COMMENTS OF
THE CONSUMER FEDERATION OF AMERICA
on the
TRANSITION OF THE INTERNET ASSIGNED NUMBERS AUTHORITY

CONTENTS

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SUMMARY

Conclusions and Recommendations

The Consumer Federation of America (CFA) is pleased to have the opportunity to comment on the transition of basic Internet Assigned Numbers Authority (IANA) functions to expanded oversight by organic, Internet institutions. For over 25 years, CFA has been involved in the analysis of the Internet and been a vigorous advocate for an open Internet (see Appendix A). As we anticipated in a January 1990 paper, the Internet has become a remarkably dynamic engine of progress and an extremely consumer and citizen friendly space.

Our experience and analysis lead us to conclude the following.

- The conditions established by the National Telecommunications Information Administration (NTIA) to govern the transition will ensure the continued functioning and responsible oversight of the IANA functions.
- The governance structure proposed by the Internet institutions will meet the NTIA requirements, as long as both aspects – the stewardship role of the IETF (Internet Engineering Task Force) and the reform of the internal governance of Internet Corporation for Assigned Names and Numbers (ICANN) – are fully implemented as proposed.

This is a critically important moment to implement the IANA transition and accomplishing a smooth transition in the time frame laid out by NTIA is extremely important to achieve these and other beneficial outcomes. Several additional benefits beyond the specific goals set out by the NTIA will be realized by a smooth transition.

- The condition proposed by the NTIA of not having government-led oversight over the IANA functions will advance the broad and important principle that governments should not seek to manipulate Internet architecture for policy purposes.
- The proposals in their current form strengthen the unique form of Internet governance not only by bringing a core Internet operational function under its authority, but also by reforming ICANN to add Internet governance principles to its structure
- The governance structure proposed by the Internet institutions develops a model that may have wider uses as the digital economy expands by building a structure that can bring different types of organizations into cooperative relationships under the broad Internet governance principles.
- The proposals focus squarely on the oversight of the operational functions and avoid getting into policy issues. While architecture and operational choices have policy implications, we are convinced that the Internet will suffer severely if architecture becomes a major instrument of policy. Defending the independence of the technical design and operation of the Internet from narrow policy choices in the transition is extremely beneficial.

These potential improvements in the governance of the Internet come at a crucial moment in its development. The digital mode of production is passing through what we call a "quarter life crisis," a period that others have called the "turning point" or "critical juncture." This is a period in which a dramatically successful technological revolution must develop the institutions

to guide the full deployment of the dominant technology. The adaptation of the successful institutions to deal with wider tasks, while preserving and extending the principles on which that success was based, is crucial. Our analysis shows that the proposed IANA transition, if fully implemented as proposed, is an important step in the right direction.

SUMMARY OF THE ANALYSIS

The Internet Resource System

We base these conclusions on a quarter of a century of detailed analysis of the factors that contributed to the success of the Internet and the ways in which the proposed transition affects those factors. We view the Internet as a resource system – in fact the focal core resource system of the digital mode of production, which is why its smooth functioning is so important. The premise of the analysis is that resource systems succeed by organizing users and uses into coherent structures that allow the resource to be developed and utilized by the members of the community. The resource system is a structure composed of rules that stipulate who can do what, and a governance structure that develops and enforces the rules, as summarized in Table ES-1 in the form of 10 challenges (questions). Within the space defined by the rules, we find participants (users), who are allowed to conduct activities (uses) that exploit the resource (units) subject to monitoring (information) and control (enforcement), which includes conflict resolution and sanctions.

TABLE ES-1: THE STRUCTURE AND FUNCTION OF A RESOURCE SYSTEM

How does the resource system come into existence: Constitutional rules govern the way the overall resources system is constituted, particularly how collective choice rules are defined.
How can the operation of the system adapt? Collective choice rules embody the procedures by which the operational rules are changed.
How does the system work? Operational rules govern the activities that take place within the borders of the resource system.
How are users awarded rights? Boundary rules specify how *participants (users)* enter or leave their positions.
Who gets to use the resource and who oversees it? Position rules associate participants with an authorized set of actions (*uses*).
How is the resource measured and controlled? Aggregation rules specify the *transformation function* to map actions into outcomes (*Units*).
How are users allowed to exploit the resource? Authority rules specify which *sets of actions* are assigned to positions (*units*) and how those actions will be overseen (*enforcement*)
How do actions impact the resources and other users? Scope rules specify the *set of outcomes* that may be affected.
What are the incentives, taxes and fines that elicit proper behaviors? Payoff rules specify how *benefits and costs* are required, permitted, or forbidden in relation to players, based on the full set of actions taken and outcomes reached, as well as how the provisioning and maintenance of the resource system will be provided for..
What flow of information best encourages, manages, and distributes the resources? Information rules specify the *Information* available to each position for purposes of *monitoring* and *enforcing* compliance with rules.

Source: Based on Elinor Ostrom, *Understanding Institutional Diversity,* chapters 7 and 9.

We have shown that the Internet exhibits a large number of characteristics that are associated with successful resources systems. The Internet is a resource system in which anyone can do anything as long as it comports with the Internet protocols (IP). The protocols create a flow of resource units continuously with no restrictions on content. Users have the opportunity to design their uses or operate their private networks in ways that can deal with the capacity of the system to handle traffic. Decentralized, user-based, local knowledge is allowed to play a large role in the resource system, an important characteristic that enables it to produce large benefits and scale. The success of the system encourages the community of users to invest substantially in its maintenance, provisioning and expansion.

In the beginning and for a significant period of development, the architects and users of the Internet were a fairly small, homogeneous set of engineers who shared norms, values, and a pragmatic problem-solving world-view. The perceived benefits expected from cooperation were quite large and non-commercial. The essential principle of the Internet was to allow local autonomy around a core set of communications protocols, without dictating the structure and incentives within local networks. The protocols were designed to resolve conflicts over resources in a low-cost manner. The nature of the users and the resources system made it "easy" to decentralize decision-making and rely on distributed knowledge and assets to build the system.

An environment that promoted cooperation and decentralization gave rise to the distinctive model of Internet governance. The foundation of the model is direct democracy in which each member of the community has the right to participate in the decision making process. Moreover, membership in the community is entirely open. The fact that the base of the model is a highly participatory form of direct democracy does not mean there is no structure to decision making. There are rules of discussion and choice among alternatives striving toward demonstration of consensus. Positions of authority exist that have responsibility for taking final decisions or implementing them. A selection process to fill those positions is clearly articulated, subject to rules of openness and transparency. Accountability to the community is effected through the transparency of discussion and decision making and a relatively easy process of recall.

Ultimately, the success of the Internet rests on the economic benefit it delivers to its users and society with the cooperative/collaborative nature of the system. We have argued that the Internet provides solutions to (reduce the severity of) several classic economic dilemmas: provisioning and maintaining a common-pool resource, delivering a public good with massive (positive) externalities and reducing transaction cost problems (asymmetric information plus others) in a way that allows a much closer fit between supply and demand. The Internet at the heart of the digital economy constitutes a fundamental shift in the mode of production based on a dramatic expansion of the benefits of cooperation and collaborative production. The importance of the Internet resource system is magnified by the fact that communications and information flow are increasingly central to economic activity and have long been at the heart of important political and social processes.

