wisdom marshaled around positions on the history and future of Internet governance. By providing an understanding of the dynamics of Internet governance, this paper seeks to illuminate and engage with issues that are of rising importance to the vitality of a global infrastructure that is becoming more central to economic and social development around the world. Based on the perspective developed in this paper, a multistakeholder process appears best suited for helping a widening array of actors, including multilateral organizations, to connect a worldwide ecology of choices that are governing the Internet.

Introduction

The centrality of the Internet to national, regional, and global social and economic development has become widely recognized (DTI 1998; UNESCO 2015). Beginning with the first phase in Geneva in 2003 of the World Summit on the Information Society (WSIS), the subsequent establishment by the United Nations of the Working Group on Internet Governance (WGIG), and the most recent WSIS meetings, such as in Geneva in 2015, there has been broad agreement on the significance of the Internet. The Internet has become a valuable, if not an essential tool that can be used by individuals, communities, businesses and industry, including small and micro-businesses, Internet firms, and governments to further social and economic transformation and development, and to enhance their relative "communicative power" in local and global arenas (Dutton 2004a). Innovations around the Internet and related information and communication technologies (ICTs), such as social media and the mobile Internet, are empowering individuals and institutions by literally putting knowledge, and economic and technological communication resources at the fingertips of users, wherever they live, work or play. For such reasons, there is also a wide-ranging consensus on the need to support access to the Internet, the availability of open information resources, such as for education and learning, the protection of personal privacy, freedom from surveillance, and rights to expression in an increasingly digital world (UNESCO 2015).

However, just as the Internet and related ICTs have become woven into the fabric of everyday life and work for billions of people across the globe, it is also being taken for granted as an infrastructure that will continue to progress and support local and global objectives, such as those identified by the UN Millennium Development Goals (MDGs).[2] This belief in the inevitable progress of the Internet creates a serious risk, as the vitality of the Internet could be undermined by failure to govern this technology in ways that reinforce and enhance its reach, and perpetuate the innovations that have enabled it to be ever more valuable to individuals and institutions alike. It should be a worldwide

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[2] See www.un.org/millenniumgoals for details of the MDGs [Last accessed May 13, 2015].

concern that agreement on approaches to Internet governance seems to be dissolving just as the significance of the Internet is increasing year by year.

Throughout the history of the Internet, debates over Internet governance have been marginal issues, if not viewed by most of the Internet community as distractions from the real business of technological innovation, adoption, and use in an expanding range of areas (Leiner et al 2003). This was a period during which many governments and regulators stepped back to permit this innovative technology to succeed or fail. It was viewed as a promising innovation, but not an essential service. Since the early years of the twenty-first century, the Internet's significance has been recognized, but along with this recognition has come an accelerating expansion of national, regional, and global initiatives aimed at better controlling the Internet, whether to ensure access to its evolving infrastructure or to block access to undesirable content (MacLean 2004). While well intentioned from the perspective of those initiating these efforts, shifts in policy and regulation could change the social and technological dynamics of the Internet in unanticipated and undesirable ways. For better or worse, while technological innovation has been the central narrative about the Internet's development over the last decade, the narrative of the next decade is more likely to focus on governance, policy and regulation. Will worldwide choices about these issues maintain and enhance, or undermine the vitality of the global Internet? That is the central question for study and governance of the Internet in the coming years.

Developing initiatives have raised a host of policy and governance issues, ranging from technical standards of the core Internet infrastructure to ethical concerns over the use of social media (UNESCO 2015). Arguably, however, one of the most pivotal issues concerns the overall governance structures and regulatory models that will shape decisions across the full range of opportunities and problems confronting policy and regulation across the world. One central issue is whether governance of the Internet should follow a multistakeholder approach to governance, which has been championed over the years, or move towards a more multilateral approach, in which governments play more central roles. A shift in this direction could have major implications and therefore merits careful consideration.

To address this concern, the following sections seek first to clarify the concept of Internet governance, examine alternative approaches to its governance, and consider the potential risks to its governance and vitality moving forward. Facing the realities of the Internet can clarify key controversies and help outline productive ways to move forward on making multistakeholder governance work. An early section on the idea of Internet governance seeks to provide some basic underpinnings for the discussion, but it is useful to preface this by outlining the context that is shaping debate over Internet governance. The diffusion and vitality of the Internet have been accompanied by concerns that have fueled debate over how to shape global governance of the Internet. These concerns, driving a rise of policy and regulation, are the focus of the next section.

The Changing Context of Internet Governance

All discussions about Internet governance need to be anchored in the track record of the Internet. It is arguably one of the most remarkable innovations of our time, and has enhanced the vitality of social and economic development around the world. But its development has raised issues over its societal implications that entail side effects and unanticipated consequences that raise serious concerns as well as create huge opportunities. Behind these concerns lies the development of what has been called the "New Internet World" (Dutta et al. 2011). The next section describes the rise of this New Internet World to provide a background for turning to focus on critical issues that accompany this phenomenal growth.

The New Internet World

The Internet has been an astoundingly successful innovation. This has been said so often that it might be easy to take for granted, but a quick look at the dynamics of this growth speaks volumes. First, the Internet has continued to expand to an increasingly large proportion of the world's population. At the turn of this century, less than 10 percent of the world was online, but by 2014, a steadily increasing diffusion enabled the Internet to reach up to 3 billion users, almost half of the world (Figure 1). From another perspective, the

Internet has taken decades to develop since its early foundations in computing and telecommunications in the 1960s. But it was not until recently that key innovations, such as the Web, browsers, and mobile Internet have enabled its use by non-technically sophisticated users.

Figure 1. Worldwide Growth in Numbers and Percentage of Internet Users, 2000–14

Source: ITU – http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx. March 2015.
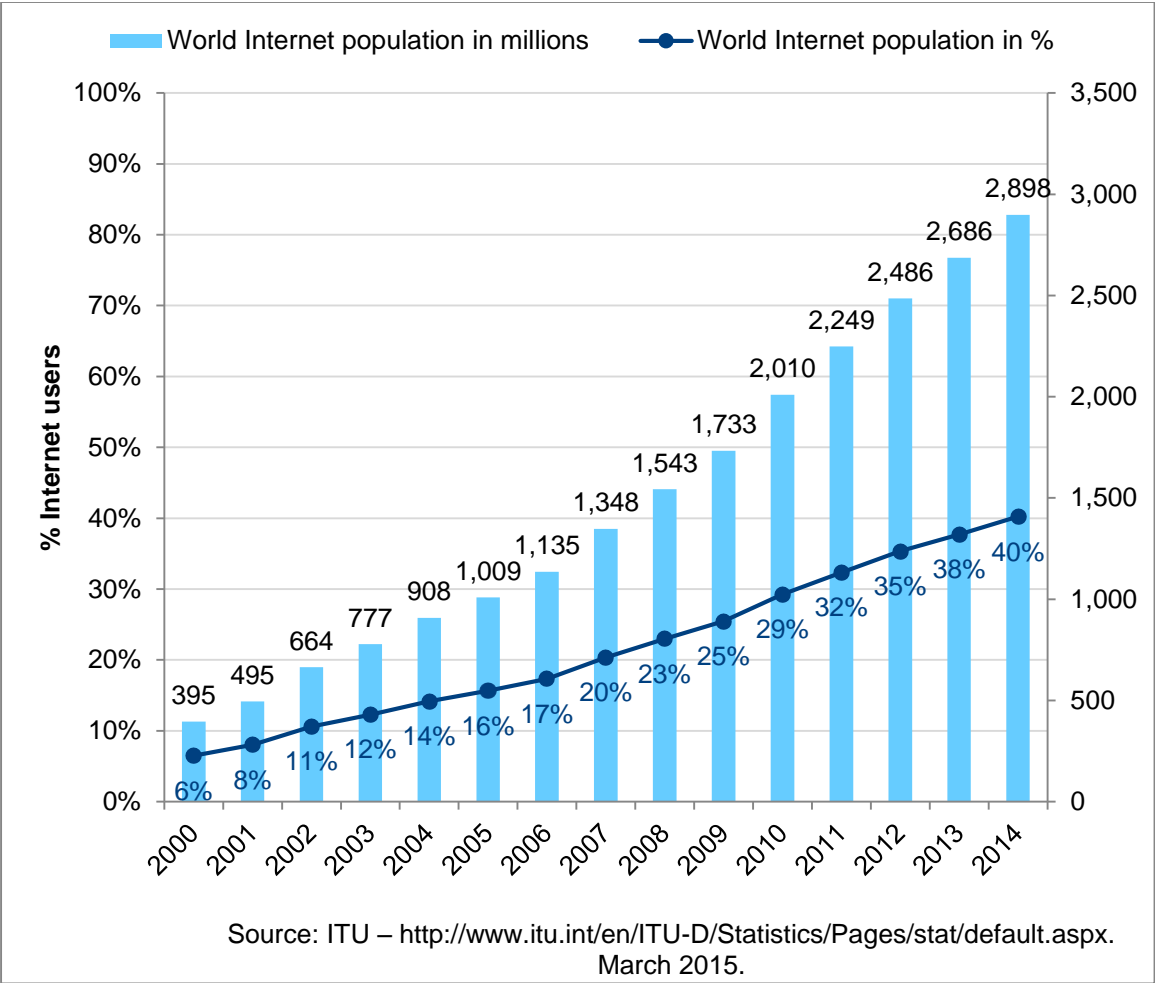
It is important to look more deeply than at the figures for the world-as-a-whole in order to see that this steady increase has led the Internet to move far beyond the early online nations of North America and Western Europe – the "Old Internet World" – to span every region of the world (Shaw 2005; Dutta et al. 2011). The more recent nations to come online, such as China and other nations of Asia, have not just become part of the Internet

world: they have actually surpassed the Old Internet World in their number of users. That is, the "throw-weight" of the global Internet has shifted such that Asia is the dominant population online (Figure 2). For example, there are more Internet users in China, than there are Americans on the planet. In short, the Internet is no longer a North American and European technology. It is increasingly global.

