Net Neutrality as Global Principle for Internet Governance

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Drafter:
Milton Mueller

Concurring:
Derrick Cogburn
John Mathiason
Jeanette Hofmann

1. Introduction

This paper discusses the concept of *network neutrality* (NN) and explores its relevance to global Internet governance. Internet neutrality is usually seen as a domestic regulatory issue. And in many ways it *has* been a domestically focused controversy, up to now. It originates in a debate over the policies to be applied to broadband access networks, which are typically licensed and regulated at the national or even the state and local levels. Some commentators have even asserted that the relevance of NN is confined exclusively to the United States. (Cave and Crocioni, 2007; Clark, 2007) They reach that conclusion because the U.S., which pursues a policy of encouraging facilities-based competition, does not require its incumbent telephone or cable companies to share their local access facilities with competing Internet service providers. This gives them more market power and may encourage them to exert vertical leverage over content and applications markets.[1]

But as a normative guide to policy, network neutrality transcends domestic politics. The network neutrality debate addresses the right of Internet users to access content, services and applications on the Internet without interference from network operators or overbearing governments. It also encompasses the right of network operators to be reasonably free of liability for transmitting content and applications deemed illegal or undesirable by third parties. Those aspects of net neutrality are relevant in a growing number of countries and situations, as both public and private actors attempt to subject the Internet to more control. Because Internet connectivity does not conform to national borders, net neutrality is really a *globally applicable principle* that can guide Internet governance.

The potential of NN to serve as a global principle is especially relevant to the Internet Governance Forum and other post-WSIS institutions. The Tunis Agenda, which emerged from the World Summit on the Information Society, commits the world's governments to develop globally applicable public policy principles for Internet governance.[2] These principles are needed to guide the relationship between territorial governments and the global Internet.

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1 Clark (2007, p. 704) says, "While debates about NN are now breaking out around the world, the term (and the tension) seems to have arisen in the US, and one could speculate that the reason for this is that [the U.S.] have abandoned the idea of increasing competition through facilities unbundling, and see (to some extent) the outcome of that decision, whereas other parts of the world are following the path of encouraging competition at the retail level through unbundling, and are thus hoping that the issues of market power at the retail level will be less pronounced."

2 The Tunis Agenda recognized "the need for development of [Internet] public policy" and paragraph 70 called for "the development of globally-applicable principles on public policy issues associated with the coordination and management of critical Internet resources."

The original concept of net neutrality was based on the end-to-end argument,[3] which implies universal and reciprocal access among the users connected to the Internet. In my discussion of the definition of NN in Section 2, I will describe how this concept has become confused with efforts to regulate how network operators manage their bandwidth. This emerging redefinition of the concept, I will argue, is a damaging wrong turn and should be abandoned. Once the confusion of NN with bandwidth regulation is overcome and the proper definition restored, it is easier to see the transnational relevance of the principle. Properly defined, the principle of network neutrality combines and integrates concepts of universal access to the resources connected to the Internet, freedom of expression, economic innovation, and free trade in digital products and services.

The paper identifies three distinct ways in which the concept of network neutrality might attain a status as a globally applicable principle for Internet governance. First, NN can be promoted as a *global norm* to guide Internet policies, whether those policies are implemented domestically or internationally. That is, assuming that we agree on what a NN policy is and on its beneficial nature, then NN proposals can be picked up by public interest advocates, industry advocates and policy makers in many different nations and promoted in their own domestic telecommunication policy arenas. There is already evidence that the concept is diffusing globally in this respect.

Second, the norm of "neutrality" can be extended to the Internet's technical coordination functions, which are global in nature. The coordination of Internet names and addresses, many believe, should be a neutral enabling function and not exploited for regulatory purposes. Debate about the applicability of this norm to ICANN's activities already plays a significant role in the politics of ICANN.

Third, the concept of "nondiscriminatory access," which underpins the idea of NN, is also central to the concept of free trade in goods and services. In the global information economy there is a close connection between a neutral Internet and nondiscriminatory market access. A concept of NN, therefore, could play a role in aligning the WTO regime with the global Internet governance regime. This aspect of NN is particularly important because it applies to *state actors* as well as to private network operators.

On this basis, the paper concludes that the concept of a "neutral" Internet has global applicability in a variety of contexts relevant to Internet governance. The paper concludes by describing the potential of NN to serve as a global principle, while also realistically assessing the obstacles to adoption and implementation such a principle would face.

2. What is NN?

As the third paragraph suggested, there is a need to sharpen and clarify the meaning of network neutrality. The concept means different things to different people. The first step toward clarity is to recognize that at the present time, NN is a

3 Originally formulated by Saltzer, Reed and Clark (1984), e2e basically means that the Internet was designed to make the network a general-purpose data transport capability that gave end users (or the "edges" of the network) the ability to control the applications they used and to develop news applications that would work over the internet. See also Lessig (2002).

normative principle in search of a policy. That is, it describes a *goal* that can guide the transition to a broadband Internet. But it is still not clear which specific laws, regulations or policies can best implement that goal.[4]

As a normative principle, NN has acquired two distinct meanings in the public debate. One is focused on the regulation of *bandwidth*. Some NN advocates are worried about attempts by broadband Internet suppliers to depart from the traditional best-effort packet forwarding and wish to prevent network operators from differentiating the speeds with which packets are delivered. The second approach to NN focuses on *universal access to the resources connected to the internet.* It is derived from the end-to-end principle and seeks to prevent the blocking of access to web sites by network operators, and their establishment of walled gardens or similar kinds of limits on the content, applications and services that can be accessed by Internet users.