The IANA Transition

We believe that the structure proposed for the IANA transition affects almost every one of the rules and elements of the Internet resources system in a positive manner (see Table ES-2). First, the key elements that affect the users of the resource systems – users, units, uses, outcomes, are unaffected by the transition. There is a strong commitment to preserving the functioning of the Internet as is. Second, the decision of the U.S. government to step out of its stewardship role and transition to independent oversight is a constitutional choice decision. One can argue that the condition that oversight not be government-led is both a constitutional choice and a collective choice decisions. Another key collective choice decision is the reliance on the multi-stakeholder governance.

This approach to the oversight of the IANA functions is consistent with Internet

governance model and the general approach to oversight of all other Internet function. It creates greater consistency across all of the critical operational functions of the Internet.

TABLE ES-2: THE HIGH LEVEL IMPACT OF THE PROPOSED IANA TRANSITION

CONSTITUTIONAL RULES	COLLECTIVE CHOICE RULES	OUTCOMES
TERMINATE STEWARDSHIP *ICANN By-Law changes*	MULTI-STAKEHOLDER GOVERNANCE NON- GOVERNMENT LED *By-law Amendment process*	PRESERVE FUNCTION ***Preservation of Function***

OPERATIONAL RULES

BOUNDARY	INFORMATION	AGGREGATION
OPENNESS *Institutional Reorganization*	TRANSPARENCY *Transparency policy*	unchanged

POSITION	PARTICIPANTS (user)	INFORMATION (monitor)	CONTROL (enforce)
			ACCOUNTABILITY
New committees PTI within ICANN IFR Review Function Customer Standing *IFR Review*	Customers *Sole Member* *Multi-stakeholder intensified*	Performance Metrics Annual Update	Performance Reviews *Budget and Plan oversight, Leadership by Ombudsman* Review Committee

AUTHORITY RULES	ACTIONS (uses)	NET BENEFTIS/COSTS (units)
Reviews Complaints B*oard appointment & removal*	Complaint paths *Recall, Reconsider*	SCOPE RULES Reviews

Positive Externalities

Selective & strategic delegation of responsibility to self-organized, self-governing policy sectors.	Institutionalizing self-organizing policy sectors would serve to legitimize the collective in these self-governing communities	Holding accountable the sectors and powerful actors by establishing effective monitoring and accountability

Principle of Non-Governmental Interference in architectural decision	Principle of separation of architecture and policy, to the greatest extent possible

LEGEND:
ALL CAPS & UNDERLINED= ANALYTIC FRAMEWORK,
SMALL CAPS = NTIA
Plain text Underline = IETF/RIR;
***Italics = ICANN*,**
boxes = positive externalities (beneficial, unintended consequences of the transition process and proposals

Because the Internet Engineering Task Force (IETF) and the Regional Internet Registries (RIRs) are built on the Internet governance principles their primary adaptation is to extend their authority to the IANA functions. Thus, we observe an expanded relationship between the IETF and ICANN. This involves a series of reviews and audits and a new contractual relationship between ICANN and the RIRs to ensure the functions are being properly provided and managed. These IETF and the RIRs can be said to take on (replace) the stewardship role.

The proposals for reform of ICANN strengthen the confidence in its oversight of these functions by amending its bylaws (constitutional and collective choice decisions) to incorporate fundamental principles into bylaws and to strengthen the process for amending the bylaws. With new principles raised to a higher level in the bylaws and a wider process for challenging actions, the principles should be binding on ICANN behavior.

NTIA has also set several conditions that affect important operational rules – openness (a boundary issue), transparency (an information and control issue), and accountability (a control/enforcement issue). The IETF and the RIRs also have formally identified roles in these oversight functions. ICANN undergoes two transformations in its internal operational. First a new subsidiary, designed according to the Internet governance model, is created within ICANN – the Post Transition IANA (PTI) – for the purpose of managing the IANA functions. Second, ICANN's internal structure is modified to promote more participation and ensure more oversight. Many more decisions are subject to reviews by external committees constituted by the community and complaints that can be made by individual members of the community. The potential targets of the potential complaints are defined broadly, with specific IANA functions explicitly covered. The ability to recall individual members of the board or the entire board is also expanded, as is oversight over the budget and plans as they affect the IANA functions.

Table ES-2 makes the interdependence of the transfer of stewardship to organic Internet institutions and the reform of ICANN clear. Both are necessary to achieve the desired outcome. Without the reform of ICANN, the transfer of stewardship would not be effective. With both proposals implemented, the role of multi-stakeholder models would be expanded. The Internet institutions would exercise close review of the IANA functions that ICANN implements. The ability of the community to participate in the ICANN IANA functions would expand through complaint and recall processes. We see these changes as not only meeting the conditions set out by NTIA, but also enriching the Internet's institutional structure at a critical juncture of its development.

Our analysis rests on the broad principles and macro-structures that we show are the foundations of the success of the Internet. There are many details in the proposals that should and will certainly be debated by the Internet community. Our advice is to ensure that the details comport with the broad principles and macro-structure. However, **if the proposals are implemented as outlined,** we believe that this is a case where **the devil is not in the details.** The Internet principles and the structure proposed for the transition would be strong enough to ultimately override concerns about any details. Indeed, it must be recalled that the Internet has developed according to a pragmatic approach (rough consensus and running code) in which norms, guided by strong basic principles, are worked out in practice. Those norms can only grow if ICANN is reformed in a way that subjects it to the principles of the Internet governance model of direct community involvement.

I. INTRODUCTION

A. CFA ANALYSIS OF THE INTERNET AND ITS GOVERNANCE

The Consumer Federation of America (CFA) is pleased to have the opportunity to comment on the transition of basic Internet Assigned Numbers Authority (IANA) functions to expanded oversight by organic, Internet institutions and the reform of Internet Corporation for Assigned Names and Numbers (ICANN). We view this as an opportunity to take a major step forward toward ensuring the success of the Internet as the dominant, global communications network and the core resource system of the digital economy.

For over 25 years, in academic articles, research reports, legislative testimony and regulatory filings CFA and its staff have been vigorous advocates for an open Internet (see Appendix A). As we anticipated in a January 1990 paper,[1] the Internet has become a remarkably dynamic engine of progress and an extremely consumer and citizen friendly space.

Our earlier analysis led us to conclude that the success of the Internet, as one of the pillars of the digital revolution, rests on a combination of unique technologies and institutional arrangements that exist in an expanding space between the market and the state. The Internet is built on a uniquely open protocol developed and managed through a multi-stakeholder process that strives for consensus in a participatory, direct democratic process. The expansion of this new space enriches and strengthens the institutional fabric of society, while magnifying and re-ordering the important roles and functions of both the market and the state. Two decades later, we conducted an analysis of the challenges that the Internet faces as it becomes the dominant means of communications and commerce in the digital mode of production.[2] Based on the analysis of the success of the Internet, we developed principles and recommendations for the expansion of the Internet governance. The conditions stipulated by the National Telecommunications Information Administration (NTIA) for the transition and the proposals by the Internet institutions, comport with those principles.[3]

The importance of the IANA transition goes well beyond the technical questions of managing and preserving the smooth operation of the Internet, a goal on which there is virtually unanimous agreement. We view the IANA transition as an opportunity to expand and strengthen the governance model at a key moment in the development of the Internet. The IANA transition provides an ideal opportunity to advance the Internet as the digital revolution matures. The criteria developed by the NTIA and the response of the Internet institutions can support and further the development of the Internet in important ways:

- Re-affirm the commitment to
    - open communications networks and protocols and
    - the unique, multi-stakeholder model as the vehicle for Internet governance

[1] Mark Cooper, Expanding the Information Age for the 1990s: A Pragmatic Consumer Analysis, January 11, 1990

[2] Mark Cooper, "Why Growing Up is Hard to Do: Institutional Challenges for Internet Governance in the "Quarter Life Crisis of the of the Digital Revolution," Journal on Telecommunications and High Technology Law, 2013. 11(1). (hereafter, (Quarter-life Crisis"), http://www.jthtl.org/content/articles/V11I1/JTHTLv11i1_Cooper.PDF

[3] The proposals analyzed here were developed by working groups formed by the Internet community, the IANA Stewardship Transition Coordination Working Group (guided by the Internet Architecture Board, and chaired by two executives from the Internet Engineering Task Force) and the Cross Community Working Group on Enhancing ICANN Accountability.