Figure 2. Growth in Numbers of Internet Users by Regions of the World, 2000–14

Source: ITU – http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx. March 2015.
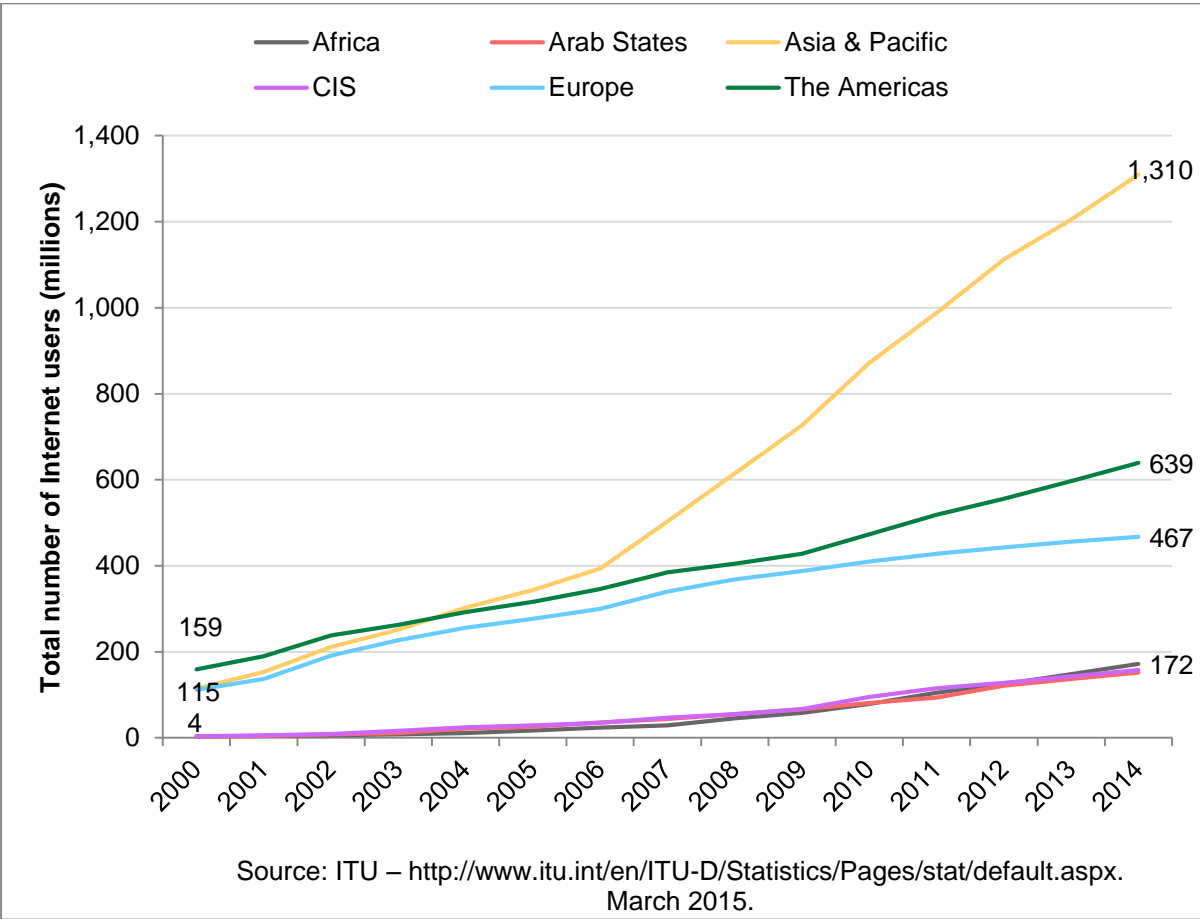
The place of the New Internet World, defined largely by Asia and the Global South, is reinforced by looking at the percentage of Internet users by each region. Forty-five percent of the global Internet population is in Asia and the Pacific (Figure 3). Moreover, the rising proportion of users in the Americas is largely driven by the increase of users in Latin America, not in the United States and Canada (Dutton et al. 2014).

*Figure 3. Percentage of Worldwide Internet Population by Region, 2000–14*
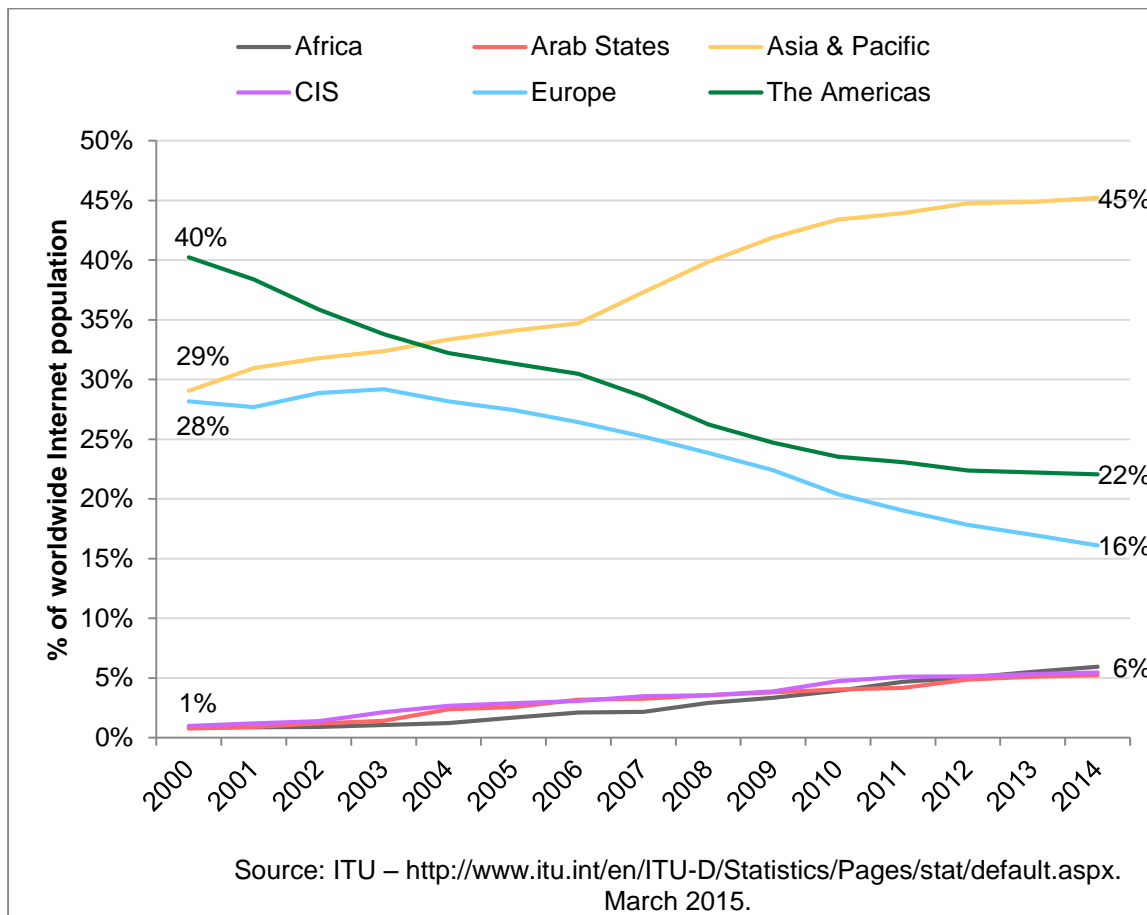
Of course, the Internet is far from evenly distributed by region. Europe has the highest level of Internet adoption: around 75 percent (Figure 4). But Africa, the region with the lowest percentage of users is already at 19 percent, which is higher than the global penetration rate in 2000, and an area where mobile Internet is "surging" (Pew 2015). For example, in sub-Saharan Africa, cell phones are as common in South Africa and Nigeria, as in the United States (Pew 2015). While mobile Internet smartphones are much less prominent in Africa, they are also diffusing more widely, reaching about one-third of South Africans, although only 5 percent of Uganda's population (Pew 2015). Moreover, the rise in mobile Internet smartphones has been far more rapid since 2010 than either the use of mobiles or of personal computers, suggesting the potential for continuing increases in penetration across the world (Economist 2015). But access moves beyond devices to information, since the Internet puts users in reach of a global network of information

resources. As Google's Eric Schmidt put it: every two years, "we create as much information as we did up to 2003."[3]

Figure 4. Percentage of Internet Users within Regions, 2000–14.

Source: ITU – http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx. March 2015.
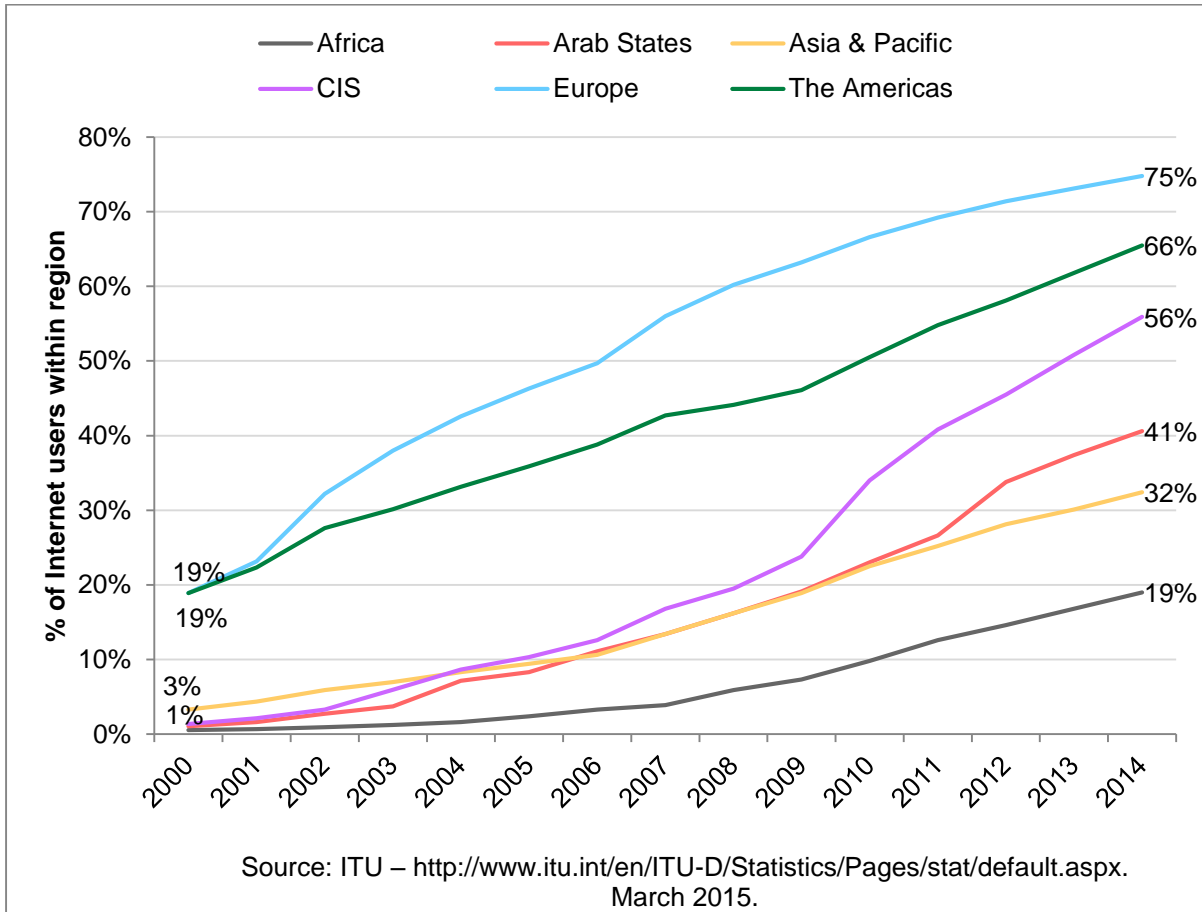
Beyond the rising number of individuals online, the number of websites – one crude measure of the information being generated online – has grown year by year, and has risen more dramatically since 2010 (Figure 5). These numbers have fallen somewhat since 2012, but that is most likely to reflect the move toward mobile applications (apps), creating less of a reliance on the Web as a primary location of information, as apps do not depend on Web browsers and websites, but also provide new sources of information resources on the Internet.

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[3] http://techcrunch.com/2010/08/04/schmidt-data/ [Last accessed May 7, 2015].