These two distinct flavors of network neutrality are not always recognized as distinct, even by NN advocates themselves. Yet they are based on quite different diagnoses of the problem, and suggest different remedies. In the analysis below, this paper explains why a NN principle based on opposition to bandwidth-differentiation is a dead end, and argues in favor of a definition of NN based on unimpeded, reciprocal access to Internet resources.

a) What Net neutrality is <u>not</u>: regulation of bandwidth

For many, network neutrality has come to mean opposition to any form of differentiation of a network operator's bandwidth. Because of the wide variety of services and applications that can be delivered over a broadband Internet, carriers are beginning to consider business models that differentiate the speed or priority with which packets are delivered. Usually these discussions are motivated by a desire to deliver video content or services. Video requires continuous streaming and consumes a lot of bandwidth. Some carriers believe they can charge extra for "tiered service" or "packet prioritization" capabilities that will improve the quality of the services delivered over the Internet. (OECD, 2007; FTC, 2007)

Bandwidth tiering has generated furious political opposition in the United States – even though the debate is largely hypothetical.[5] As one advocacy group has argued in debates before the US Congress:

> The heart of the Internet protocol is the agreement that all data packets will be passed through without regard to which application created them or what's inside of them. This reliable, uniform treatment

[4] Most of the literature on NN diagnoses, debates and analyzes problems rather than advancing specific regulatory solutions. For one attempt to articulate a policy, see the merger agreement between AT&T and the FCC, which contained a "neutrality" commitment: Robert W. Quinn, Jr., AT&T Sr. Vice President, Federal Regulatory, to Marlene Dortch, Secretary, U.S. Federal Communications Commission, 28 December, 2006, Re: In the matter of review of AT&T Inc., and BellSouth Inc. Application for Consent to Transfer Control, WC Docket No. 06-74. http://www.fcc.gov/ATT_FINALMergerCommitments12-28.pdf

[5] There are no commercial implementations of tiered broadband service yet. The controversy was sparked by an interview with AT&T CEO Ed Whitacre Jr. in Business Week November 2005, where he claimed that Internet companies that consume a lot of bandwidth "use my pipes free," and that "there's going to have to be some mechanism for these people who use these pipes to pay for the portion they're using."

> of packets is precisely what has made the Internet a marketplace of innovation so critical to our economy.[6]

The claim here is that the Internet protocol itself somehow embodies an agreement to treat all packets equally. But this claim is not accurate. The TCP/IP protocols define an address space and a way to chop information into packets, assign addresses to them, and reassemble them at the destination. The protocols don't care whether someone reads what is inside the packet or makes a routing priority decision based on the header information or the payload along the way; TCP/IP continues to work as designed whether or not that happens. Years before the NN controversies, IETF working groups were creating "quality of service" protocols such as *Diffserv*, which were designed to differentiate between packets based on the type of service involved.[7] Today, virtual private networks carve out special "tunnels" for the exclusive use of heavy users, either for traffic prioritization or security purposes. Akamai and similar network management firms offer their clients faster content delivery by removing critical traffic from best-effort routing and moving it onto routes that are prioritized. If various forms of packet prioritization or packet shaping were literally incompatible with the TCP/IP protocols, we wouldn't be having this debate.

Furthermore, if we want to encourage a faster and more capacious broadband Internet it makes sense to encourage network operators to try to gain a competitive advantage by offering faster speeds for a higher price. A bandwidth market is not a zero sum game in which any extra bandwidth resources consumed by one person means less for others. Just as competition among automobile manufacturers has transformed features that were once expensive luxury items into standard equipment (air conditioning, antilock brakes, etc.), so offers of faster speeds for higher prices among competing networks are likely to increase overall levels of bandwidth availability and consumption. Bandwidth differentiation also might make service cheaper by reducing the amount of capital investment required to expand infrastructure. (Houle, Ramakrishnan, et al, 2007) And as MIT's David Clark observes, differentiation of bandwidth could help us to avoid "an even more dramatic form of discrimination, which is to build multiple, parallel versions of the Internet, each supporting different service qualities, and separately selling access to each." (Clark, 2007, p. 705)

Political advocacy around bandwidth differentiation has tended to veer into irrational territory. One opinion piece claimed that network operators, if left unregulated, will "sell access to the express lane to deep-pocketed corporations and relegate everyone else to the digital equivalent of a winding dirt road."[8] Such definitions of net neutrality imply that all Internet content must "move at the same speed over the network."[9] The economic logic of this argument was exactly the same as a claim that everyone should be required to wear blue Mao suits, because

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6 Dynamic Platform Standards Project, "For Real Network Neutrality," http://www.dpsproject.com/twotypes.html. This group advocates prohibiting non-neutral networks from using the term "Internet" when advertising and marketing their services.

7 RFC 2474, (December 1998) "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers", K.Nichols, S. Blake, F. Baker, D. Black, www.ietf.org/rfc/rfc2474.txt

8 Lawrence Lessig and Robert McChesney, No Tolls on the Internet, Washington Post, June 8, 2006, at A23.

9 Ibid.

otherwise only the rich will be nicely clothed and the rest of us will be in rags. Such a position ignores the fact that the public Internet is now, and always has been, characterized by huge differences in the levels of bandwidth consumed by households, businesses, hosting providers and web-based service providers. Indeed, there would be no broadband Internet at all if some people weren't allowed to pay more than dialup subscribers for the higher speeds of cable modems, DSL or fiber.