- Establish the structural principle and normative condition that
    - governments should not determine Internet architecture or
    - impose social policy decision on architecture.
- Affirm the principle that
    - architecture should be as independent of policy as possible, and
    - remain neutral on social policy issues, while supporting the widest possible array of policy alternatives to address social issues.
- Establish an approach in which different types of institutions can co-exist and coordinate their operation around the core principles of Internet governance.

We purposely choose the word **adapt**, rather than reform, to describe the overall process because reform is frequently associated with some sort of failure – "**Reform** means the improvement or amendment of what is wrong, corrupt, unsatisfactory."[4] The characterization grounded in failure does not apply as a general proposition to the Internet and the digital revolution. This is a case where the need for change derives from remarkable success, not failure, because the dramatic growth of the resource system strains its own governance institutions and because the resource system has expanded so rapidly and penetrated so deeply into so many aspects of social life that it is having a huge impact on society. The fact that the driving force for change is a broad pattern of success, rather than failure, does not make it less urgent, but it does create a very different orientation than reform driven by failure – the challenge of preserving and extending what is working well is prominent, if not paramount.

While adaptation is the watchword for the organic Internet institutions, reform of ICANN is a necessary as part of the transition to bring it more into conformance to the central principles of the Internet governance model. In these comments we apply the findings of our earlier analysis to the institutional structure proposed for the transfer of the IANA functions. We show that the principles that NTIA has laid down for the transition of the IANA functions are a subset of the broader principles outlined in our earlier analysis. The proposals of the Internet institutions meet those conditions, if fully implemented, meet those conditions.

B. OUTLINE

The comments are divided into two Section. Section II begins with a brief description of the unique Internet governance model, followed by a description of the IANA transition in terms of the conditions established by NTIA and the proposals of the Internet institutions in response. It then presents an evaluation of the proposals in terms of the model we have developed to describe the success of the Internet as a resource system and the challenges it faces as the digital mode of production matures. In Section III we show why the transition will preserve and promote the success of the Internet. We do so by summarizing the framework we developed earlier to analyze the success of the Internet.

4. Reform, Wikipedia, http://en.wikipedia.org/wiki/Reform (last modified Sept. 19, 2012, 9:24 PM).

II. THE TRANSITION OF IANA FUNCTIONS

A. THE ORGANIC INTERNET GOVERNANCE MODEL

One of the primary benefits that we see in the transition of the IANA functions is the strengthening of the commitment to the Internet governance model. We use the term Internet governance model to refer to a specific and unique approach to a multi-stakeholder global governance institutions.

The foundation of the model is direct democracy in which each member of the community has the right to participate in the decision making process. Moreover, membership in the community is entirely open. The fact that the base of the model is a highly participatory form of direct democracy does not mean there is no structure to decision making. There are rules of discussion and choice among alternatives striving toward demonstration of consensus. Positions of authority exist that have responsibility for taking final decisions or implementing them. A selection process to fill those positions is clearly articulated, subject to rules of openness and transparency. Accountability to the community is effected through the transparency of discussion and decision making and a relatively easy process of recall.

This is quite different from the traditional form of representational democracy that has been widely practiced over the past couple of centuries. In that model, a subgroup of the community – sometimes defined by geography, sometimes by shared attributes like economic roles (e.g. business, labor) or institutional affiliation (e.g. academia, civil society) – selects representatives who participate in the decision making process, presumably to reflect the interests of their group. Much of the work of the representational democracy tends to be carried out through voting, with different types of decisions subject to different thresholds (majority, supermajority). Given the representational basis and electoral mechanism, a great deal of effort goes into ensuring fairness of participation in the selection of representatives and the decision process.

These are models of democracy with different strengths and weaknesses. No model is pure and some elements of different approaches to democratic decision making can often be found within a single institution. We believe the Internet governance model is preferable because it exhibits profoundly democratic values, grew organically within the community and has been effective at ensuring the smooth functioning of the communications protocol through a remarkable period of growth. Therefore, it is important to rely on it and adapt it and adapt key Internet governance principles to the ever changing and expanding Internet resource system. Effective reform of ICANN is particularly important in this regard.

At the same time, in the real world of an extremely complex, rapidly expanding global network, the key characteristics of the Internet governance model – direct democracy, open participation, transparency, consensus, accountability – are relative not absolute. Directionality of change is crucial. The adaptation of institutions to emerging challenges should preserve their basic characteristics, while striving to improve and move the institution toward the ideal governance models. The NTIA and the proposals put forward by the Internet institutions adopt this approach. As proposed, they expand the scope of the existing organic Internet institutions and infuse the core principles of the Internet multi-stakeholder governance model into other

institutions involved in the management of the Internet or the execution of important Internet functions.

B. THE NTIA AND THE IANA TRANSITION

After almost two decades of filling a formal "stewardship" role over ICANN, which was setup as a temporary measure to transition to oversight by the Internet community, the NTIA has proposed to complete the process. The NTIA has presented a series of principles for the transition to ensure the smooth functioning of the Internet by extending the Internet governance model to the IANA functions.[5]

- Outcome: Ensure the continued success of the Internet by continuing its smooth functioning and scalability
- Governance: Apply the traditional Internet governance model to all of the IANA functions, including
    - Multi-stakeholder processes
    - Openness and transparency
    - Accountability
    - Participation
- Independence
    - Not government-led

The NTIA has set these as the condition the transition must meet for it to step out of its stewardship role. We agree that if these conditions are satisfied, it would be appropriate for the U.S. government to do so. We also conclude that the institutional infrastructure proposed by the Internet community goes well beyond the minimum that the NTIA demanded, strengthening the Internet governance structure in important ways. To appreciate this, and properly evaluate the NTIA conditions, these comments address issues beyond the simple compliance with the NTIA conditions.

The answers to four fundamental questions provide critical context for evaluating the proposals.

- What is the nature of Internet success?
- How is it related to the Internet governance model?
- Why insist on independence from governmental oversight?
- Why resist efforts to micro-manage Internet architecture in pursuit of specific policies in the context of the IANA transition?

Answering these broader questions in these comments by providing empirical evidence grounded in the history of the Internet serves two functions.

[5]NTIA Announces Intent to Transition Key Internet Domain Name Functions," March 14, 2014, http://www.ntia.doc.gov/press-release/2014/ntia-announces-intent-transition-key-internet-domain-name-functions

- The answers can contribute to the recognition that this is good policy – i.e. the NTIA conditions are correct and the Internet community responses are adequate.
- This, in turn, can help to secure consensual support from the Internet community, which is a necessary condition for a successful transition.