Figure 5. Number of Websites by World Internet Population, 2000–14

Source: ITU – http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx;
Netcraft – http://news.netcraft.com/. March 2015.
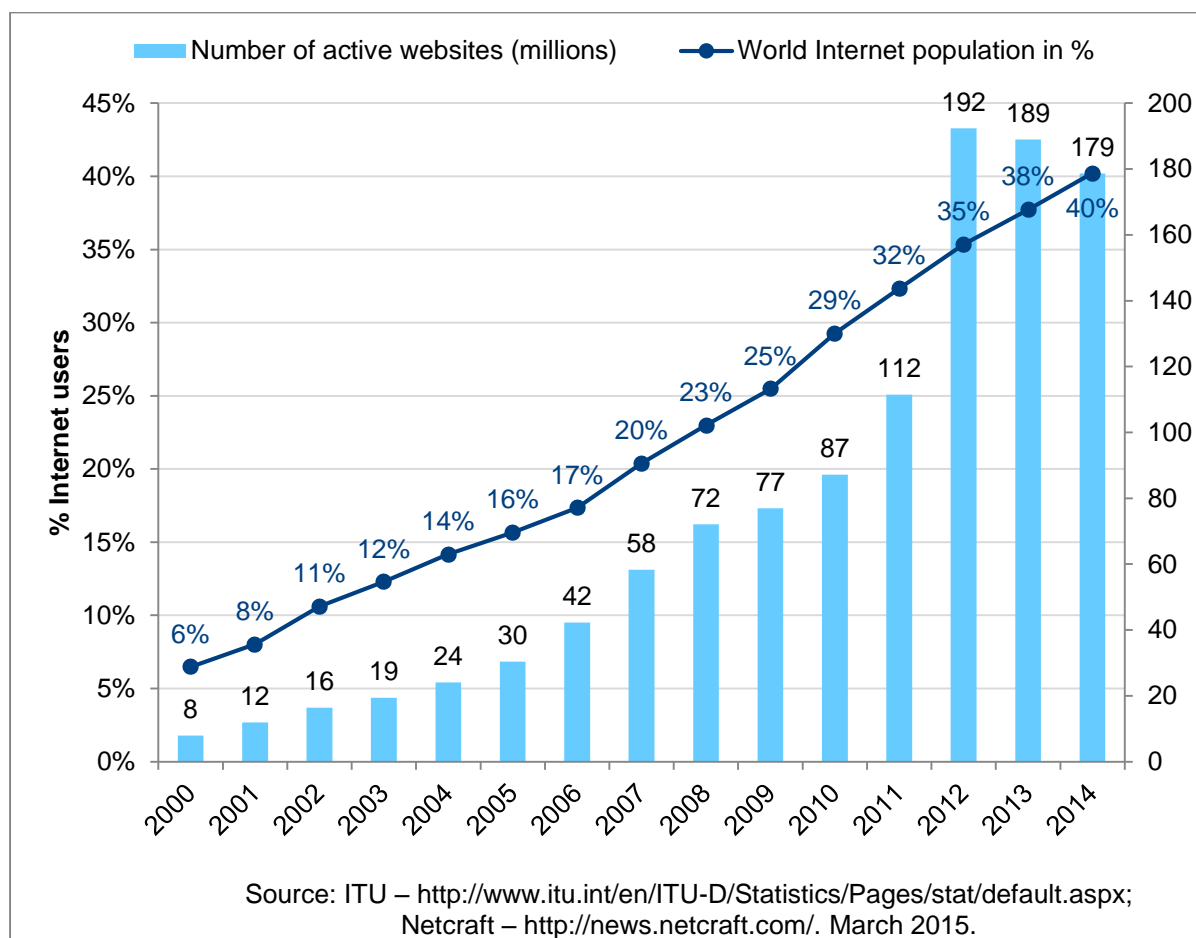
Significance of the Internet

Given the diffusion of the Internet to the developing areas of the world, these nations – which have been grouped among the countries of the "New Internet World" – are likely to be the greatest beneficiaries during the coming decade, but will also be at the greatest risk of any problem confronting its continuing spread and uptake (Dutta et al. 2011; Dutton et al. 2014). Moreover, developing nations of East Asia and the Global South are using the Internet, social media and the mobile Internet in relatively more creative ways, when compared to the early nations to adopt the Internet (Dutta et al. 2011; Dutton et al. 2014), and might well have the most to gain by an open, global and secure Internet, and commensurately, also the most to lose if innovations and the reach of the Internet falters. For example, the use of e-commerce in China is orders of magnitude greater than in the

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United States, suggesting that it has become central to the vitality of China's domestic economy (Bolsover et al. 2014).

However, the significance of the Internet also emerges from talking to users: asking people how important the Internet is to their information and entertainment needs, for example. These questions have been posed in survey research of national representative samples of individuals in Britain from 2003 through 2013, and show that throughout this period, the Internet has come to be viewed as increasingly important. By 2013, the Internet was perceived to be "essential" for information by just over 40 percent of Internet users, and viewed as "essential" for entertainment by one-fifth (20%) of users (Dutton and Blank 2013: 44–45).

These multiple indicators across a variety of individuals and nations underscore the growing significance of the Internet over a surprisingly short period of time. While the technologies of the Internet have developed over decades, the public Internet is relatively young, with the Internet commercialized only in 1995 with the launch of the Netscape browser. Google only began as a research project in 1998, and China's Baidu was launched only in 2000. Facebook came in 2004. YouTube arrived in 2005, Twitter in 2006, Internet IP TV in 2012, and so on.[4] The Internet is still young. Nevertheless, while viewed as an innovative experiment in 2001, after the dotcom bubble, the Internet has risen to become one of the more critical infrastructures of the digital age in just over a decade. Politicians and regulators around the world are well aware of its rising significance and are increasingly reluctant to let this develop outside the scope of their regulatory authority.

Digital Divides

Despite this phenomenal growth, the glass remains half empty for many. There are 4.2 billion people with no Internet access; 3.6 billion who are not mobile; 5.1 billion who are not on social media.[5]

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[4] For a recent timeline of key developments, see the frontispiece of Graham and Dutton (2014). <Reference entry is needed>

[5] https://twitter.com/ValaAfshar/status/567460733538299905/photo/1 [Last accessed May 13, 2015].

Over half of the world does not have access to the Internet, and therefore, the rise of the Internet has not been of equal significance everywhere. Within many of the more developed nations, households and small businesses in rural and distressed areas of inner cities have been less likely to have access to the Internet, as have older and less educated individuals. Cross-nationally, in the less developed nations, most individuals have yet to gain access to the Internet. As a consequence, the Internet has benefitted some of the early nations online more than others during these first decades of its growth. Clearly, as the Internet has diffused and become more significant to society and the economy, the divides – in access to devices, skills, ability to produce as well as consume information – within and across nations have become more serious issues. In 2000, when the Internet was perceived by many as a simply a fad, it was difficult to raise issues over emerging divides. By 2015, it has become very clear that the Internet is a global infrastructure of importance, which makes the existence of digital divides a more critical social and economic issue (UNESCO 2015).

Trust Bubbles

Even before the revelations of Edward Snowden, which gave credibility to concerns over mass unwarranted surveillance by the US and other governments, there was evidence of a growing "trust bubble" across the world (Dutton et al. 2014). Users in countries in all regions were concerned that they should be careful about what they say online, as more and more perceived that their behavior online would be monitored. Much use of the Internet, such as reliance on a search engine, depends on a learned level of trust in the technology (Dutton and Shepherd 2006). A significant decline in trust could undermine the vitality of the Internet, and it has already led politicians and regulators around the world to be more skeptical of the Internet and the US role on the Internet, particularly in the aftermath of the Snowden revelations.

The resulting privacy and surveillance concerns might well have been a blip in the general public's consciousness, but among the policy and technical communities worldwide, it is hard to overestimate the impact of what many perceived to be telling evidence of worldwide suspicions that the United States and other nations were invading the privacy

of individuals around the world. In many cases, that has not only fostered moves to better protect privacy and personal data by many governments, including the US, but also to be more skeptical of the claims of the US and other governments regarding their information practices in the digital age. Nevertheless, increasing evidence points toward more nations developing similar capabilities for mass surveillance of Internet use in response to concerns over terrorism and security. In this context, there is a genuine risk of any trust bubble growing if not bursting in the coming years.

Moral Panics

The Internet, particularly with the rise of social media, has given rise to a series of moral panics over its societal implications. Television has virtually disappeared from the concerns of parents and teachers, replaced by the Internet and social media as developments that are claimed to be lowering attention spans, changing brains (and for the worse), and undermining physical exercise (Krotoski 2014). New forms of old problems are arising online, such as romance scams, online bullying, consumer fraud, grooming of children by predators, the recruiting of vulnerable individuals by terrorists, the stalking of individuals, and more. These are viewed as moral panics because these concerns are more likely to be disproportionate to the actual problems they address. Nevertheless, they are problems that are viewed as very serious by the public, which is asking for politicians and regulators to "do something."

Left Out: Not Having a Seat at the Table

As the Internet has become a more global infrastructure, many nations have developed a sense of not being around the table where decisions are being made about the ways in which it will be used and governed. Case studies of Internet governance in Latin America underline the degree that these nations feel "left out" (Aguerre and Galperin 2015).

This has long been a problem confronting the governance of the Internet as nations questioned the accountability of the Internet Corporation for the Assignment of Names and Numbers (ICANN) to the US Department of Commerce, as discussed below. However, with developments such as the Snowden affair, concerns over control of the

Internet seem to be reaching a new pitch, and creating a momentum behind challenging and rethinking existing approaches to Internet governance that are perceived to be controlled by "others."

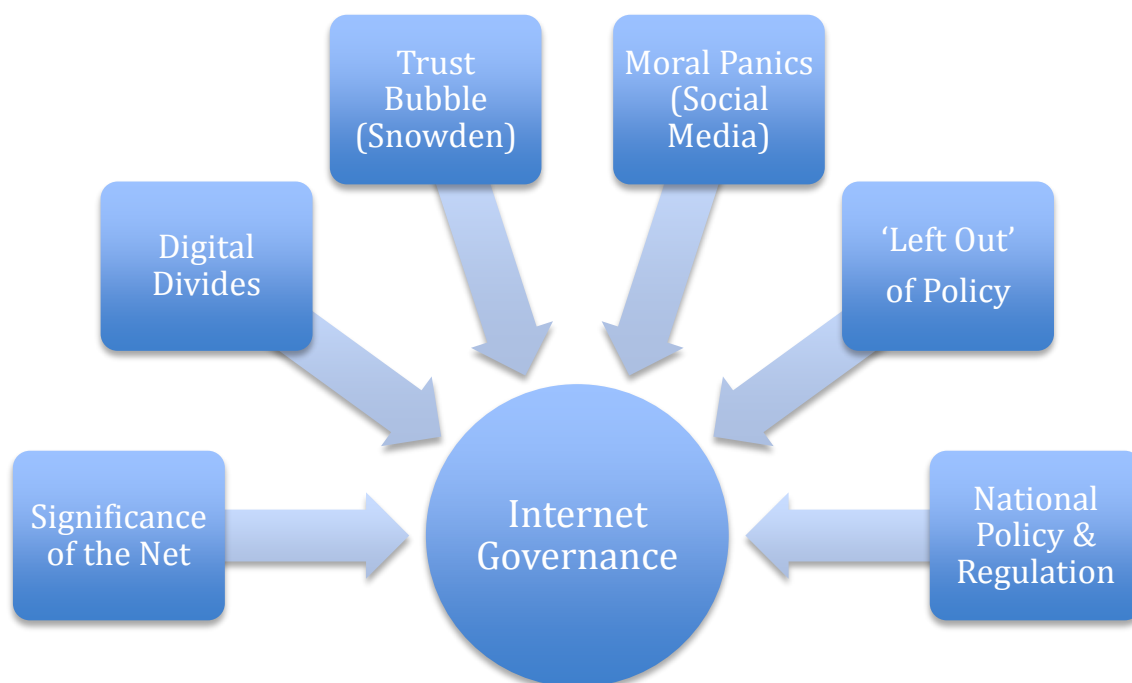*Rise of National Internet Policy and Regulation*

Finally, with the rising significance of the Internet for information and entertainment, many nations have moved from positions that were focused on not regulating the Internet in order to support its development, to increasingly gearing up to mitigate negative side effects of what has become a critical information resource. The attempts by many nations to create new laws and regulations to protect the music and film industries from illegal file-sharing are one case in point, including the Digital Economy Act in Britain, and the Stop Online Privacy Act and Protect IP Act (PIPA) in the United States. With the rise of new approaches to the delivery of content, such as what has been called over-the-top video distribution over the Internet, there have been moves to regulate the telecommunication firms that control the infrastructures reaching into households, in order to protect the neutrality of these networks, and prevent these companies or other providers from creating fast lanes that favor particular forms of content. A small number of nations, such as Netherlands, have moved forward on rules to support an open Internet, including the US Federal Communications Commission (FCC), voted in favor of "network neutrality" rules in 2015, and other nations are likely to follow suit.