A bandwidth-oriented definition of NN attempts to impose absolute uniformity on a market that cries out for differentiation. In order to impose uniformity its proponents must attempt to rigidly govern the specific technological methods and configurations for moving packets across the Internet, as well as the pricing of bandwidth. One legislative proposal in the United States would have made it flatly illegal for bandwidth providers to charge more for better network performance. Other advocates have insisted on legislating first-come, first-served packet forwarding as a technical principle. Bandwidth-oriented definitions of NN thus encourage highly interventionist policies and can be easily dismissed as a technological straightjacket that would stifle change and evolution of the broadband infrastructure. (Yoo, 2006a and 2006b; FTC 2007; Orlowski 2007) Worse, as long as the debate centers on bandwidth differentiation, the emphasis on blocking or censoring sites, or on universal access gets lost in the techno-economic babble.

It is true that anti-competitive abuses of bandwidth tiering are possible. A more sophisticated version of the bandwidth argument holds that without neutrality rules, network operators will use packet-inspection technologies to favor the transmission of their own content and applications, or those of their affiliates. More broadly, there are technologies that can make the network more aware, on an ongoing basis, of what applications its users are using and who provides them. Network operators who vertically integrate into content and applications can, it is feared, use this knowledge to adjust routing or packet-handling policies to degrade the services of its competitors. Deep packet inspection (DPI) technologies are in fact currently available, for both fixed and wireless networks.[10] They are already used to monitor peer to peer networks, online pornography and copyright infringement – or at least the technology vendors claim that they can be so used. These concerns are real and important. But they are relevant only insofar as bandwidth management techniques are part of a strategy of vertical integration by network operators into content and applications, or when they are used to censor or block access to Internet resources. In other words, the issue is not bandwidth differentiation per se, but blocking or gatekeeping, or anti-competitive discrimination. So let us turn now to the other flavor of NN: a definition based on access to Internet resources.

b) What Net neutrality is: nondiscriminatory, universal access to Internet resources

The access-oriented approach to NN focuses on the incentives of network operators – and governments – to block or restrict access to Internet resources. It is

10 "Deep Packet Inspection: Taming the P2P Traffic Beast," Light Reading Insider, August 2006. http://www.lightreading.com/insider/details.asp?sku_id=1221&skuitem_itemid=957 See also the Cisco White Paper "Maximizing use of Mobile Data Infrastructure: The Importance of Service Control in Mobile Networks," (2005) http://www.cisco.com/application/pdf/en/us/guest/products/ps6501/c1244/cdccont_0900aecd80342822.pdf; and Gur et al, 2006

concerned with preserving the universal, reciprocal and nondiscriminatory access traditionally associated with Internet connectivity, and not with specific methods of bandwidth management or the offering of differentiated services. A principle of universal and nondiscriminatory access aims to preserve the ability of any Internet user to connect to any lawful content or services on the Internet, and the reciprocal right to have their resources universally accessible to others on the Internet.

Unlike the fears of bandwidth tiering, which are largely if not entirely hypothetical, there are many real incidents of Internet blocking and censorship by network operators and governments. The most famous example is probably the Madison River case, in which a regional telephone company in the United States used port blocking to prevent its subscribers from using Vonage's voice over internet protocol (VoIP) service.[11] (Vonage also complained during this period that some cable television companies were blocking its service for anti-competitive reasons.) There are also examples of carriers curbing the use of specific peer-to-peer protocols, such as BitTorrent.[12] As examples of gatekeeping or blocking motivated by censorship, three incidents have become particularly well known. The Canadian ISP Telus blocked access to a web site of a striking labor union. AT&T recently excised part of a Pearl Jam live Internet concert when the band criticized George Bush. And Verizon seems to have blocked a broadcast SMS message from the National Abortion Rights Action League because of a rigid application of outmoded regulations governing the discussion of contraceptive techniques.

In addition to interference with content and applications by private actors, governmental blocking and filtering of Internet content has become increasingly common, even in some nominally democratic countries.[13] Sometimes this takes the form of requiring ISPs to block sites as a matter of state policy. It can also take the form of litigation by private parties. As an example, two Dutch NGOs focused on working conditions in the global garment and sport shoe industry published information critical of labor conditions at a Bangalore, India company.[14] Angered by the accusations, the company in January 2007 sent a letter accusing the NGOs of "intentional spread of incorrect information," "criminal conspiracy" and "cybercrime." In addition to threatening the NGOs who published the information, the clothing company turned its wrath upon Dutch Internet service providers XS4All, suing them in Indian courts. Its crime? XS4All provided the NGOs with a broadband connection – and had no knowledge of or responsibility for the web site itself. An ISP known for its commitment to free expression, XS4All has not cooperated with efforts to take down the sites. Nevertheless, it has found these charges disruptive and expensive to fight. Many other Internet companies might easily buckle under such pressure. Clearly,

11 The Madison River Company was quickly sanctioned and fined by the Federal Communications Commission. U.S. Federal Communications Commission, Consent Decree, In the matter of Madison River Communications LLC, and affiliated companies, File No. EB-05-IH-0110, FRN: 0004334082. http://www.fcc.gov/eb/Orders/2005/DA-05-543A2.html