C. THE PROPOSED ADAPTATION OF THE INTERNET INSTITUTIONS

The proposal put forward by the Internet community not only meet the NTIA conditions, but also enhance the multi-stakeholder process and provide a path for addressing a broad range of Internet governance issues (see Figure II-1). Proposals were also put forward to significantly reform the internal governance structure of the Internet Corporation for Assigned Names and Numbers (ICANN). The changes bring it more closely into line with the Internet governance model (see Figure II-2). We believe this new institutional framework could provide a model for many issues that entails significant global technical challenges. Full implementation of each proposal is a necessary condition for meeting the NTIA criteria; combined they are sufficient.

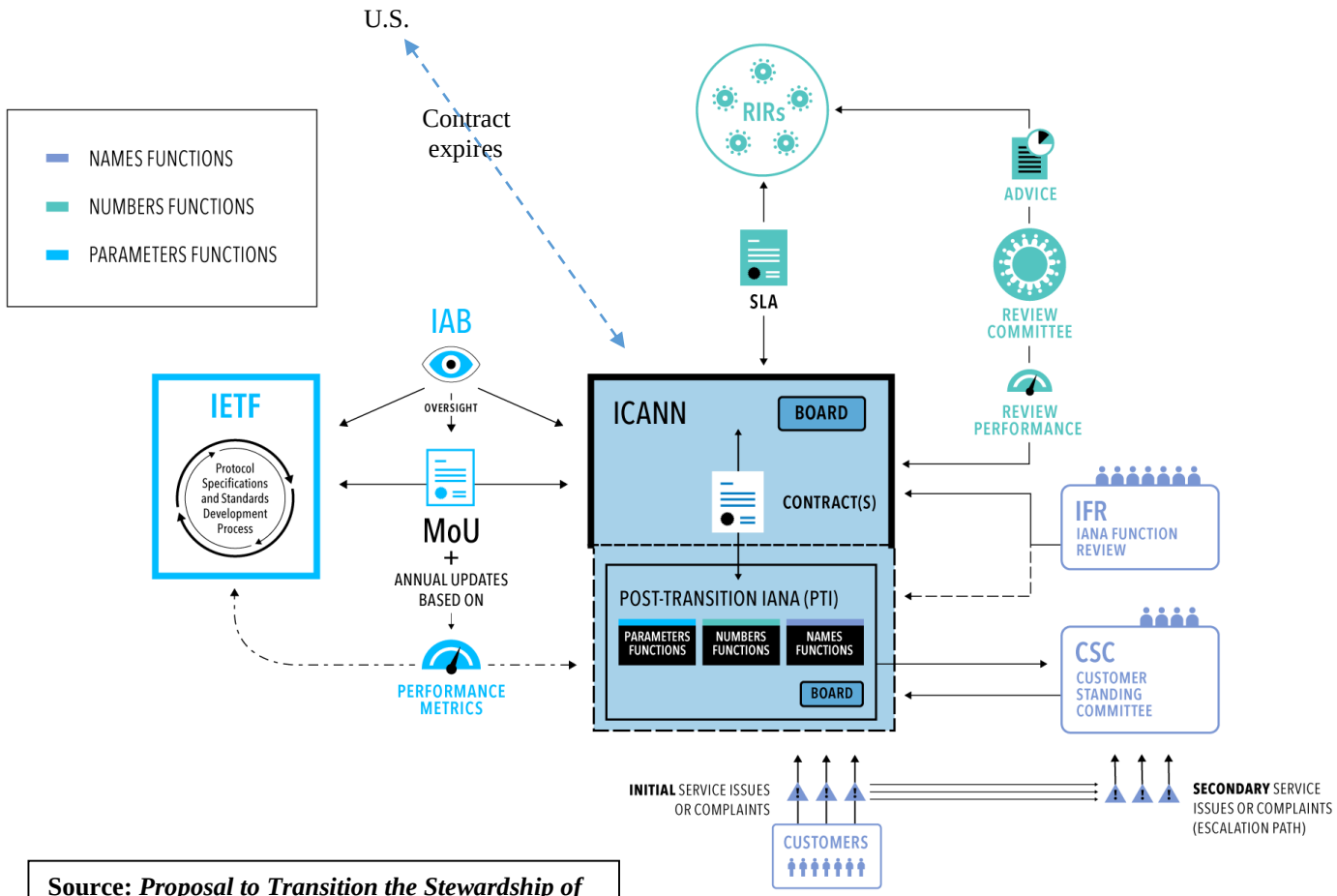
At a general level, the transition can be described as follow. The U.S. fulfills its commitment to transition the IANA functions to oversight by the Internet community by terminating its contract with ICANN. To achieve the goals set out for the transition, the Internet Engineering Task Force (IETF) strengthens its Memorandum of Understanding (MOU) with ICANN and ICANN enters into a new contractual relationship (Service Level Agreement, SLA) with the Regional Internet Registries (RIRs). Through these agreements, the IETF and the RIRs exercise significant oversight over the IANA functions for the same purpose as the U.S. stewardship.

At the same time, ICANN's internal structure must be reformed in two ways to ensure proper functioning and effective oversight in the absence of the stewardship role of the U.S. government. It must establish a new independent subsidiary, designed according to the fundamental Internet governance model (i.e. the multi-stakeholder model), to execute the IANA functions (Post-Transition IANA, PTI). ICANN must also reforms its general internal structure and operations to come closer to the Internet governance model. Absent these changes in ICANN, an alternative path may be to shift full responsibility for the IANA functions to the organic Internet institutions, which have been successful at performing the other core functions of operating the Internet.[6]

The relationships between the IETF, ICANN and the Internet community are governed by a series of review processes and evaluations incorporating many elements of the Internet governance model to ensure accountability of the responsible institutions and the continued smooth performance of the IANA function. The internal reforms and new processes reflect the nature of the Internet governance model in two ways – the prominent role played by organic Internet Institutions and the application of key Internet governance principles (e.g. direct, participatory democracy, consensus as the basis for change) across the board.

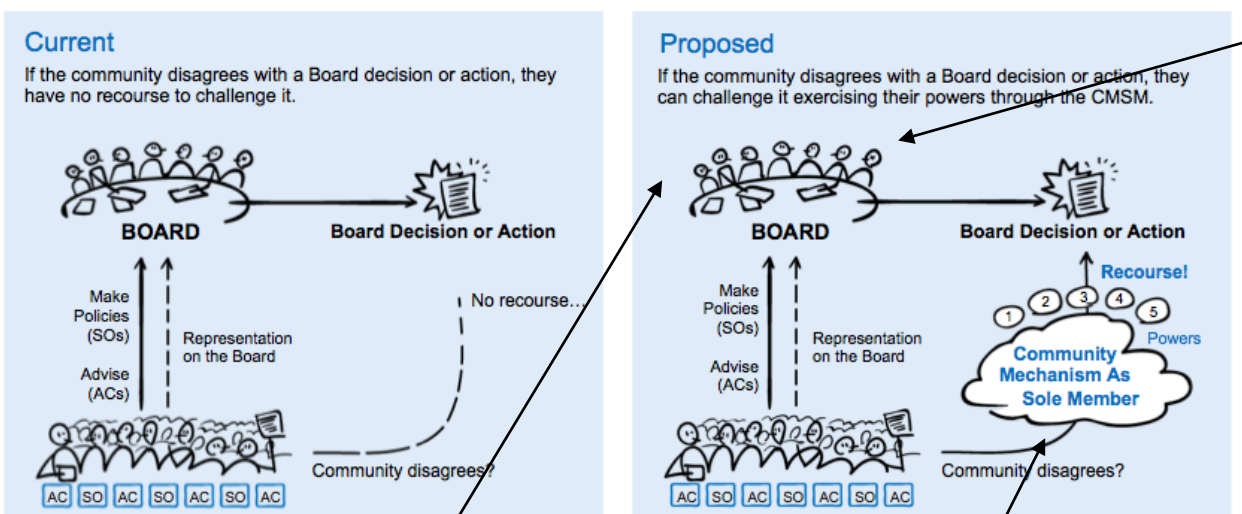
[6] The IANA Stewardship Proposal (p. 3) identifies the three IANA functions and the responsible organizations as protocol parameters (IETF), numbers (RIR) and domain names (ICANN).