As nations move from non-regulation to active regulation of the Internet and related ICTs, there will be an increasing need to reconcile and harmonize the regulations of a global infrastructure. This has given new impetus to the significance of global governance mechanisms and to the potential role of key institutions from the telecommunications era, prior to liberalization, such as the International Telecommunications Union (ITU).

All of these driving forces are converging to foster greater interest and focus on Internet governance (Figure 6). They are creating a context in which it is impossible to ignore the problems that have beset efforts to advance discussion of Internet governance, and placed a new priority on establishing effective mechanisms to allay concerns and address these issues of the Internet's growing significance, persistent digital divides, a worsening

trust bubble, moral panics that exacerbate feelings of being left out of the discussion, and a need to develop national as well as global governance structures and processes.

Figure 6. The Context Shaping Debate on Internet Governance

Trust Bubble (Snowden)

Moral Panics (Social Media)

Digital Divides

'Left Out' of Policy

Significance of the Net

Internet Governance

National Policy & Regulation

Internet Governance

Given these multiple forces driving a rising concern over governing the Internet, there are divisions over how to make progress that will address the key issues. What is certain are the complexities surrounding governance of a globally distributed technology. This section seeks to explain some of the problems with the concept of Internet governance that require a flexible and scalable approach, such as is captured by calls for multistakeholder governance, rather a one-size-fits-all solution.

The Concept of Internet Governance

Most discussion of Internet governance is normative: Who should govern the Internet? An argument is often advanced that no single nation or actor should control the Internet,

whether the US government, or Silicon Valley firms, for example. These normative concerns have fostered much support for the concept of internationalizing governance and ensuring a pluralistic, if not democratic approach that enables interested parties or stakeholders to participate in governance.

The descriptive question is: Who governs the Internet? Little research has focused on actually describing control over the Internet, although many papers and reports have described the structures created to control and administer it. However, structural diagrams and lists of organizations and committees are often far from the actual structures of power and influence, and this is likely to be equally true for the Internet governance area.

The concept of Internet Governance fosters a perception that some entity – a set of individuals, an organization or agency – actually governs or even "rules" the Internet (Mueller 2002). In reality, the Internet is not a single technical system that can be governed in a rational–comprehensive way. It would be better described as a dynamic "ecosystem" or rapidly changing ecology of technical artifacts, people, including users, and techniques that comprise what we view broadly as the Internet and related ICTs, such as the mobile Internet and social media (Brotman 2015). It is more empirically sound and useful to view Internet governance, not as an object of control, but as the outcome of an ecology of choices made by many actors across a wide variety of arenas, from households to business, from technical standards committees to governmental jurisdictions around the world.

This is not to argue some form of Internet exceptionalism. To the contrary, contemporary perspectives on governance processes have characterized them generally as "hybrid and multijurisdictional with plural stakeholders who come together in networks" (Bevir, 2011: 2). This is a fundamental recognition in discussing approaches to governance generally and Internet governance specifically. Put simply, in line with this perspective, it is useful to view Internet governance as the outcome of an ecology of choices.

Governance as a Shaper and Outcome versus a Determinant of an Ecology of Choices

The idea of an ecology of choices provides a simple way of discussing a framework that can help people understand the ways in which governance can be viewed as an outcome of a complex process rather than as a set of decisions determined or ruled by an identifiable set of decision-makers. It is built on the concept of an "ecology of games" (Long 1958), which has been used to discuss the governance of communities as well as telecommunications and large technical systems (Dutton and Mackinen 1987; Dutton 1992; Dutton et al. 2012).

To paraphrase the argument by Norton Long, who focused on the governance of local communities: no one wakes up in the morning to govern a city or community. Instead, people in a community focus on more specific and meaningful goals. A politician might focus on getting elected to a local council. A real estate developer might be more focused on identifying promising land to purchase, and so on. As individuals pursue specific goals and objectives, often in competition or cooperation with others, in a specific arena, governed by different sets of rules, they stand to win or lose prizes for attaining their goals. They are each playing in one or more games within a larger ecology of interacting games.[6]

The ecology of games provides a simple way of conceptualizing the complex array of choices that shape (govern) the evolution of a community, which becomes an outcome of an "ecology of games." A "game" – like running for office or developing property – is defined by an arena of competition and cooperation structured by a set of rules and assumptions about how to act to achieve a particular set of objectives (Dutton 2004a). Likewise, Internet governance can then be seen as the outcome of a variety of choices made by many different players involved in separate but interdependent governance games, many of which will be discussed below. No single set of actors actually seeks to control governance or govern the Internet as such, but each player pursues more focused

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[6] This by no means seeks to trivialize the importance of their decisions, as the term "game" is used here to connote the importance of competition, objectives, rules and rewards, in ways analogous to a sporting or entertainment game, but not to suggest real life is no more important than a board game.

goals in collaboration or competition with other actors, such as combatting spam or trying to develop a market for registering names and numbers.

Once understood, this idea might seem commonsensical, but it varies significantly from conventional conceptions of a body or group governing the Internet. Therefore, it is useful to move to an overview of various discussions of Internet governance that appear to assume a more rational-comprehensive approach than that characterized by an ecology of games, or choices by multiple actors. The two most general conceptions vary by whether they define Internet governance narrowly or broadly.

The Narrow Definition

A narrowly defined perspective revolves around the governance of specific, critical Internet resources. The origins of the debate over the governance of Internet resources largely revolved around the US role in relation to the Internet Corporation for Assigned Names and Numbers (ICANN), established in 1998 as a nonprofit private corporation in California, United States.[7] Prior to the establishment of ICANN, these functions were performed by the Internet Assigned Numbers Authority (IANA), which was substantially administered by technical experts, particularly Jon Postel and his colleagues at the Information Sciences Institute at the Marina del Rey facilities of the University of Southern California, under a contract with the US Department of Defense.

Given this contractual arrangement, the US Government was technically the central policy authority for the root zone file. The highest-level "A-Root" server is the ultimate point of control on the Net; so who exercises most influence over it, and under what terms, could indeed matter in the real world and in cyberspace. However, this USC computer expert and Internet pioneer, Jon Postel, assumed a great deal of autonomy and was personally largely responsible for adding new top-level domain names. He gained such a strong reputation for his technical knowhow and his handling of these decisions that he was

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[7] One of the best studies of the politics of Internet critical resources is Milton Mueller's *Ruling the Root* (2002).

highly trusted among the early technical community involved with the ARPANET (which was the Internet of that time) to exercise discretion in making day-to-day decisions.

Therefore, in these early years, root-server administration was performed by Jon Postel. He effectively controlled decisions, albeit in relatively circumscribed but important areas, such as in allocating names and data that would link domain names to particular servers. More than would ever be the case again, Jon Postel governed a circumscribed sphere of decisions about the Internet.

However, with the growth of nodes on the Internet and in the aftermath of decisions made by Jon Postel, which raised questions about his accountability, individuals within the US government worried about the growing scale of decision-making and the potential for poor decisions to be made without sufficient consultation. This concern led to the restructuring of this function by establishing ICANN, and making IANA a department of ICANN to coordinate the Domain Name System (DNS) Root, IP addresses,[8] and related Internet protocol issues, while still working with the Internet Engineering Task Force (IETF) and others as before this shift in administrative governance structures. For example, IANA delegates blocks of IP addresses to Regional Internet Registries (RIRs) in each area of the world.

While established as a California-based nonprofit corporation, ICANN remained under contract with the US government, although accountability shifted to the US Department of Commerce. This arrangement continued to generate international concerns over US control over the Internet. Many saw the creation of ICANN as an opportunity to "internationalize" control over the A-Root and enable greater public "voice" in its governance, and were disappointed that this happened in such a limited way. Other nations, such as Brazil, India, China and some European countries, became increasingly concerned about this. Despite such concerns being raised, on June 30, 2005, the US

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[8] IP is the Internet protocol used to address and forward individual packets of data within the Internet. TCP (Transmission Control Protocol) helps to control the flow of packets between computers on the Internet in what is known as a TCP/IP network.

government announced that it intended to maintain its role in authorizing changes or modifications to the root zone file.

Such jurisdictional issues were a factor in leading the United Nations (UN) to urge a loosening of US control of critical Internet resources, such as the DNS Root, the root name-servers that drive the global DNS. To discuss the potential for the United States to relinquish this level of control, the UN established the Internet Governance Forum (IGF), providing a means to foster international multistakeholder discussion about ways to move beyond this impasse and shape future policy that should govern such Internet resources. Through a series of stages of review by the US Department of Commerce and the ICANN community, the 2014 Global Multistakeholder Meeting of the Future of Internet Governance (GMMFIG), and the Netmundial Initiative that followed, a proposed plan emerged for international governance of the Internet, moving ICANN from under the US Department of Commerce to multistakeholder management, such as through the Internet Governance Forum.[9]

This plan has found substantial support, such as by the Panel on Global Internet Cooperation and Governance Mechanisms, but was not supported by some governments, including Russia, China, India, and Iran, who were more supportive of the United States relinquishing control to a more hierarchical, multilateral organization, such as the ITU. This has led to a debate between multistakeholder versus multilateral approaches to Internet governance, which is discussed in a later section of this paper.[10] While the outcomes of this transnational jurisdictional turf struggle are still unfolding, such as in the development of an IANA transition plan, it has had symbolic and substantive real-world impacts on the ability to move ahead on a multistakeholder approach to Internet governance.

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[9] http://www.bloomberg.com/bw/articles/2014-04-30/at-netmundial-the-u-dot-s-dot-kept-its-companies-on-the-global-stage [Last accessed on May 13, 2015].