12 The most recent case involved cable ISP Comcast deliberately interfering with BitTorrent users; see Harold Feld's incisive analysis of this incident at his blog: http://www.wetmachine.com/item/912. Also see Michael Geist blog, "The unintended consequences of Rogers' packet shaping." http://www.michaelgeist.ca/content/view/1859/125/

13 The University-based Open Net Initiative documents and monitors blocking and filtering worldwide. http://opennet.net/

14 The Clean Clothes Campaign is an international coalition of NGOs and trade unions; The India Committee on the Netherlands is a Dutch NGO that advocates on behalf of marginalized groups in India. The company they criticized was Fibres & Fabrics International/Jean Knit Pvt Ltd.

these are attempts to exploit the high costs of international litigation in order to use ISPs as chokepoints for suppressing Internet-based expression. It is a perfect example of why NN must be a *globally applicable* principle.

Economic Aspects of NN

From a purely economic standpoint, this view of network neutrality targets *vertical tying* between the supply of bandwidth and the supply of content, applications and terminal equipment (all of which are useless without bandwidth). Tying refers to the behavior of selling one product (the tying product), conditional upon the purchase of another product (the tied product). (Tirole, 2005) The supplier of the tying product is presumed to have significant market power, or a monopoly.

To apply this definition, broadband network service can be used as a tying product. A limited set of carrier-selected content and applications can be bundled together as a tied product.[15] This is what cable TV operators in the U.S. do – tie the supply of communications capability to a specific package of channels and programs. Likewise, the mobile handset is often a tied product, with mobile network service used as the tying product. That is, handsets are often sold by network operators at a subsidized rate conditional upon the purchase of network services for a fixed term.[16] Network operators then "lock" handsets and sometimes disable features to prevent them from switching networks. (Wu, 2007) Most antitrust analysis is concerned with cases in which the tying product is a monopoly and the tied product is (potentially) competitive. Broadband network service, however, is rarely purely monopolistic or purely competitive; more often than not it falls somewhere in between. This complicates the economic case for NN.

Policies aimed at carrier-based exercises of vertical leverage fit readily within an economics framework designed to maximize competition, efficiency and choice. Policies regarding content regulation and carrier liability, on the other hand, go beyond simple competition policy and raise issues of individual rights, morality, culture and the proper role of large-scale communication infrastructures in society. Competition law and economics is important and helpful in assessing the design or scope of NN policy implementations. But NN cannot be defined as simply an absence of anticompetitive exercises of vertical tying by broadband access providers. It must also encompass a positive assertion of the broader social, economic and political value of universal and nondiscriminatory access to Internet resources among those connected to the Internet.

NN and Freedom of Expression

15 Bundling, which often works in tandem with tying, refers to the practice of selling two products together. Pure bundling means that the products are available only as a bundle, whereas tying usually assumes that the tied product is also available on a stand-alone basis. But this distinction doesn't matter if the tied product has no value without the tying product. (Ibid, 10)

16 This could also be called pure bundling, both because the network service has no value without a handset, and because the handsets offered through the network operators are not the same as the handsets offered independently and thus are not available on a stand-alone basis.

Not all blocking of access to Internet resources is done to achieve competitive advantage.[17] From a global perspective, government-mandated blocking of Internet access equals or exceeds the threat from commercially motivated discrimination by carriers. Likewise, attempts by third parties to mount lawsuits against Internet service providers because they host websites or passively carry traffic deemed objectionable constitutes a massive drain on network operators' time and resources. The case for NN must go beyond economic policy and be informed by concepts of freedom of expression. True NN advocates would object to efforts by private carriers to regulate the content that can be accessed by their subscribers regardless of whether the interference gives them a competitive advantage or disadvantage.[18] The case for NN is based on a belief that the basic infrastructure of Internet communication should enable end users to decide what they see and what they send and it is improper for a public, network intermediary that aggregates large amounts of traffic to assume a gate keeping role.

NN policies also protect *suppliers* of network services from liability for the traffic or content that goes over their network. This too has free expression implications. The "neutral carrier" status sometimes associated with network operators means that they are shielded from full responsibility for illegal conversations, copyright-infringing transmissions of digital content, or other undesirable activities that might occur through their network without their knowledge. (See Frieden, 2007) This policy can be seen as both efficiency-enhancing and as a means of protecting and encouraging robust expression and association. In a large-scale, complex society, an operator of a major infrastructure that aggregates massive amounts of social communication should not be given incentives to monitor and block communications. Yet if carriers are made responsible for illegal activity that relies on their networks, they will be forced to engage in systematic surveillance and blocking activity. The side effects of such efforts are undesirable; many potentially legal and desirable acts of communication would be inadvertently suppressed by network operators attempting to minimize their risk, and there would be major intrusions into user privacy. The flip side of an NN policy that valorizes the right of Internet users to access each other without interference from intermediaries is the belief that network users wronged by other users must hold the wrongdoer responsible – not the intermediary network operator.