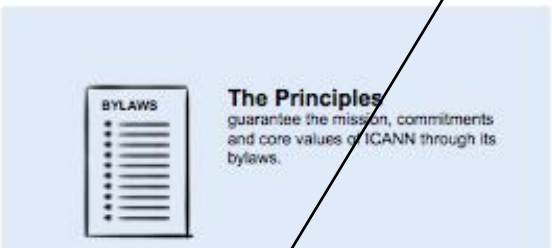
FIGURE I-1: IETF VISUAL SUMMARY OF THE POST TRANSITIONS INSTITUTIONAL TERRAIN OF IANA FUNCTIONS



Source: ***Proposal to Transition the Stewardship of the Internet Assigned Numbers Authority (IANA) Functions from the U.S. Commerce Department's National Telecommunications and Information Administration to the Global Multistakeholder Community, July 2015, graphics* p. 10.**

FIGURE II-2: ICANN PROPOSED COMMUNITY MECHANISM OF STRUCTURAL REFORM





External relations:
U.S. contract expires
Decisions Enforceable by Courts

Expanded IETF MOU
SLA with RIRs

Per IETF proposal, above

Bylaw hierarchy defined, Amendment process
Diversity principle adopted

Accountability: Budget, Plans, Bylaws, Directors, IANA functions

Reconsideration: Expanded Scope, Transparency, Due process

Source: ***CWG-Accountability 2nd Draft Proposal on Work Steam 1 Recommendations*****, August 3, 2015, p. 49 for graphics**

D. THE INTERNET AS A REMARKABLY SUCCESSFUL RESOURCE SYSTEM

The major changes in oversight of the IANA functions in the proposals were backed up with several hundred pages of detailed definitions and implementation steps. In this section we identify the specific changes intended to meet the conditions laid out by NTIA by showing which of the major structures and rules of the Internet resource system that will be affected. We do so by locating those changes within the framework of the decision rules that govern the Internet as a focal core resource system and the structure of the participatory governance model of multi-stakeholder organization that grew organically within the Internet institutions. This is based on our earlier analysis as described in Section III.

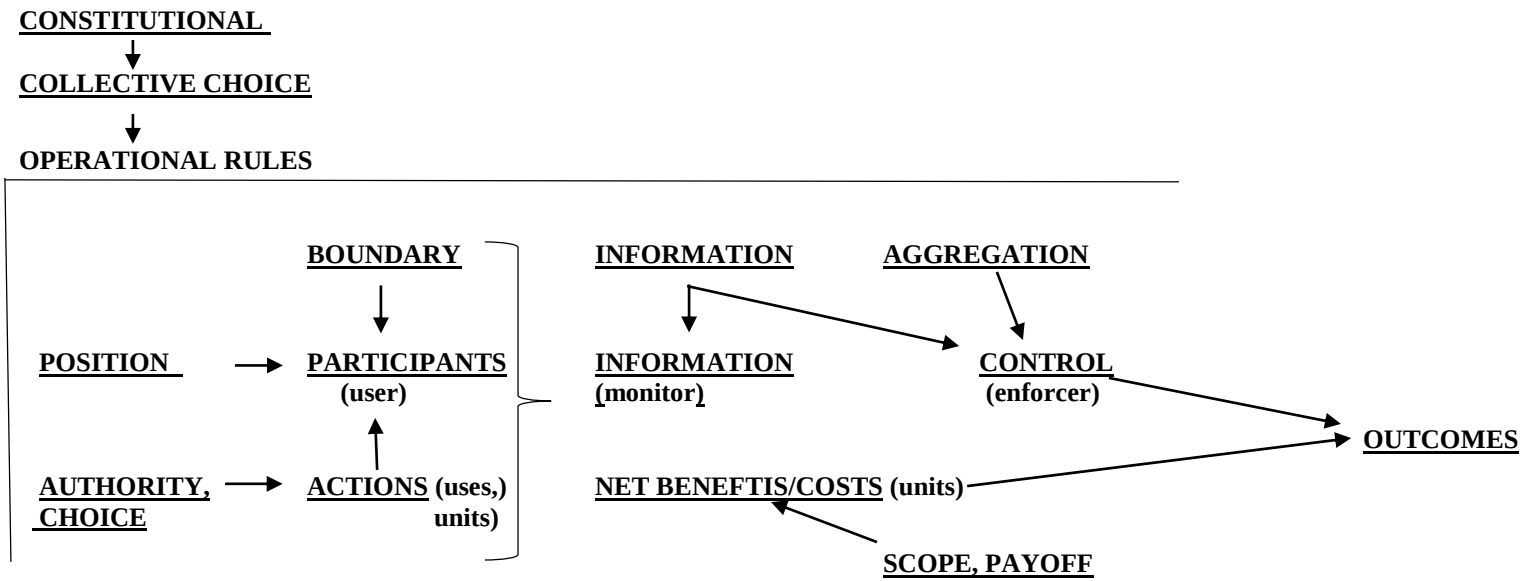
The premise of our analysis is that resource systems succeed by organizing users and uses into coherent structures that allow the resource to be developed and utilized by the members of the community (see Figure II-3). The resource system is a structure composed of rules that stipulate who can do what, and a governance structure that develops and enforces the rules. The structure responds to a series of challenges that the resource system must overcome if it is to be successful. Within the space defined by the rules, we find participants (users), who are allowed to conduct activities (uses) that exploit the resource (units) subject to monitoring (information) and control (enforcement), which includes conflict resolution and sanctions.

Our framework was developed by combining elements of the works of two Nobel laureates – Douglas North's New Institutional Economics (NIE) and Elinor Ostrom's Institutional Analysis and Development (IAD).[7] As the names suggest, North and Ostrom both emphasize the importance of institutions in economic development and success. While they recognize the important roles played by the market and the state in economic success, they both identify significant limitations of each. The institutions that they identify exist between the market and the state to help overcome significant dilemmas that neither the state nor the market can resolve on their own. In our view, the Internet exists in the space between the market and the state. Because of its location, the Internet has been a space that is friendly to innovation, economics development and democratic expression. The IANA transition expands that space.

As shown in Table II-1, the Internet exhibited most of the empirically identified characteristics that make for successful cooperation to deal with a social/economic dilemma. The Internet is a resource system in which anyone can do anything as long as it comports with the Internet protocols. The protocols create a flow of resource units continuously, with no restrictions on content. If there is congestion, the users are told to back off and each knows what needs to be sent to complete the communication. Users have the opportunity to design their uses or operate their networks in ways that can deal with the capacity of the system to handle traffic. The essential principle of the Internet was to allow local autonomy around a core set of communications protocols, without dictating the structure and incentives within local networks. Decentralized, user-based, local knowledge plays a large role in the resource system, which enables it to produce large benefits. The success of the system encourages the community of users to invest substantially in its maintenance and provisioning expansion. There may be some uses that the resource system is not well-suited for, but there are always work-arounds, and the

[7] Cooper, "Quarterlife Crisis."