[10] The need for more hierarchical approaches to Internet governance has been argued over the decade, such as an early criticism of developing myths around Internet governance by Richard Collins (2004).<A reference entry needed for Collins>

A Broader Definition of Internet Governance

This early focus on critical Internet resources, such as the DNS Root, led to discussions and actions that would quickly open up Internet governance to broader definitions. In 2002, the UN General Assembly established the World Summit on the Information Society (WSIS).[11] At its very first meeting in Geneva in 2003, WSIS participants asked the UN Secretary General to create a Working Group of Internet Governance (WGIG). The WGIG organized a series of consultations that led to the conclusion that there was "no global multi-stakeholder forum to address Internet-related public policy issues,"[12] leading them to recommend the formation of an Internet Governance Forum (IGF).

WGIG subsequently developed a working definition of Internet governance that has been widely cited and referenced over the years, defining it as:

> the development and application by governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet. [13]

The global and multistakeholder underpinnings of this definition are reinforced throughout the WSIS agreements, such as in stating that:

> we commit ourselves to the stability and security of the Internet as a global facility and to ensuring the requisite legitimacy of its governance, based on the full participation of all stakeholders, from both developed and developing countries.[14]

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[11] http://www.itu.int/wsis/docs/background/resolutions/56_183_unga_2002.pdf [Last accessed on May 13, 2015].

[12] Report of the Working Group on Internet Governance to the President of the Preparatory Committee of the World Summit on the Information Society, Ambassador Janis Karklins, and the WSIS Secretary-General, Mr Yoshio, Utsumi. June 2005, para 40. http://www.wgig.org/docs/WGIGREPORT.pdf [Last accessed on May 13, 2015].

[13] WSIS (2005), World Summit on the Information Society, *Tunis Agenda for the Information Society*, Document WSIS-05/TUNIS/DOC/6(Rev. 1)-E, November 18: Paragraph 33. See: http://www.itu.int/wsis/docs2/tunis/off/6rev1.html [Last accessed April 4, 2015]

[14] Ibid, paragraph 31, and Kummer (2013). The addition of technical communities and academics was made by the IGF, expanding the scope of WGIG's original definition (Gasser et al. 2015). <Kummer and Gasser need ref. entries>

The broad definitions of the categories of multistakeholder involvement are also spelled out by the WGIG, and extended by the IGF (Table 1). They include states, firms and industries in the private sector, representatives of civil society, intergovernmental organizations, international organizations, members of Internet technical communities, and academics.

Table 1. Categories of Multistakeholders in Internet Governance.*

Individuals, organizations and institutions with an interest or stake in particular Internet governance issues can include:

- States, which have "policy authority" for sovereign nations have responsibility for "international Internet-related public policy issues";

- Private Sector, with particular importance in "technical and economic fields";

- Civil Society, especially at the "community level";

- Intergovernmental Organizations, particularly in "facilitating the coordination of Internet-related policy issues";

- International Organizations, with important roles in "development of Internet-related technical standards and relevant policies";

- Technical Communities, such as the members of technical standards-setting bodies, and other experts in computer science and engineering;

- Academics, with a focus on and involvement with Internet governance.

* Developed on the basis of WSIS (2005), World Summit on the Information Society, *Tunis Agenda for the Information Society*, Document WSIS-05/TUNIS/DOC/6(Rev. 1)-E, November 18: Paragraph 31, 33, 35; Kummer (2013) and Gasser et al. (2015).

The WGIG also developed four potential models for Internet governance. While the concept of multistakeholder governance advanced by the WGIG and WSIS was widely accepted, the various models had less impact or staying power over the subsequent years. One likely reason for this difficulty resides in the highly varied nature of Internet governance and governance processes generally in contemporary global arenas. One set of case studies of multistakeholder governance processes found wide variations in the very definition of "multistakeholder" governance, as well as in their basis for legitimacy,

how they are formed, and how they operated, arguing that the one unifying factor seemed to be their sensitivity to their context, including the stakeholders involved, and the nature of the issue being addressed (Gasser et al. 2015).

What was clear from the WGIG and subsequent debate around "Internet-related public policy issues" and "principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet" is that the range of Internet governance issues was far broader than critical Internet resources. This huge diversity of issues poses one of the greatest challenges to Internet governance. It is also its greatest threat. Specifically, governance could be too fragmented across different technical, application, policy, and governance specializations, breaking up a coherent picture of what is trying to be achieved in Internet governance processes (Dutton and Peltu 2007).

One way to capture this range of concerns is to consider the many issues of critical Internet resources, including questions related to the use of the Internet, and other issues tied to the policy and regulatory context of the Internet (Table 2). All these types of issues are shaping its future and need to be within the scope of Internet governance.

There are many overlaps and much interaction between these three types of issues, and many distinctions among the specific matters involved in each type. However, because actions in one area are likely to have consequences in other issue areas, there is a need to find mechanisms to consider them more holistically and to identify and resolve these interdependencies. For example, questions surrounding anonymity online can raise serious concerns within and across these three types of issues. The names and numbers given to Internet entities, such as "domain names" used in Internet addresses, may seem to be a clear Internet resource issue to be managed by ICANN. But the registration of a trade (or service) mark as a domain name with the intention of selling it back to the owner, called "cybersquatting," led to governance issues that have been the concern of international organizations—such as the World Intellectual Property Organization (WIPO)—and national and international legislation, regulations, and processes such as Uniform Dispute Resolution Policy, which also cover more traditional trademark, and related concerns (Froomkin 2002; Dutton and Peltu 2007).

Table 2. Categories of Internet Governance Issues*

Type	Key issues	Examples
I: Internet Resources	Development of core technical Internet infrastructure and Web standards and protocols. Sustains efficient, reliable Internet operations and timely adaptability to continuing and often rapid technological and other changes affecting the Internet	Standards setting for the Internet and World Wide Web; Assigning Internet addresses; Routing messages between senders and receivers; Smooth and secure Internet operations and development of core systems and services
II: Users	How use or misuse of the Internet by individuals, groups and organizations—for legal or illegal, appropriate or inappropriate behavior—is defined and policed. Deals with policies generally set by local, regional and national jurisdictions, with international aspects developed through communication and negotiation among jurisdictions	Access to the Internet; Skills and Attitudes; Unsolicited "spam" e-mail; Empowerment and expression online; Violations of users' privacy; data protection; Fraud and other cybercrimes; Malicious attacks on the stability or security of systems on the Net; Grooming of young people; Unwanted exposure to pornographic Web content; Cyber-bullying; Romance scams …
III: Policy Contexts	Policy and practice anchored in bodies and jurisdictions not concerned primarily with the Internet; Provides local and international policy contexts where developments in Internet infrastructure and use intersect with wider existing governance processes that shape more detailed governance of Internet resources	Political expression; Censorship; Copyright; intellectual property rights (IPR); Trademarks; Closing digital divides; Meeting UN MDGs; Human rights; Cultural and linguistic diversity; Transmitting content through telecommunications carriers; Net Neutrality

*Updated and adapted from Dutton and Peltu (2007).

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Internet Governance as the Outcome of an Ecology of Choices

In the early days of the Internet, over forty years ago, when there were only four nodes of the Internet, Jon Postel could coordinate names and numbers, and the Internet Engineering Task Force (IETF) could hold protocol discussions in one room. Decades later, few hotels could accommodate the many working groups attending meetings of the IETF, which had become a large international community of network designers, operators, vendors and researchers responsible for the evolution of the Internet's architecture.[15] Such scaling up of the Internet has enhanced its power, but undermined the ability of any individual or small group of people to comprehend, much less govern, obtain and implement agreements, even at a technical level.

But as Table 2 illustrates, the complexities and problems of governance go beyond issues of scale. The expansion of the Internet's use beyond the academic community to a worldwide base of 3 billion users, many of whom are content producers as well as consumers, has led to the need for wider inputs to technically oriented Internet governance bodies. ICANN recognized this relatively early on by establishing an At-Large Advisory Committee (ALAC) for the global individual Internet user community in addition to the Governmental Advisory Committee (GAC) for governments. Yet, the relationship between users-at-large, governments and technical and business communities is still a process of continued redefinition of roles, rights and duties.

Given the diverse range and huge scale of local and global issues, there is a need for different governance models and agencies to address specific governance issues (Dutton and Peltu 2007). A crucial question raised by this is how these dispersed and diverse governance processes can be coordinated, particularly as the innovative nature of Internet technology and use keeps extending and changing the assortment of critical

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[15] This example was drawn by Internet pioneer Steve Crocker, who sat around one of these tables, and was later Chair of ICANN's Security and Stability Advisory Committee and Trustee of the Internet Society (ISOC), at an OII Policy Forum held at the Oxford Internet Institute (OII) in May 2005 (Dutton and Peltu 2007).

issues of all three Internet governance types, and the dynamics of the interplay between them.

Directions for Progressing Governance

Normative and descriptive questions about Internet governance often present the Internet as a relatively definable artifact or monolithic system that is subject to rational control. In contrast, as argued in this paper, the Internet is not a monolithic system but a mosaic of separate but interrelated artifacts, techniques, and actors that are multilayered, decentralized and distributed across the globe (Dutton and Peltu 2005; DeNardis 2014: 230).

Internet governance is the outcome of many distributed decisions by multiple actors focused on specific aspects of the Internet, from those surrounding the design of technical standards to the creation of content, from the routing of traffic to the naming of a domain. To some it has been viewed as chaotic (Ang 2005). However, it is more useful to understand it as an ecology of choices that is shaping the Internet and its societal implications. This ecology of choices can be influenced by addressing each of these separate but interrelated areas that are specialized loci of decision-making by unique constellations of actors. As described in this paper, Internet governance is a work in progress that is evolving in ways that could accommodate concerns over the role of nations, international institutions, and other major stakeholders, but faces a crossroads at which the choice between a more multistakeholder versus multilateral approach could be critical.

Given the ecology of actors – a virtual "mosaic" of issues and stakeholders – involved in issues tied to Internet governance, debate has centered on approaches to coordinating what could be an unwieldy and fragmented process of decision-making and doing so in ways that match the worldwide reach of the Internet. It is this concern that led many to focus on what has been called a multistakeholder governance structure (e.g., UMIC 2011; UNESCO 2015). Yet this approach itself has been challenged by approaches that would

place more authority in governments working in more traditional ways through bilateral and multilateral treaties and institutions, like the ITU.

Once you recognize the many separate specialized areas of choice and decision-making, including the oversight and administration of domain names and addresses, last-mile access to households, standard setting, security, and more, as well as most specific issues within each of these areas, the idea of a single governance structure becomes problematic, if not untenable. No one model of governance is likely to be optimal for all of the areas, or even most. And each area is likely to require a different mix of actors, such as different providers, users, and different kinds of legal, technical or business expertise. Some areas may need to be relatively centralized, such as administering the Domain Name System (DNS), while others are inherently decentralized, such as how users choose to use particular systems such as the social media.

Who governs the various parts of this mosaic is therefore likely to vary dramatically. Some areas might be dominated by technical experts, others by government agencies, others by regulatory officials, others by users, and so on. As argued in a Rand Europe report: "Internet governance is not simply inter-governmental, technical or market-led, but also, critically, involves Internet users" (Cave et al. 2007: 5).