This view of Net neutrality does not necessarily mean that any and all restraints on content and expression must be eliminated. It simply asks that public Internet service providers not be used as the chokepoints to impose them. Possession, production and publication of illegal content can still be punished, but a NN principle asks that we confine that regulation to the responsible users and avoid, or minimize, interfering with universal Internet connectivity in our attempt to do that. This view of NN also permits blocking of users or domains that disrupt or impair the

17 Cave and Crocioni (2007, 672), e.g., reassert the economists' standard line that "Absent strategic motivations, no ISPs or network providers would have an incentive to deny access to websites, as this would reduce the attractiveness of its own services and they would lose profits." Of course, a variety of "strategic motivations" might be present, and more significantly, incidental or even irrational forms of interference can be damaging to end users and to society generally.

18 Note that concerns about blocking do not extend to user-initiated or user–selected options, such as Google's Safesearch or ISP-supplied filtering softwares that are voluntarily installed by users. No consistent or coherent free expression norm can insist that content transmitters have a right to access receivers who are uninterested, unwilling or offended by their wares.

technical functioning of the network, such as illegal spam sites or generators of DDoS attacks. These kinds of activities are, quite literally, "crimes against the network." They threaten the very freedom of access a NN policy is intended to defend, and thus it is legitimate to suppress them (insofar as such techniques are effective, which they may not always be).

NN and Innovation

Whereas the bandwidth-oriented approach to NN is grounded in an egalitarian belief in the inherent evils of market-driven service differentiation, the access-oriented approach welcomes competitive markets and innovation. Wu (2003), for example, grounds the case for network neutrality in a Schumpeterian or Hayekian theory of how the open markets built around nondiscriminatory access to critical inputs will spur technological and business innovation. Internet access that is nondiscriminatory lowers barriers to entry and prevents errant central planners from imposing their mistakes on the greater economy:

> Speaking very generally, [NN] adherents view the innovation process as a survival-of-the-fittest competition among developers of new technologies. They are suspicious of models of development that might vest control in any initial prospect-holder, private or public, who is expected to direct the optimal path of innovation, minimizing the excesses of innovative competition. The suspicion arises from the belief that the most promising path of development is difficult to predict in advance, and the argument that any single prospect holder will suffer from cognitive biases (such as a predisposition to continue with current ways of doing business) that make it unlikely to come to the right decisions, despite best intentions. (p. 145)

In other words, nondiscriminatory, universal access optimizes the chances that a valuable innovation will have an opportunity to succeed by maximizing its access to markets and minimizing the ability of an intermediary to substitute their own judgments for those of end users.

3. Net Neutrality and Global Internet Governance

I have advanced a definition of NN that emphasizes nondiscriminatory, universal access to Internet resources and which, like the classical "end-to-end argument" underlying the Internet's architecture, tries to place control of content and applications in end users' hands and to confine the intermediary network to an enabling role. This section now explains how those concepts are relevant to global Internet governance.

In the USA, NN is often understood as a policy that seeks government intervention as a counterweight against the perceived market power of broadband access providers. This has had the unfortunate effect of encouraging many net activists to see the intervention of national governments as a generally positive development. It has also prompted civil society activists to regard net neutrality as rooted in the peculiarities of U.S. economic policy, and therefore of little interest for global activists. This is a mistake, because the core issue of access to information remains as vital internationally as it is nationally. Here, however, the question is not just one of economics and market power – it is also one of government actors

intruding into the network to impose national priorities and national norms on a global network. Unfortunately, the belief of U.S. activists that network neutrality means government intervention as a counter-weight to corporate power, and the belief of European activists that concerns about the neutrality of the network are either peculiar to the United States or a function of economic regulation, have prevented activists from embracing an important normative principle and from recognizing that on a global level governments, rather than corporations, can be the chief danger to the free flow of information.

a) Global Norm Diffusion

As a normative guide to policy NN can be – and is being – diffused globally. It is not simply the ideal or norm that can spread globally; it is also the specific contentious practices – the framing of the controversy, the targeting of specific actors, the tactics – that could go transnational. Sidney Tarrow's (2005) discussion of *The New Transnational Activism* catalogues what he considers to be the five main processes of transnational contention. One of these is "diffusion," which he defines as the imitation, adoption and adaptation of forms of contention in places different from their origin. This is what is happening when media activists in Brazil or France pick up the language of "network neutrality" and introduce it into domestic policy debates.

An easily-understood precedent would be the global diffusion of policies that eliminated state-owned telecommunication monopolies and liberalized domestic markets for telecommunication services. These policy prescriptions took root in the U.S., U.K. and Japan in the early 1980s and became models, guides or norms for many other countries in the 1990s. After widespread implementation in key domestic markets the way was paved for WTO agreements liberalizing international telecommunication services and market access. It is possible that the concept of NN, too, could take root as a guide to domestic policy and diffuse internationally. As noted before, there is a legitimate debate about which policies actually foster a neutral network on the broadband Internet without creating undesirable consequences. If the advocates of NN can successfully translate their ideas about freedom of expression into modular, reproducible policies that work in various economic and institutional contexts, and if these policies have the beneficial societal, economic and innovation effects that its adherents claim, then NN will be promoted by public interest advocates as well as industry actors in multiple domestic arenas and in international institutions. Even if NN could only be adopted and implemented at the national level, it would be possible for a global movement to advance that goal on a transnational basis, as a globally applicable norm guiding national policies.