FIGURE II-3: RULES AND ELEMENTS NECESSARY TO CREATE A RESOURCE SYSTEM



Purpose of Rules:

How does the resource system come into existence: Constitutional rules govern the way the overall resources system is constituted, particularly how collective choice rules are defined.

How can the operation of the system adapt? Collective choice rules embody the procedures by which the operational rules are changed.

How does the system work? Operational rules govern the activities that take place within the borders of the resource system.

How are users awarded rights? Boundary rules specify how *participants (users)* enter or leave their positions.

Who gets to use the resource and who oversees it? Position rules associate participants with an authorized set of actions (*uses*).

How is the resource measured and controlled? Aggregation rules specify the *transformation function* to map actions into outcomes (*Units*).

How are users allowed to exploit the resource? Authority rules specify which *sets of actions* are assigned to positions (*units*) and how those actions will be overseen (*enforcement*)

How do actions impact the resources and other users? Scope rules specify the *set of outcomes* that may be affected.

What are the incentives, taxes and fines that elicit proper behaviors? Payoff rules specify how *benefits and costs* are required, permitted, or forbidden in relation to players, based on the full set of actions taken and outcomes reached, as well as how the provisioning and maintenance of the resource system will be provided for..

What flow of information best encourages, manages, and distributes the resources? Information rules specify the *Information* available to each position for purposes of *monitoring* and *enforcing* compliance with rules.

Source: Based on Elinor Ostrom, *Understanding Institutional Diversity,* chapters 7 and 9.

TABLE III-1: RESOURCE SYSTEM CHARACTERISTICS CONDUCIVE TO INTERNET SUCCESS

FUNCTIONS & RULE	DESIGN PRINCIPLES	FAVORABLE CONDITIONS
Structure and Units		
Boundary Rules Position Rules	Clarity of Membership Clarity of Resource Congruence between Membership & Resource	Size of resource system: Very large territories are unlikely to self-organize given the high cost of defining boundaries … monitoring use patterns and gaining ecological knowledge. Very small territories do not generate substantial flows of valuable products. Thus, moderate size is most conducive to self- organization.
Control Appropriation Rules Provision Rules	Fair, orderly, efficient Incentive to contribute Reflect local conditions and be congruent	Predictability of system dynamics: System dynamics need to be sufficiently predictable that users can estimate what would happen if they were to particular rules or no entry territories.
Users and Uses		
Collective Choice	Participation Power to act	When users… have full autonomy at the collective choice level to craft their own rules, they face lower transactions costs as well as lower costs in defending a resource against invasion by others. When some users of any type of resource system have entrepreneurial skill and are respected as local leaders as result of prior organization for other purposes, self- organization is more likely.
Payoff	Cost/Benefit	Users need to observe some scarcity before they invest in self-organization. Distribution of costs is proportional to benefits.
Governance		
Monitoring	Present Community Professional Monitor appropriation & condition of the resource	Due to the cost of observing and managing a system, self-orgaqnization is less likely with mobile resources. Group size is always relevant, but its effect on self-organization depends on other variables and the types of management tasks envisioned. Norms/social capital: Users of all types of resource systems who share moral and ethical standards regarding how to behave in groups they form, and thus the norms of reciprocity, and sufficient trust in one another to keep agreements will face lower transaction costs in reaching agreements and lower costs of monitoring.
Enforcement	Graduated response Accountable	Rapid, low cost arenas to resolve conflicts
Information:	Local Knowledge Flow for monitoring	When users share common knowledge of relevant system attributes, how their actions affect each other, and rules use in other systems, they will perceive lower costs of organizing.
Socio-ecological Setting		
External Drivers	Government recognition of rights to organize	The long term sustainability of rules devised at a focal level depends on monitoring and enforcements as well as their not being overruled by larger government policies... Larger scale governance systems may either facilitate or destroy governance systems at a focal level.
	Economics	Market integration may effectively remove control of a resource from a user group… external integration alters local incentives, frequently by decreasing dependence on the resource used by a community… when members are not as dependent on the resource, their welfare is not as strongly tied to cooperative behavior.
	Nested enterprise	When a resource is connected to a larger socio-ecological system, governance activities are organized in multiple, nested layers. Establishing rules at one level, without rules at the other levels will produce an incomplete system that may not endure over the long term.

Source: Michael Cox, Gwen Arnold, and Sergio Villamayor Tomas, "A Review of Design Principles for Community-based Natural Resource Management," *Ecology and Society,* 15 (4) 2010; Elinor Ostrom, *Understanding Institutional Diversity* (Princeton, Princeton University Press, 2005), p. 258); *Beyond Market and States: Polycentric Governance of Complex Economic Systems,* Prize Lecture, December 8, 2009, p. 422.

vast array of activities that it came to support swamped the things it could not do precisely because there is so much freedom for users to figure out how to get things done.

For a significant period of development, the architects and users of the Internet were a fairly small, homogeneous set of engineers who shared norms, values, and a pragmatic problem-solving world-view. The perceived benefits expected from cooperation were quite large and non-commercial. The essential principle of the Internet was to allow local autonomy around a core set of communications protocols. The protocols were designed to resolve conflicts over resources in a low-cost manner (best effort, with the end-points responsible for dealing with the quality of output). The nature of the users and the resources system made it "easy" to decentralize decision-making and rely on distributed knowledge and assets to build the system.

Over the course of the youth and adolescence of the Internet resource system, its remarkable success transformed almost every one of the conditions that facilitated Internet success. We now have a large number of much more diverse users spread over a vast geographic space creating an exaflood of much more complex and heterogeneous outputs. The complexity and heterogeneity challenge the predictability. Diversity reduces the sharing of norms. The expansion of the Internet as a communications resource system brings it into conflict with the telecommunications resource system on which it depended for its success. Commercialization changes the motivations of actors and their willingness to cooperate, leading some commercial interest to seek to completely overturn key rules. The growing social and political importance of the Internet led some government to challenge the core principle of openness. The resource system must adapt to these challenges, while preserving the core principles that drive its success.

E. ADAPTING INTERNET INSTITUTIONS FOR THE IANA TRANSITION

While the continued smooth performance of the IANA functions suggests that growth is not the direct source of the pressure for the transition of the IANA functions to Internet community oversight, indirectly it may be. The increasing quantity and diversity of traffic carried raises an increasing number of technical architectural issues that can be affected by the IANA functions. Strengthening and extending Internet governance and precluding government involvement in these architectural decisions will make them easier to deal with. Even if the U.S. government had not made the initial commitment to temporary stewardship, this would be a good moment to step out of that role to increase the legitimacy of the independent Internet governance mechanism.

We believe that the proposed initial changes meet the NTIA condition and will move global Internet governance in a very constructive direction. Ultimately, the proposals must be accepted and implemented, but given the strong set of proposal, we think the outcome will be overwhelmingly positive. Figure II-4 locates the major changes embodied in the transition in terms of the structure and rules (ALL CAPS, BOLD, UNDERLINED). We identify the source of the change, NTIA (SMALL CAPS, BOLD), IETF (bold underlined), and ICANN (*bold, italics),* as well as some positive externalities, i.e. beneficial unintended consequences of the proposed changes (boxes, plain text).