The question then becomes whether a particular kind of actor or interest (industry, government agencies, international institutions, civil society) tends to overwhelm the control exercised by others across most or all areas of governance. Ideally, there is a pluralistic array of actors – that is, governance might be specialized in some areas but balanced across many areas of the Internet mosaic – creating a distributed, decentralized and balanced multistakeholder governance structure to shape the Internet. A multistakeholder governance model is not a hierarchy of control, but a means of supporting communication and coordination across the many stakeholders (Figure 7).

Figure 7. The Multiplicity of Stakeholders to be represented.
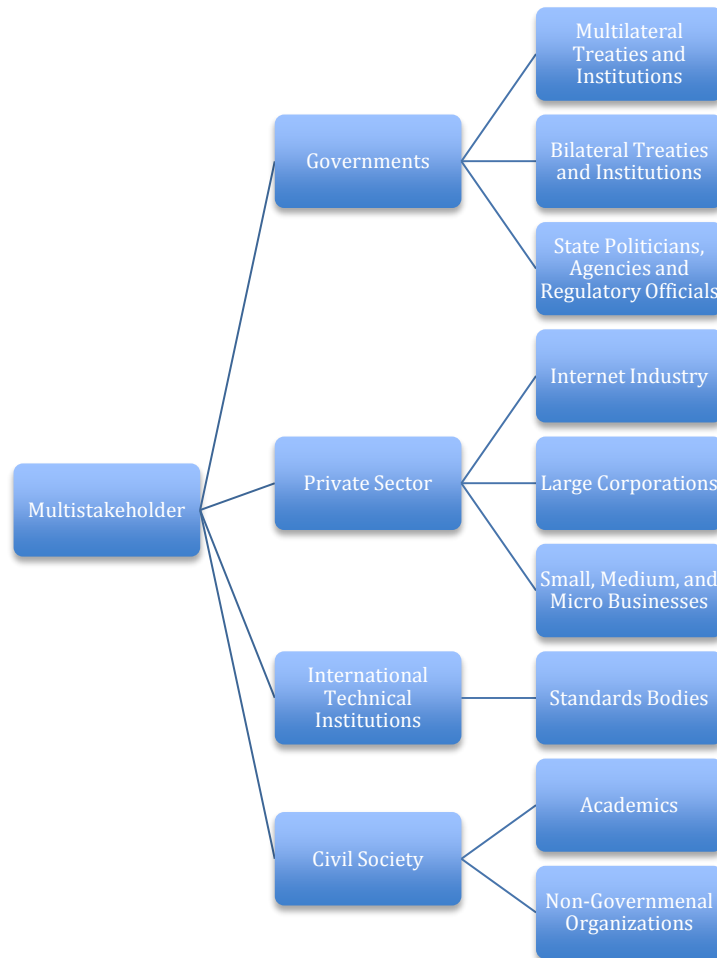
While there has been broad support for the multistakeholder approach to Internet governance, debate has emerged between proponents of the multistakeholder approach, such as in the US and European "tech communities," and a more multilateral or intergovernmental model, such as proposed by the Government of India.[16] There are also proponents of a more dual perspective that captures the values of both approaches, such as advocated by the government of Brazil, based on multistakeholder models within nations and for key institutions such as WSIS and ICANN, that could feed into multilateral

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[16] http://internetdemocracy.in/reports/india-at-netmundial/ [Last accessed May 13, 2015].

intergovernmental processes at the global level.[17] Moves toward a more government-centric approach of multilateralism are most often anchored in concerns over the failure of the existing mechanisms to shape policy and practice, such as in perceived threats to the ability of nations to govern privacy, police surveillance and espionage by companies and nations, and the malevolent behavior of some individuals.[18]

Tables 3–5 provide a comparison of the key differences that could be drawn from discussions of the multistakeholder (MSg) and multilateral (MLg) approaches to governance as ideal types, which inevitably vary from actual practice. At the broadest level, the leading principles of the two approaches clearly differ. MSg relies on collaboration among the key actors with a commitment to particular Internet governance issues (Table 3). Their legitimacy might stem from their expertise, experience or commitment to be involved and informed about particular issues, but the process seeks to directly engage multiple stakeholders – seeking representation from the private sector, technical community, civil society and non-governmental organizations, and academics, as well as governments, which are considered a key category of stakeholders. In contrast, the MLg approach looks to governments as possessing the sovereign right to guide Internet policy and regulation, as they are the legitimate – elected – representatives of all actors within their respective nations (Table 3).

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[17] Ibid.

[18] Hindenburgo Francisco Pires, "Roadmaps for a Multilateral Decentralized Internet Governance Ecosystem," Sao Paul, Brazil, April 23, 24, 2014. Available online at http://content.netmundial.br/contribution/roadmaps-for-a-multilateral-decentralized-internet-governance/217 [Last accessed May 13, 2015].<Reference entry needed>

Table 3. Comparing Ideal Types of Approaches to Governance

	Governance	
Dimensions	*Multistakeholder*	*Multilateral / Intergovernmental*
Leading Principle	Collaborative leadership among stakeholders with a commitment to particular problems	Sovereign right of governments to determine Internet policy and regulation
Guiding Assumption(s)	Experience, expertise and commitment of individuals and Internet community key to the Internet culture fostering innovation	Governments are the legitimate representatives of the national public interest
Representation of Stakeholders	Direct engagement of private sector, business and industry; governments; bilateral and multilateral international institutions; civil society and academia; and non-governmental organizations (NGOs)	National government agency represents interests of all in bilateral and multilateral treaties and agreements anchored in advice and consultation with all stakeholders
Role of Governments	A key category of multiple stakeholders, with legitimacy to decide	National governments represent other interests in intergovernmental entity
Proponents include	USA, Canada, EU	India, Cuba, Iran, Saudi Arabia, Russian Federation

There are a number of other processes that distinguish MSg and MLg processes (Table 4). Multilateral processes are focused on steering and communication more than policy-making; and through participatory, bottom-up decision-making that lead to a "rough

consensus," [19] rather than top-down decisions through consultation that lead to multilateral agreements and treaties. Transparency is therefore more central to MSg processes, with a constant concern to ensure open access to deliberations and agreements, and guarantee engagement and access by all major stakeholders, from whatever nation. Commitment, engagement and expertise are more important than national representation since the Internet is a global resource. Since there is no formal basis for determining how representative a group might be, decisions turn more on what some have called a "rough consensus" rather than on formal voting processes.

Table 4. Comparing Ideal Types of Approaches to Governance

	Characteristics of Governance Processes	
Dimensions	*Multistakeholder*	*Multilateral / Intergovernmental*
Key Governance Functions	Steering and Communication	Setting and Implementing policy and regulation
Process	Participatory bottom-up	Top-down consultative
Authority	Horizontal across stakeholders	Hierarchical within states and through international agreements/treaties
Standard Setting	Rough consensus	Multilateral agreements and treaties approved by intergovernmental entity
Transparency of Process	Open	Closed with Open Consultation
Major Constituency	Stakeholders of an issue, irrespective of nationality	Represent citizens of each nation
IP Addressing	Centralized in ICANN	Centralized in internationalized ICANN

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[19] The concept of "rough consensus" is commonly used within the Internet technical community, such as by Robert Kahn (2004). <Reference needed>

IANA Reporting to	Transition from NTIA (US Dept. of Commerce) to newly proposed entity that is not government- or intergovernmentally-led, such as IGF	Intergovernmentally-led entity, such as ITU
Examples	Internet Governance Forum (IGF)	World Intellectual Property Organization (WIPO); World Trade Organization (WTO); International Telecommunications Union (ITU)

ICANN might function well in either model, but the MLg approach would internationalize ICANN in some manner, rather than having an international MSg mechanism such as the Government Advisory Committee (GAC) advising ICANN as a California-based non-profit corporation. Likewise, under a MSg model, IP addressing would remain a federated process centralized in ICANN, and IANA would report to an entity that is not governmentally led, such as the IGF. In contrast, the MLg approach would place the IANA reporting under an intergovernmentally led institution, such as the ITU (Table 4).

 The IGF is often held as a basis for building on the MSg approach, while the ITU is viewed as a foundation for a more MLg approach. Founded in 1865, the ITU has a long history of engagement with telecommunications, and a set of missions that overlap with many aims tied to the IGF, such as allocating global radio spectrum and satellite orbits, developing technical standards to enable national telecommunication networks and technologies to interconnect, and supporting access to communication and information technologies worldwide. [20] From the beginning of the ITU, it has been an intergovernmental organization, but based on "public–private partnerships." The IGF is relatively young and emergent as an institution, with a constant existential issue over whether it will be extended and expanded by the UN.

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[20] https://www.itu.int/en/about/Pages/default.aspx [Last accessed May 13, 2015].

The motivations behind the two approaches differs as well (Table 5). The rationale behind the MSg approach is to ensure an open, global and secure Internet as a means to social and economic development. The same aims might underpin a MLg approach, but this approach prioritizes the interests of each nation, such as in putting the security, economic and cultural heritage of the nation ahead of any more global objective. The MSg approach is also viewed as a means to ensure a sense of ownership by all of the stakeholders involved in the Internet and its use, which often to not neatly align with nations, such as in the case of global firms and non-governmental organizations. In contrast, the MLg approach ensures that governments exert control over such an important infrastructure as the Internet, such as in national security issues, where governments cannot overlook security issues for their nation by saying they are controlled by others.

However, national representation could undermine quite legitimate goals, such as ensuring continued investment in ICTs on a global scale and preventing the geographical fragmentation – so-called Balkanization – of the Internet which could undermine its value to all nations. In this respect, exerting national sovereignty could lead to outcomes in no nation's interest.

Table 5. Priority Aims, Goals, and Objectives

	Characteristics	
Dimensions	*Multistakeholder*	*Multilateral / Intergovernmental*
Role of Internet	Provide open, secure and global infrastructure for economic and social development and innovation	Protect the (cyber)security of nations and the social and economic development and culture of their citizens
Implications	Stakeholders gain a sense of ownership; keep an open, global and secure Internet; but processes move slowly; and divisive issues can be ignored	Governments gain sense of control; able to act on key concerns of nations, such as security, content controls; but decisions might lag behind technology; issues divisive

		within nations might block decision-making
Key Objectives to Address	Digital divide or universal access, through investment in ICT infrastructures, services, and capacity building; Millennium Development Goals; avoiding fragmentation, Balkanization of global Internet; keeping an open Internet	Putting representative and democratic governments in charge of critical Internet resources; more equitable representation of national authorities; maintaining and exerting national sovereignty over cybersecurity and Internet policy and regulation, such as over expression, privacy and surveillance in ways sensitive to national cultures and interests

The Rationally Comprehensive or the Empirically Feasible Approach

The governance of issues related to the Internet is multilayered, fragmented, complex, and generally highly distributed. The Internet is not one technology but an assembly of many technologies at different levels. Governance is also not one process, but several at different levels and in overlapping arenas addressing specific issues. This means different government policies, regulations, and agencies that involve many different institutional, group and individual stakeholders will continue to be needed to address different governance issues.