It is already evident that the controversies and the language associated with the NN debate are spreading internationally. For example, European debate over the functional separation of telecommunication infrastructure and services is now being recast in terms that invoke "network neutrality."[19] European policy analysts are

19 EU Information Society Commissioner Viviane Reding has said, "I firmly believe in net neutrality. I firmly believe in the principle of access for all. The Commission does not want to see a two-speed internet where the rich benefit and the poor suffer. As information and communications technologies (ICTs), and the internet is a fundamental driver of our economy our policy of net neutrality we feel will create a dynamic and innovative net economy and society that in turn will fuel our competitiveness. I

relating their own regulatory regime to the US-based net neutrality debate. (Cave and Crocioni, 2007) Likewise, when Brazil's biggest telecommunications company attempted to block Skype, the Internet-based voice service, because of its competition with their own long distance services, there was a huge outcry of users and an invocation of net neutrality norms. (Fisher, 2006)

b) Core Neutrality and ICANN

The most directly global aspect of net neutrality concerns its applicability to the functions performed by ICANN and other organizations involved in the coordination of the Internet's addressing and naming assignments. Ever since ICANN's inception, there has been a longstanding debate over its status as a "technical coordinator." ICANN as technical coordinator implies that its main task is to maintain the uniqueness of Internet identifiers. On the other hand, it has been evident for some time that ICANN also has the ability to make and enforce public policy by attaching conditions to the use of the critical internet resources it assigns and allocates. (Mueller, 2002) A true "technical coordinator" role implies that ICANN would be indifferent to any social goals other than the basic one of maintaining the global compatibility of the Internet's identifiers. This implies *neutrality* with respect to social outcomes unrelated to that basic mission. A non-neutral, policy making role on the other hand implies that ICANN would fully exploit its gatekeeping power over access to identifier resources to load policy criteria unrelated to compatibility onto its coordination decisions.[20]

The concept of neutrality was introduced explicitly into this policy domain recently, during the development of ICANN's policy toward the addition of new top level domains.[21] Following the intense controversy over a proposed .xxx top-level domain for pornographic content,[22] the mainstream view in ICANN is that applications for new TLD strings should be evaluated on the basis of their semantic meaning in order to assess their conformity to global standards of "morality and public order."[23] The proposed policy puts ICANN in the position of deciding what words or character strings are acceptable for global "publication" as a top-level domain name. In other words, ICANN's new TLD review process will be used to restrict the availability of top-level domain names to avoid offensive or sensitive terms. This approach means that ICANN's role goes beyond that of the neutral technical coordinator it often claims to be. It will, if the policy is adopted, use its privileged status as a gatekeeper to the name space to enforce its own native "public policy" regarding what names and symbols are appropriate for publication on the

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will ensure in the new Telecom Package to be presented by the Commission on 13 November that these principles are once again reaffirmed." Interview with Viviane Reding, http://adslgr.com/forum/showthread.php?t=137431

20 Unfortunately, clear and productive debate over these two distinct approaches to ICANN's mission has been clouded by ICANN's (and the U.S. government's) insistence that it is a technical coordination body – even as it vigorously exploits its position as controller of the root to make policies unrelated to technical coordination.

21 The Final Report of ICANN's GNSO on "Introduction of New Top Level domains" (8 August, 2007) http://gnso.icann.org/issues/new-gtlds/pdp-dec05-fr-parta-08aug07.htm

22 See the 16 January 2007 IGP paper, Triple-X, Content regulation, and the ICANN Regime," http://internetgovernance.org/pdf/new-xxx-contract.pdf

23 Recommendation 6 of ICANN's new gTLD process said, "[proposed gTLD strings] must not be contrary to generally accepted legal norms relating to morality and public order that are enforceable under generally accepted and internationally recognized principles of law.

Internet. ICANN's new TLD policy throws open every application to politically, economically and culturally motivated challenges before any registration can take place.

ICANN's more restrictive approach to new TLDs has been strongly challenged by civil liberties groups. They have started a campaign to "Keep the Core Neutral."[24] The adoption of the language of "neutrality" was not, initially, derived from domestic net neutrality campaigns focused on broadband policy. It emerged more from the Internet technical community's belief in the end to end principle; i.e. the idea that the Internet infrastructure should be a neutral enabling infrastructure driven by end users, and not governed from the middle.[25] An early paper argued that "In order for the goals of the Information Society to be fully achieved, it is paramount that there be a neutral coordination of the Internet's core resources. ...ICANN actions in adding entries into a database should be a politically neutral technical function...." This paper, and subsequent activism, recognized that ICANN's power to authorize new top level domain names had the potential to push the international organization into the territory of content regulation. Like the NN campaigns, opposition to ICANN's regulation of the content of top level names is based on the belief that imposing a layer of prior review and standards of "morality and public order" on the selection of top-level domains is inimical to freedom of expression and to innovation. They want ICANN's coordination of identifiers to be "neutral" in the same way and for the same reasons that NN advocates want broadband networks to be "neutral."[26] If a central authority or (equally restrictive) a global plebiscite or collective mobilization decides what names, business models, and standards of appropriateness exist, then diversity will be narrowed, unpopular and controversial concepts or people will be suppressed, and innovative ideas will never get a chance. If ideas and applications did not have to go through a gatekeeper, there would be more freedom, diversity and innovation.