1. Fundamental Rules and Principles

This discussion starts from the top of the Figure II-4 and works toward the bottom. This reflects the hierarchy of rules that govern the resource system. The decision of the U.S. government to step out of its stewardship role and transition to independent oversight is a

FIGURE II-4: THE HIGH LEVEL IMPACT OF THE PROPOSED IANA TRANSITION

CONSTITUTIONAL RULES	COLLECTIVE CHOICE RULES	OUTCOMES
TERMINATE STEWARDSHIP	MULTI-STAKEHOLDER GOVERNANCE NON- GOVERNMENT LED	PRESERVE FUNCTION ***Preservation of Function***
ICANN By-Law changes	*By-law Amendment process*	

OPERATIONAL RULES

BOUNDARY	INFORMATION	AGGREGATION
OPENNESS *Institutional Reorganization*	TRANSPARENCY *Transparency policy*	unchanged

POSITION	PARTICIPANTS (user)	INFORMATION (monitor)	CONTROL (enforce)
			ACCOUNTABILITY
New committees PTI within ICANN IFR Review Function Customer Standing *IFR Review*	Customers *Sole Member* *Multi-stakeholder intensified*	Performance Metrics Annual Update	***Performance Reviews*** *Budget and Plan oversight, Leadership by Ombudsman* Review Committee

AUTHORITY RULES	ACTIONS (uses)	NET BENEFTIS/COSTS (units)
Reviews Complaints B*oard appointment & removal*	***Complaint paths*** *Recall, Reconsider*	

SCOPE RULES
Reviews

Positive externalities and unintended benefits of a smooth transition

Positive Externalities

Selective & strategic delegation of responsibility to self-organized, self-governing policy sectors.	Institutionalizing self-organizing policy sectors would serve to legitimize the collective in these self-governing communities	Holding accountable the sectors and powerful actors by establishing effective monitoring and accountability

Principle of Non-Governmental Interference in architectural decision	Principle of separation of architecture and policy, to the greatest extent possible

LEGEND:

ALL CAPS & UNDERLINED= ANALYTIC FRAMEWORK,

SMALL CAPS = NTIA

Plain text Underline = IETF/RIR;

Italics = ICANN,

boxes (plain text) identify positive externalities (beneficial, unintended consequences of the transition process and proposals

constitutional choice decision. One can argue that the condition that oversight not be government-led is both a constitutional choice and a collective choice. These are very high level and fundamental choices. This approach to the oversight of core Internet function is consistent with the Internet governance models and the approach to oversight of all other Internet functions. It creates greater consistency across all of the critical operational functions of the Internet.

Regardless of what one thinks of whether the U.S. stewardship was necessary or how it was executed, the current constitutional and collective choice decisions move in the right direction. They move the oversight of the IANA function in the direction of the uniquely successful model of participatory, multi-stakeholder governance that evolved organically in the Internet community. As discussed in Section III, the developments of and on the Internet since the initial decision to make the stewardship role temporary – the remarkable growth and global penetration of the Internet – support the correctness of the constitutional choice to transition to stewardship by Internet institutions.

The goals adopted by the NTIA enshrine the major aspects of Internet governance and operation, seeking to ensure its continued success and the smooth performance of the IANA functions. Key collective choice decisions include the reliance on multi-stakeholder governance and insistence that the oversight not be led by a governmental entity. Indeed, we believe the general principles of non-governmental interference is a positive externality of the transition that supports the general proposition that, to the greatest extent possible, Internet architecture should not be used to solve policy problems.

ICANN is most affected by these rule changes because it is not an organic Internet institution organized according to the Internet governance principles. As such, it needs strong oversight. Removing stewardship is the basic change that triggers the need for some alternative mechanism to ensure the proper execution of the IANA functions. The IETF/RIRs step into the stewardship role.

The Accountability Group proposal for ICANN should strengthen the confidence in its oversight of these functions by amending its bylaws (constitutional and collective choice decisions), to incorporate fundamental principles into bylaws and to strengthen the process for amending the bylaws. With new principles raised to a higher level in the bylaws and a wider process for challenging actions that are deemed by members of the community to violate the bylaws, the principles should be binding on ICANN behavior. There are no changes in the other Internet institutions at this level, since their structures already reflect the full Internet governance model. Their expanded role simply pulls new responsibilities under that model.

At this level we see two additional important positive externalities. First, the transition follows the principle of delegating decisions to direct participants and user communities (the subsidiarity principle).[8] Demonstrating the ability to adapt the core institutions in this way is an important outcome because the need for change and adaptation will not stop with or be limited to the IANA transition. As the Internet settles in as the focal core resource system of the digital mode of production, it will be asked to handle and adapt too many other changes. The first choice should be to adapt the original organic institutions. Second, successfully handling this

[8] The idea of subsidiarity is frequently associated with geographic location, i.e. local communities. On the Internet the community is defined by users, regardless of where they are physically located.

initial major adaptation will deepen the legitimacy of the Internet governance institutions and increase the confidence that they can handle the increasingly complex challenges the Internet faces. Just as the ability to find a communications protocol that allowed diverse networks to seamlessly interconnect and interoperate, the ability to find an institutional approach that allows diverse forms of organization to interoperate in the space of technical policy would facilitate the expansion and smooth operation of the Internet.

2. Operational Rules

NTIA has also set several conditions that involve important operational rules – openness (a boundary issue), transparency (an information and control issue), and accountability (a control issue). As noted earlier, ICANN goes through two transformations in its internal operational level.

First a new subsidiary is created within ICANN, the Post Transition IANA (PTI) for the sole purpose of managing the IANA functions. It is designed according to the Internet governance model.

Second, ICANNs internal structure is modified to promote more participation and ensure more oversight. ICANNs corporatist decision making structure remains in place. The membership and participation in ICANN is still based on representation of specific subgroups in the process and on the board. Voting remains the primary vehicle of participation. The increase in the participation of the community comes in the form of reviews and complaint processes. ICANN subjects many more decisions to reviews by external committees constituted by the community and complaints that can be made by individual members of the community. The potential targets of the potential complaints are defined broadly, with specific IANA functions explicitly covered. The ability to recall individual members of the board or the entire board is also expanded, as is oversight over the budget and plans as they affect the IANA functions. The elements of direct democracy and accountability to the Internet community are crucial to a successful transition.

Because the IETF and the RIRs are already built on the Internet governance principles their primary adaptation is to extend their authority to the IANA functions. Thus, we observe an expanded MOU between the IETF and ICANN. This involves a series of reviews and audits to ensure the functions are being properly provided and managed. We have a new contractual relationship between ICANN and the RIRs.

III. The Internet as a Focal Core Global Resource System and the Maturation Challenges of the Digital Revolution

In this section we briefly elaborate on several key points made in Section II, focusing on important reasons that adaptation should move in the direction embodied in the NTIA conditions and the response of the Internet Institutions. We cover four areas – economics, governance, the global nature of the Internet, and the tension between architecture and policy.

A. THE ECONOMIC BASIS OF INTERNET SUCCESS

Institutions located between the market and the state can ground their economic success (superiority) in a number of possible economic dilemmas. Ostrom has been closely associated with the debate over social organization to exploit common-pool resources and produce public goods[9] but that is far from the only economic dilemma that non-market institutions may be called on to address. North argues that the exploitation of knowledge poses a challenge that markets may not meet well and his list of challenges includes other well-known sources of market failure.