This might appear to suggest an absence of governance. How was the Internet's rapid growth supported by such highly flexible, decentralized and pluralistic governance arrangements involving many different institutions and individuals? Arguably, it was this decentralized, bottom-up development that enabled the phenomenal level of innovation and diffusion that has characterized the Internet over its first decades. Nevertheless, it is also possible that the rapid and continuing growth in the uses and misuses of the Internet, and the industries and government activities linked to it, have created a danger that pieces of the emerging, and increasingly complex, Internet governance mosaic will become too

fragmented to distributively manage in ways to ensure that the larger public interest is best served. However, attempts to centralize governmental control in one or more multilateral institutions could stifle the innovation that has given the Internet its momentum, without addressing the issues of connecting actors and their choices across these multiple domains. Arguing for what he calls a "wide open Internet," Stuart Brotman (2015: 4) notes that the vitality of the Internet requires:

> an efficient ubiquitous broadband Internet ecosystem with virtually unlimited content and applications available without government restrictions. Users should be able to use the Internet at home, at work, and on the run through a range of devices accessing affordable high-speed wireline and wireless broadband networks.

A more traditional multilateral approach is not as likely to continue the innovation and pace of diffusion required to reach that goal, or even the more modest goal, of a wide open, trusted, and secure Internet. The risks of a MLg approach are many, but there are several likely principal concerns.

First, the history of international telecommunications regulation has been one that has stifled innovation and encouraged higher monopoly prices, such as in developing countries, where telecommunication revenues have been used to support general government funding. Since telecommunications and the Internet and related ICTs are key to social and economic development, principally through their innovative use by individuals, businesses and government agencies to save time, money, and other resources, MLg is feared to be a back-to-the-future moment in which the real payoffs of the information revolution will be lost.

Secondly, and related to the first point, the MSg approach would reinforce a clear trend in nations across the world to more heavily regulate the Internet and related ICTs. Nations from China to the United States have sought to encourage innovation of the Internet as a technology-led industrial policy. They have tried to get government out of the way of innovation in this sector as a means to grow new information-based industries, and to support the vitality of all users – individuals, businesses, not-for-profits, schools, and government agencies that use the Internet for a growing multiplicity of purposes. The

declining costs and increasing utility of Internet-related ICT and services has been of value to all, and the principal problems center around ensuring that the next billions of users are able to enjoy the same levels of access. While regulation per se is neither good or bad – it is inescapable – inappropriate regulation could undermine the vitality of the Internet. That is why moves to regulate Internet intermediaries, such as Internet Service Providers (ISPs), and impose new regulations on Internet providers, even such as Network Neutrality, could lead to the Internet being regulated as if it were another technology such as broadcasting or telecommunications.

Thirdly, a new intergovernmental or multilateral institution, or the expansion of the scope and authority of the ITU, for example, could also lead to jurisdictional turf struggles. Just as national governments resist relinquishing national authority to regional or international organizations, they will struggle to retain the authority to regulate telecommunications and the Internet, and not place that authority in a global institution that might focus on lowest common denominator initiatives, if any, or simply try to maintain existing regulatory regimes.

The Need for Multiple Approaches

The Internet is a package of many technologies across different layers, but also Internet governance is not just one process but several. No single governance model will fit all contexts, which suggests that Internet governance should broadly remain a fluid and non-hierarchical network of many agencies and individuals using cooperating and competing governance models (Figure 8). A key future aim from this perspective would be to adapt and scale-up "light touch" and agile coordination processes at a global level, rather than establishing new governance structures that would centralize decision-making or create potentially cumbersome and innovation-stifling new arrangements.

Figure 8. Multiple Governance Models Shaping the Internet

Governmental Policy & Regulation	Tech Community Consensus	Self-Regulation (Learning & Education)
Bilateral & Multilateral Treaties, Inst.	Tech Populism	Multistakeholder Governance

Governance oversight and support needs to encompass the full ecology of choices shaping the future of the Internet. The three-level categorization of Internet governance issues proposed in this paper (Table 1) is a means to appreciate the many pieces that fit into the bigger mosaic of Internet governance. But unlike a mosaic, if the actors and issues are at least loosely connected, and coordinated, the governance process could prevent the development of counterproductive or conflicting policies and practices. The decentralized, borderless and technically complex nature of the Internet means that neither traditional intergovernmental governance processes nor purely technical governance would be suitable models, as they both lack sufficient global accountability, are open to capture by special interests, and fail to "connect the dots," to borrow a phrase from a 2015 UNESCO conference (UNESCO 2015).

However, trying to balance stakeholders' conflicting and complementary views, values and interests is an inherently political process. Even if there is agreement on general principles, such as expanding access, and protecting privacy, there are tensions and disagreements over how to more precisely define, balance, and achieve these broad

objectives. Nevertheless, broad prescriptive policy goals can bring multiple stakeholders together and serve useful purposes in a governance process.

A key future Internet governance requirement will be to improve coordination between different governance organizations and other stakeholders, using different models and processes, in a way that does not harm the network's growth. For example, an independent coordinating group or forum with appropriate expertise and authority could help to identify, alert and link relevant agencies to aspects of the bigger picture that might otherwise be missed or underplayed—but leave it to those organizations closest to an issue to arrange an appropriate way of dealing with it. This has been one broad aim of the IGF, but the realization of this goal remains to be achieved.

The Internet as Problem-Solver or Problem-Generator

In considering the wisdom of continuing to pursue a multistakeholder approach to governance, or shifting to a more multilateral approach, a key issue is whether the full range of multiple stakeholders believe the Internet is predominantly a problem-solver or problem-generator. If the Internet is not broken, and continues to empower individuals and communities around the world, it is less reasonable to change course on its governance. However, if the Internet is creating more problems than it is solving, and – on balance – broken, then there is a reason to change course. Therefore, it is important to deal with some of the key ways in which the Internet is perceived to be creating opportunities or problems for nations and the world.

The Internet's Vitality Has Been Enabled by Non-Regulation

There is an argument that a heavier governmental hand in regulation and policy around the Internet at the national and global level could undermine its vitality, which has been dependent on innovation (Dutton 2015; Brotman 2015). As discussed earlier in this report, its diffusion has been spectacular over the last two decades and is poised to bring access to most of the developing world in the next two decades. It is important to remember that the Internet flourished under an industrial policy of light-touch regulation that fostered

innovation that outstripped the more regulated telecommunications industry that had held back innovation in this sector prior to the liberalization of telecommunications in the 1990s.

Telecommunication regimes around the world had limited competition, and maintained high prices of services, that discouraged the use of telecommunications by individuals and businesses in ways that demonstrably undermined the economies of developing and developed nations (Baer 1996). In liberalizing telecommunications, primarily to avoid the costs of monopoly phone services, and in getting the Internet out from under a telecommunication regulatory regime, governments created an enabling environment for the private sector to enter and compete for the provision of services. Liberalization and privatization have many parallels with moves toward multistakeholderism in the Internet sphere.

Regulation is Not Relevant to Innovation and Diffusion

There is a counterargument that has been given some oxygen by the success of the mobile industry over the past decade. The pace of mobile development has been remarkable worldwide, but particularly in developing nations that have been unable to gain comparable access to the Internet, and for which mobile networks are providing infrastructures for mobile Internet access. If the mobile sector is regulated, such as by ETSI (standards) and ITU (numbering), then why cannot the Internet be regulated more and still maintain its innovative character?

Of course, the Internet has been regulated also in respect to standards and numbering, albeit through different administrative–institutional arrangements. But as discussed above, these are but one set of the many sets of issues that are encompassed by Internet governance. Mobile took off not because of multilateral governance, but because the liberalization and privatization of the telecommunications and mobile sectors enabled lower costs of services and greater innovation. Moreover, the mobile sector has been subject to a stronger regulatory regime, such as in spectrum management, given the continuing problems of spectrum scarcity, but which arguably has limited its innovative development. It is clear that most of the dynamism of the mobile sector has not been tied to the licensed spectrum, but to the devices, such as the smartphone, that have made

mobile Internet so ubiquitous. In addition to the innovations in devices, and the software associated with them – mobile apps – the most creativity in the mobile sector is actually happening in the unlicensed spectrum (Dutton et al. 2014). For example, the United States is regarded by some studies as part of a leading group of nations in the development and use of the Internet (e.g., Brotman 2015), but not in the mobile area.

The New Internet World is Supportive of More Regulation

It is the case that the New Internet World is the most dynamic focus of growth, such as the dramatic rise of China and Asia more generally in the online world. If these nations espouse more governmental regulation, such as a multistakeholder model, then how can the Old Internet World argue against it? The argument would be based on the fallacy that the espousal of a normative model for the future of Internet governance is a factor that explains past growth. Actually, China and many other Asian nations developed the Internet aggressively as an industrial and development strategy. The promotion of Internet development was permissive, allowing a relaxation of political and social controls, and enabling the Internet to flourish (Qiu 2009).

China has long been known to filter political content online, but it has only been since the early 2000s that governmental policy and regulation in China, for example, has begun to clamp down more severely on political and unwanted social uses of the Internet and social media. In such a way, the dramatic growth of the Internet in China might well be curtailed and its use might become more of an entertainment consumer service than an infrastructure supporting business, and economic, social and political development. As a result, support for multilateral governance could be self-defeating for the developing nations, reversing recent very positive trends in the development of the New Internet World.

Regulation is Necessary to Address Key Problems

One argument for multistakeholderism is based on the fact that, despite dire predictions, the Internet hasn't yet collapsed or suffered major outages. There is a recurring cycle of concerns over the Internet breaking, such as by being overwhelmed by spam and other

malicious content, by immense volumes of content – from cat videos to films – by aging routers and other outdated aspects of its global infrastructure, and by running out of IP addresses, particularly with the rise of the Internet of Things, and the failure of many nations and ISPs to move ahead with new addressing schemes, like IPv6.

In 2003, the Oxford Internet Institute organized a conference in London on saving the Internet (Dutton 2004b). In 2015 there are new warnings of pending issues that could undermine the Internet's future unless there is a continuing stream of innovations to address the issues mentioned above. But these are not regulatory issues, as much as technical and business issues of continuing investment. Moreover, the Internet is not like a more centralized infrastructure. Each new node on the Internet enhances the capacity of the network – which is quite different from putting new strains on the network. One of the key issues is how to innovate a global technology. In that respect, a key issue is to ensure that governance mechanisms remain as global as possible, and are not fragmented by nations or regions. The Balkanization of the Internet is perhaps the most serious risk to the continuing vitality of this global infrastructure.

Governance Evolves Around the Early Foundations of Internet Governance

The Internet evolved with the support of highly flexible and innovative governance arrangements (Dutton and Peltu 2007). Organizations that emerged from this unplanned process—for example, current bodies such as ICANN, IETF, the World Wide Web Consortium (W3C) or the Internet Architecture Board (IAB)—are open, collaborative organizations. They resemble a fluid and loosely linked networks of individuals and institutions under a common structural framework, rather than more hierarchical and bureaucratic organizations. At present, there is no single organization steering Internet-centric policies, but there are a few which control key technical resources and many that can exercise a limited level of control on a regional basis. According to Reagle (1999), this has meant "there have been few formal Internet institutions that real-world governments could coerce, because institutions of Internet policy are voluntary, decentralized, and non-coercive themselves! There are few choke points others can grab hold of, and few mechanisms for delegating the coercive implementation of external

policies." However, developing national policy and regulation has increasingly focused on ISPs as just such a point of control.