This controversy raises fundamental issues about the role of public policy in global Internet governance and about ICANN's status as a policy making entity. Critics of ICANN as neutral technical coordinator have raised a valid question: if ICANN does not make the global public policies surrounding domain names and identifiers, then who does? National states are constrained by their territorial jurisdiction. By abstaining from enforcing policy criteria on domain-name selections and use, ICANN as neutral technical coordinator might enable activities that national states and some members of their constituencies may not like. Undoubtedly, some results will not conform to the public policy of various states. Words and concepts that are offensive to some communities in the world will be registered. Being neutral would thereby shift the burden for imposing policy constraints on internet outcomes to the national level. By so shifting the costs and burdens of regulation, a neutral ICANN tilts the playing field toward freedom as opposed to control.

24 See http://www.keep-the-core-neutral.org

25 The phrase emerged from a March 2007 paper by Michael Palage and Avri Doria (Palage and Doria, 2007) criticizing efforts by governments to intervene in consideration of the .xxx top level domain proposal. See: http://www.keep-the-core-neutral.org/files/keep_core_neutral.pdf

26 The US public interest group Free Press, and several other Net Neutrality advocacy groups have endorsed the "Keep the Core Neutral" campaign.

Honest advocates of NN must recognize that this criticism is true – and make the case that it is a *feature*, not a bug. The key point is that *neutrality is itself a public policy* of the highest order. It is a global principle that seeks to optimize the relationship between a central governing authority and the end users of the Internet. The whole point of neutrality arguments is that on the whole, the social and economic benefits of freedom of action at the individual user level outweigh the costs and problems. The crimes, misbehaviors and inconveniences that are inevitably associated with neutral, rule-based enabling of individual initiative are best dealt with after the fact, on a case-by-case basis. If that freedom and openness are stifled or suppressed, a lot of babies get thrown out with the bath water. Pre-emptive, *ex ante* controls are bound to block many things of value, not just the bad things, and there is no way to recreate the beneficial effects of openness by regulation from the center. So there is a strong public policy rationale for neutrality at the core, and as noted above, it is very similar logically to the rationale for Internet neutrality.

If opponents of this principle complain that neutrality advocates are "imposing" liberal values on the world as a whole, we can readily admit that this is in some sense true. *But the only alternative is to impose some other, more restrictive philosophy on all of us at the global level.* Any debate about which flavor of top-down control should be adopted globally would certainly be uglier and more divisive than local adaptations to liberal freedoms are likely to be. The overriding fact is that the Internet is globalization incarnate, and as such it forces us to adopt some global rules. Precisely because they are global in scope, those rules had better be as minimal, neutral and enabling as possible.

This does not mean that there is no role for ICANN or for public policy in the selection of new top level domains. It simply means that the coordinator of the name space refrains from imposing its own judgment on what is valuable and "moral," and refrains from discriminating between TLD applications based on their content or the identity of the person advancing the application. Legitimate policy criteria should be uniformly applied to all applications in a nondiscriminatory manner. Those kinds of standards would allow applicants to have the same ability to easily create and pursue ideas that NN advocates seek in regards to broadband access.

c) Trade Access and NN

There is a third area where the concept of NN has transnational implications. The Internet famously creates a global space for the exchange of digital products and services. In the trading of informational goods and services, distance and national boundaries become irrelevant to the accessibility of the products. For obvious reasons, a NN policy that promotes the right of end users to achieve universal, nondiscriminatory access to Internet resources has important trade implications. (Wu, 2006) Given the ease with which the Internet's architecture facilitates global connectivity, there is no reason why a right to access Internet resources should end at a country's borders. This suggests that governments should not define policies that discriminate between Internet resources based on their country of origin. In a global information economy, there is a close connection between a neutral Internet and free trade in digital goods and services. A concept of NN, therefore, could play a role in aligning the WTO regime with the global Internet governance regime.

Major e-commerce providers such as eBay and Google are already linking NN concepts to trade norms and perceiving it as a global governance issue. In its comments before a US Federal Trade Commission hearing on NN, eBay wrote:

> At eBay we provide a global marketplace. We are constantly battling efforts by governments to restrict or constrain the desires of their citizens to participate in this marketplace. We don't want the U.S. government to send the signal that it is okay to introduce discrimination into the Internet, because we have a realistic sense of how some governments will interpret that signal. Abandoning neutrality in the U.S. would be an open invitation to other countries to do the same – and would undercut any efforts by our trade negotiators to prevent discrimination against U.S. companies.[27]

The search engine giant Google, which has also been a supporter of the net neutrality movement in the United States, has explicitly raised this connection, framing censorship as a trade issue. Google's invocations of trade came after it and other U.S. high-technology firms were subjected to severe criticism by advocacy groups and the U.S. Congress for collaborating with China's censorship and human rights abuses.[28] In explaining its decision to establish a censorship-compliant *Google.cn* site, the company noted that persistent and systematic Chinese government efforts to censor *Google.com* made its service slow and unreliable, and that that effect "appears to have been a major – perhaps the major – factor behind [Google's] steadily declining market share" in China.[29] Google concluded its testimony with the following call to action:

> The U.S. Departments of State and Commerce and the office of the U.S. Trade Representative should continue to make censorship a central element of our bilateral and multilateral agendas. …At the risk of oversimplification, the U.S. should treat censorship as a barrier to trade, and raise that issue in appropriate fora.[30]