Independence from Commercial and Political Influence

Institutional arrangements around Internet governance and regulation have been remarkably insulated from political and commercial domination, compared with more tradition media and telecommunication media (Dutton and Peltu 2005). By and large, the Internet has not yet divided governments and politicians the way in which older communication systems did. Radio and television broadcasting created major divides between governments that wished to exercise different regulatory traditions, such as state, public service, or commercial broadcasting. Cable and satellite innovations often divided politicians as they had major new economic objectives that led to conflicts with social and cultural objectives tied to traditional broadcasting arrangements. The Internet has been so adaptable and rich as a source of information and entertainment that it has not generated the same political controversies, but this might well change. For example, network neutrality rulings in the United States have created partisan divides that are likely to carry over into other regulatory issues surrounding the Internet. How nations and governments can preserve the relative independence of the Internet and related services from undue governmental or commercial interference is a key issue as we move forward.

The Technical Nature of the Internet has shaped its Governance

The Internet's technical design has been a significant influence in shaping the way it has been nurtured and managed, using governance processes that are very different to other communication media (DeNardis 2013, 2014). For instance, the global "network of networks" that comprises the Internet runs above the infrastructure of regulated telecommunications carriers. This has allowed rapid innovation without much regulatory interference (Cerf 2004), particularly by users exercising their communicative power "at the edges of the Net." One of numerous examples of this flowering is Skype's voice-over-IP (VoIP) telephony service, which had gained 300 million users by 2015 since its launch in 2003 (www.skype.com). There were early efforts to block voice services over the Internet by law, such as through European Directives, but these have generally failed for

running counter to rational economic incentives driving choices by users and the technical capabilities available to them. Over-the-top video services emerging presently are another example.

An example of the governance implications of an Internet design choice is its ideal of an "end-to- end" (e2e) capability, which allows users anywhere in the world to communicate with each other provided they are interconnected through networks that conform to basic Internet protocols. This allows all types of multimedia data to flow through the Internet, compared for example to the way telephone lines were designed around voice communication, or analogue broadcast channels around radio and television transmission from one point to reach large audiences. Another difference from more traditional media is that the Internet imposes no constraints on the uses to which the information flowing through it are put, or how users interconnect and interact with other parts of the network. In the best of circumstances, innovation happens at the ends of the network.

In these ways, intelligence and control is decentralized and transferred to users, who can choose how to reconfigure access to people, information, services and other technologies (Dutton 2004a). Such design foundations have assisted Internet resource governance organizations to navigate through, and steer, the astonishing growth of the Internet.

Nevertheless, there is growing concern about whether it is possible to manage effectively even the technical core resources of the Internet, let alone the wider implications of their application and use. For instance, the way in which the e2e design enables the Internet to be more independent of geographical constraints raises international policy questions about national sovereignty, legal jurisdiction, law enforcement, the management of economic resources, and human rights issues such as control over political expression and access to diverse cultural and linguistic resources (Wilske and Schiller 1997). As Post and Johnson (1996) noted:

Cyberspace does not merely weaken geographical boundaries, it obliterates them entirely (at least in cyberspace), because geographical location itself is both

indeterminate and irrelevant for transactions on the Internet . . . and the physical location of the constituency is unknown.

While this may well overstate the case in the decades since – law enforcement is often coordinated across as well as within national boundaries as the Internet is not the Wild West – it remains a key difficulty.

Internet Intermediaries are Not Analogous to Older Gatekeepers

Politicians in a number of countries believe they might have found an approach to regulating the Internet, such as for inappropriate content, by looking to intermediaries, such as ISPs (MacKinnon et al. 2014). Whether it is concern over copyright infringement or cyber-bullying, many politicians are being asked to do something, and one approach has been to press intermediaries to filter or monitor users. They are essentially seeking to transform ISPs into regulatory choke points, as if they were comparable to broadcasters of the television age. However, ISPs are not broadcasters, and putting them in a position to monitor or restrict access by users is likely to undermine freedom of expression and trust in the Internet and in ISPs, and also diminish the vitality of the Internet as a tool for social and economic development. This leads to a more general concern over an appropriate regulatory model.

Searching for an Appropriate Regulatory Model: Five Blind Regulators

The old Indian parable about the blind men and the elephant is a useful way to understand the key problem of appropriately regulating the Internet. Depending on your point of entry, the Internet looks like many different things. Focusing on the last link into the household, the Internet looks like a telecommunications network, as defined for example by the FCC in its 2015 network neutrality ruling and regulated as if it were a common carrier. Focusing on the distribution of content over social media, it seems to some regulators to be more like a broadcaster, and therefore subject to regulation created for broadcasting. More importantly, and more generally, we lack good, appropriate models or frameworks for regulating the Internet. Ithiel de Sola Pool (1983) understood this problem well, even before we talked about the Internet per se. In thinking about how to regulate computer-

mediated communication, he reviewed the problems and lack of fit between these new media and all of the existing regulatory models for newspapers, the mail, telephony, broadcasting, and cable communication.

Ways Forward for Internet Governance

The growing complexity of Internet resource issues and governance processes, and of their intertwining with wider social, economic and political policies and interests, is making it increasingly difficult to coordinate all the interrelated elements relevant to the overall picture of what is involved in the governance of Internet-related issues. Multistakeholder governance provides a general approach to identifying and coordinating a complex ecology or mosaic of choices being made by a wide range of actors around the world. Many questions have been raised about the value of this approach: Is it dominated by the United States, or the Old Internet World? Is the New Internet World left out? Are some stakeholders dominant (e.g., business and industry, or governments)? Are nations losing their sovereignty in a jurisdictional turf struggle over governance? Should governments exert more control through a multilateral approach?

Moreover, the early years of ICANN and the IGF indicate that there are limitations in multistakeholder governance. The relative status of different stakeholder groups in particular decisions often becomes an issue, such as a debate on how "democratic" multistakeholder governance should be.[21] For example, one stakeholder community, such as civil society, might feel that government or business wield disproportionate influence.

The multistakeholder communities that develop around Internet governance discussions can be caught up in the details of procedures and personalities of what may seem at times like an international traveling circus. They have been criticized as talking shops rather than organizations capable of making decisions (Dutton and Peltu 2007).

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[21] For example, see https://gurstein.wordpress.com/2014/10/19/democracy-or-multi-stakeholderism-competing-models-of-governance/ [Last accessed May 3, 2015].

And there continue to be unresolved debates about the eventual status of ICANN, a developing but nevertheless unresolved set of agreed definitions and norms to guide Internet governance efforts, and a sense that current structures have failed to adequately identify and coordinate the multiplicity of national policy and regulatory initiatives being taken around the world, irrespective of effort to provide multistakeholder governance at the global level.

These issues indicate that multistakeholder governance remains a work in progress. Its weaknesses need to be clearly articulated and addressed. Nevertheless, this approach is more realistic and empirically defensible than a more rational–comprehensive approach for a multilateral governmental agency to control the Internet. It does not require existing governmental and multistakeholder institutions to surrender their jurisdictional authority to a new supra-national institution. A failure to create a multilateral governance structure could also drive national policy and regulatory moves even further and faster than at present.

At the same time, it is likely that many intergovernmental institutions, such as the ITU, will develop stronger roles in the coming years as national governments develop policies and regulations to govern the Internet. For such reasons, it seems politically and empirically more reasonable to employ a multistakeholder model to oversee this global ecology of choices shaping the Internet.

Points of Summary and Conclusion

A key argument of this paper is that over the last several decades, the Internet has transformed from an interesting innovation to a global infrastructure that is supporting global economic and social development, while providing a global platform for innovations in technologies, such as software and applications, for business, industries, and society. There are problems, such as around the unethical and sometime malevolent use of the Internet by individuals, business firms, and states, but these should not be taken out of context and exaggerated. This infrastructure has primarily been a force for development.

Therefore, a primary principle must be to avoid doing any harm to the Internet, and preserving its openness, growth and innovative vitality. Vint Cerf (2004: 13) has argued that a first principle should be "do no harm."

Improvements in specific areas are critical, such as in cyber-security and privacy. These goals are most likely to be achieved by building on the Internet's style of fluid governance through open, adaptable and devolved bottom-up decision-making by a loosely linked network of individuals and institutions with efficient international coordination.

The question then is not whether to establish a new organization for Internet governance, but how to improve on existing multilateral and multistakeholder structures, networks and processes through a better global arrangement that helps to identify and coordinate the "bigger" picture formed by the emerging Internet governance mosaic – and the ecology of choices it presents. A coordination process will be pivotal to identifying and finding appropriate governance homes for any new issues to be addressed. Global actors could benefit greatly by being more aware of innovative approaches to the problems they have identified. Just as any problem can benefit from decomposing it into more manageable chunks, there are arguments for different sets of actors, with different levels of expertise, to focus on specific issues within a big picture framework that ties them together. This can help to ensure key issues aren't neglected, and a balance is maintained across the spectrum of Internet governance issues.

The IGF provides a valuable step in this direction. It could develop an approach to finding consensual ways of coordinating actors focusing on different aspects of Internet and related ICTs and their wider policy implications. This would help to identify, alert and link relevant agencies to aspects of the bigger picture that might otherwise be missed or underplayed. It could focus on building linkages between different agencies and stakeholders—some of which are multilateral institutions, others multistakeholder, and some of which are national, but others based in business, industry, and civil society. What is most critical is that IGF continues to refine its ability to identify issues, and then assemble those stakeholders closest to it to think through and arrange the most appropriate way of dealing with them. The IGF needs to develop the capacity to work

closely with the ITU and all other multilateral institutions, as well as all other stakeholders and actors in Internet governance.

The UN seems to be the appropriate basis for organizing the IGF and related work on Internet governance, given its work in seeking to encourage nations to work together in the interests of all. It would also take forward the UN's recognition of how the global political landscape is changing, for example as shown in the way the WSIS multistakeholder process demonstrates the UN's increasing emphasis on the role of the private sector and civil society in its deliberations. This should place the UN, through such institutions as the IGF, UNESCO, and ITU, in an ideal position to facilitate the early identification of Internet governance problems and to make recommendations about how to address them. This role could also include an attempt to agree broadly acceptable principles of good Internet governance, such as the principle of multistakeholder governance or the goal of transparency.

That said, a decade ago, WGIG (2005b: 12–16) highlighted the need to prioritize improvements in international coordination to help bring together the pieces of the Internet governance mosaic. It also offered four possible governance models for future discussion, all of which were too ambitious as approaches to governing the Internet. A shift to a multilateral governance structure could suffer the same fate.

What is feasible to achieve? As argued in this paper, governance of the Internet is the outcome of an ecology of choices made by multiple actors focusing on specific goals that can be far removed from Internet governance, such as registering domain names, or trying to improve cyber-security. From this perspective, there is an important role for an international multistakeholder forum like the IGF that can bring multilateral, bilateral, civil society, business and industry, and academics together to identify, discuss and guide the resolution of issues emerging around the Internet and related ICTs. Given the continuing global diffusion of the Internet, and the burgeoning role of mobile Internet and the Internet of Things, every nation has a stake in continuing to incrementally progress this work that we call Internet governance.

It is increasingly clear, however, that while the narrative of the last decades has been one around the driving forces of technical innovations and their implications for the Internet industry, the narrative of the next decade will be around the forces of policy, regulation and governance. With this emerging push for more regulatory control of the Internet, it is not only critical to address governance structures, but also to find appropriate models for regulating a technology that is significantly different from older media governed by old regulatory models. Finding the best structures, processes and models for governance over the coming decade will shape the future vitality of the Internet and the overall vitality of local and global economic and social development.

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