Some commentators have dismissed Google's connection of trade, an economic issue, and censorship, a political issue. Standard approaches to national sovereignty would indeed suggest that states have the right to regulate content within their own territories in accord with their own local norms. But in a globalized and digitized information economy, the line between politically motivated censorship policies and the erection of barriers to trade in digital goods and services is extremely thin. Many countries can and will use standards of taste, "public morals," appropriateness and culture to erect barriers to external digital products. Law professor Tim Wu notes, "the textual support [in the GATS agreement] for the blanket

27 See eBay's full comments at http://www.ftc.gov/os/comments/broadbandwrkshop/527031-00053.pdf

28 Steven Foley, "Google ranks censorship as a trade issue," The Independent (London), 16 February 2006.

29 "According to third-party estimates, Baidu has gone from 2.5% of the search market in 2003 to 46% in 2005, while Google has dropped to below 30% (and falling). …Part of this has been due to improvements in Baidu's services and a major marketing campaign (funded by the proceeds of its successful IPO in the US), but the leading cause seems to be the Chinese users' annoyance at the persistent slowness and unreliability of Google." Testimony of Google Inc. before the Subcommittee on Asia and the Pacific, and the Subcommittee on Africa, Global Human Rights, and International Operations Committee on International Relations, United States House of Representatives February 15, 2006, Elliot Schrage, Vice President, Global Communications and Public Affairs, Google Inc.

30 Ibid.

claim that censorship is exempt from WTO scrutiny is not very strong. The limits on use of the public order exception are suggested in footnote 5 of the GATS, which says 'The public order exception may be invoked only where a genuine and sufficiently serious threat is posed to one of the fundamental interests of society'." A norm of NN creates a presumption in favor of universal access to Internet resources.

The United States itself offers a prime example of how local morality standards can clash with net neutrality norms, and how trade regimes can be used to pursue net neutrality goals. The US bans online gambling and claims that it is necessary to protect "public morals" and "public order," just as the Chinese claim that their censorship practices are needed to protect public order. The US gambling ban, however, was challenged under WTO rules by the small country of Antigua, which had established itself as a haven for online gambling services. (Wunsch-Vincent, 2006) Antigua claimed that the US ban on Internet-supplied gambling violated the sections of the General Agreement on Trade in Services guaranteeing market access because it discriminated against them on the basis of national origin. The central fact supporting Antigua's case was that the US permits Internet-enabled gambling on horse races domestically. An impartial WTO panel ruled that the US laws against online gambling were not necessary to protect public morals. This was reversed on appeal, but the contradiction between the online gambling ban and the U.S. Interstate Horseracing Act was upheld by both the initial panel and the appellate body. The WTO gave the U.S. a year to modify its laws. The US has failed to comply with this order. Horse-racing is too deeply embedded in the US economy for the government to simply order it out of existence, and thus the US ban on online gambling is de facto discriminatory.

The content-trade disputes recall the "cultural exception" debates over trade in traditional audio-visual services between the U.S. and Europe. Irrespective of the merits of that debate, one can at least concede the feasibility of enforcing cultural protection barriers in traditional motion picture and television content markets. But any attempt to extend screen quotas and "cultural exceptions" to the global Internet, with its plethora of web sites, downloadable music and video clips seems *prima facie* to be a nightmarish and intrusive form of regulation. Extending traditional forms of culturally-motivated content regulation to the Internet would constitute a major assault on the principle of network neutrality and its end-user-centered ethic of open access to Internet resources.

To conclude, at a minimum NN principles could be used in a trade context to attack policies of private or public network operators with market power who used vertical integration strategies to exclude foreign Internet content and service providers from their domestic markets. At best, it could be extended to also put pressure on state blocking, censorship and cultural policies that have the effect of privileging local suppliers and serve as a political cover for economic objectives.

4. Conclusion

The goal of this paper was to make the case for NN as a globally applicable principle for Internet governance. The ability of the Internet protocols to facilitate universal interconnection of data networks has produced tremendous social, economic and political benefits. Due to the mismatch between the global connectivity of the Internet and the territorial jurisdiction of states, however, the universality of

the internet is increasingly threatened by efforts to carve it up into more controllable national networks. That threat comes from both commercially motivated network operators exerting vertical leverage over Internet resources, as well as state actors asserting dysfunctional and obsolete forms of sovereign control over communications and information. The principle of NN stands as a beacon for an alternative principle of global governance of the Internet, one that prioritizes the value of open and universal communication and information.

The paper recognized that NN is at the present time a normative principle, not a well-defined policy. As a principle, the ideal of NN can provide guidance and direction to advocacy groups, industry and government policy makers across a wide variety of global internet governance issues. It is more specific than Article 19 and other broad declarations of a human right to freedom of expression, yet more general and widely applicable than a specific set of laws or regulations.

It is obvious that the principle of NN comes into direct conflict with a number of entrenched and powerful vested interests. Commercial suppliers of vertically integrated Internet services will resist such a principle, although that opposition can be weakened by detaching NN advocacy from the chimerical goal of opposing any differentiation of bandwidth. But the strongest opposition is likely to come from the combination of national governments and private economic interests seeking trade protectionism, and from national governments or third parties attempting to maintain their power to filter and censor the Internet. Governmental and private actors can be expected to praise the principle when it suits their interests and to abandon it when it does not. That means that the principled actors in global civil society must bear the primary burden of advancing the principle. Like any international institutional change, a movement toward global NN will be slow and fitful, with many steps backwards. But principles and norms are intended to provide a direction to the global dialogue, and to give advocates something to fight for.

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