> The Western world evolved from a simple world of personal exchange to the complex interdependent world that… [e]conomic historians have typically described … in terms of growth in the size of markets until today we glibly talk about a global economy. Just how does it work? Sociologists looking empirically at information networks describe an immensely complicated communications structure that pulls the dispersed knowledge together in order to use it effectively in the growth of productivity of the modern economy. . . . It is only when that specialized knowledge can be integrated with other complementary knowledge at low cost that it is very valuable. The interconnections necessary to combine distributed knowledge effectively entail much more than an effective price system, although that is an essential prerequisite. The essential public goods, asymmetric information, and ubiquitous externalities require that institutions and organizations be created to integrate this dispersed knowledge. . . .[10]

The economic dilemma that the Internet navigates could be classified as a common-pool resource, a public good with massive (positive) externalities or a transaction cost problem (asymmetric information plus others).[11] Any of these would provide a basis for concluding that there was an economic benefit that could be captured by cooperation. Or, it can be argued that the immense power of the Internet and its remarkably quick rise to dominance reflects the fact that it addresses **all** of these perennial sources of market failure in significant ways. The importance of the Internet resource system is magnified by the fact that communications and information flow are increasingly central to economic activity and have long been at the heart of important political and social processes. Thus, the Internet provides uniquely useful solutions to several increasingly important social/economic dilemmas.

We have argued that this economic transformation is not limited to more and better ways of doing old things. The digital economy constitutes a fundamental shift in the mode of production based on a dramatic expansion of the benefits of cooperation and collaborative production and a reduction in the cost of collective action.[12] The traditional analysis of public

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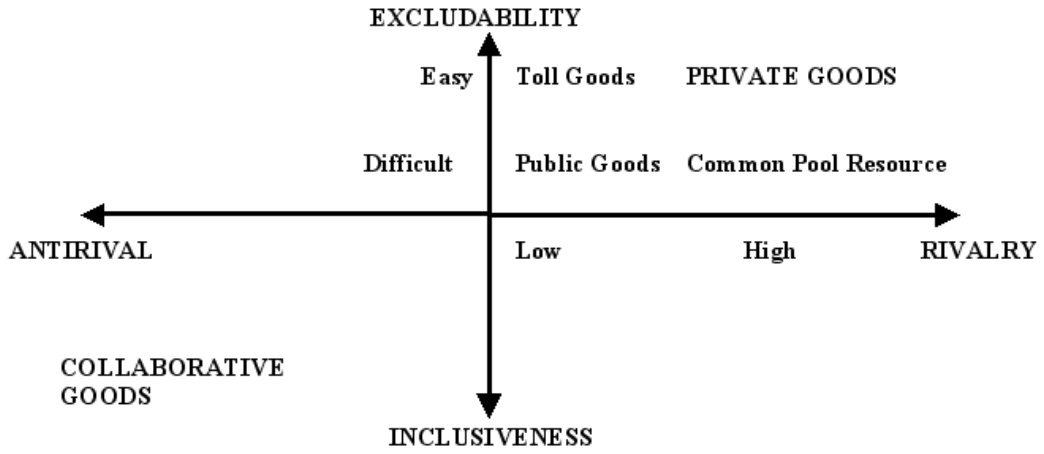
9. Elinor Ostrom, Prize Lecture: Beyond Markets and States: Polycentric Governance of Complex Economic Systems (Dec. 8, 2009), *available at* http://www.nobelprize.org/nobel_prizes/economics/laureates/2009/ostrom_lecture.pdf., at 408-09 ("Contemporary research on the outcomes of diverse institutional arrangements for governing common-pool resources (CPRs) and public goods at multiple scales builds on classical economic theory while developing new theory to explain phenomena that do not fit in a dichotomous world of 'the market' and 'the state.' . . . The market was seen as the optimal institution for the production and exchange of private goods. For nonprivate goods, on the other hand, one needed the government to impose rules and taxes to force self-interested individuals to contribute necessary resources and refrain from self-seeking activities. Without a hierarchical government to induce compliance, self-seeking citizens and officials would fail to generate efficient levels of public goods . . . .")
10. North, supra note 15, at 120-21. Elinor Ostrom, Roy Gardner and James Walker, Rules, Games & Common-Pool Resources (1994) at 193, 194, 217.
11. See, e.g., Yochai Benkler, The Wealth of Networks (2006); Brett Frischmann, An Economic Theory of Infrastructure and Commons Management, 89 Minn. L. Rev. 917 (2005). Benkler is most closely associated with the commons argument, although he has a very broad perspective; Frischmann emphasizes the externalities view.
12. Mark Cooper Mark Cooper, "Access to the knowledge commons in the digital age," Consumer Policy Review, 16:3 (2006), From Wifi to Wikis and Open Source: The Political Economy of Collaborative Production in the Digital Information Age, 5 J. on Telecomm. & High Tech. L. 125 (2006) http://cyberlaw.stanford.edu/files/blogs/From%20Wifi%20to%20Wikis%20and%20Open%20Source.pdf, From Wifi to Wikis and Open Source: The Political Economy of Collaborative Production in the Digital Information Age, 5 J. on Telecomm. & High Tech. L. 125 (2006) http://cyberlaw.stanford.edu/files/blogs/From%20Wifi%20to%20Wikis%20and%20Open%20Source.pdf

and private goods – their rivalrous nature and exclude ability – must be expanded to reflect that fundamental transformation of the economic terrain (see Exhibit III-1).

Some goods have long been recognized as non-rivalrous – utilization by one person does not preclude utilization by another – and non-excludable – the benefits flow widely and it is difficult to exclude some from enjoying those benefits, even though they do not contribute to the production of the good. Collaborative goods go father, increasing the benefits when more users are included, increasing efficiency by increasing utilization through the sharing of the resources and providing a better fit between supply and demand by expanding reliance on local knowledge and end-user input. The characteristics that produce the benefits – intensive utilization of the resources by cooperation, reduced transaction costs, increased range of options – applies not only to purely digital goods. The immense improvement in the ease of communications affects a wide range of economic activities making cooperation and collaboration much easier, so much so that the very logic of collective action has been transformed.

EXHIBIT III-1: CHARACTERISTICS OF COLLABORATIVE GOODS



Source: Mark Cooper, "From Wifi to Wikis and Open Source: The Political Economy of Collaborative Production in the Digital Information Age, *Journal on Telecommunications and High Technology Law,* 2006. 5(1), p. 129; "Access to the knowledge commons in the digital age," *Consumer Policy Review,* 16:3 (2006).

Failing to recognize the broad economic basis of the Internet's success seriously underestimates its value and power as a cooperative solution to important social and economic dilemmas. More importantly, in order to avoid undermining the dynamic economic engine of the Internet in the process of responding to the maturation challenges, the rich and complex set of social and economic dilemmas it addresses must be considered. Preserving the smooth functioning and open nature of the Internet, as the focal core resources system of the digital economy, is critically important for sustaining the economic benefits.

B. PARTICIPATORY GOVERNANCE

As noted above, the governance institutions that evolved were designed to emphasize participatory, polycentric decision making. The decentralized, individual responsibility for decision making was reinforced with regional organizations where possible to infuse the local

input into decision making.

Our analysis shows that this orientation in governance is consistent with broader trends in political organization, such as implementation of principles of subsidiarity and regulatory reform.[13] There is a strong thread in the literature on regulatory reform that is animated by the recognition that representative democracy has significant deficits and the public has changed in its demands, desire and capacity for participation.

An EU White Paper from 2000 on parliamentary democracy notes the challenge of maintaining the connection between representative political institutions and the public as the information age progresses.

> Parliamentary territorial representation entails the involvement of a select few in law- and policy-making and provides a reliable basis for well-organized deliberation and decision-making. It enables in many cases more or less effective and reliable legislative action judged to be legitimate. Of course, such arrangements risk a de-coupling between Parliament and "the people." Two institutional arrangements were supposed to limit such de-coupling, namely regular parliamentary elections and a free press. But, as suggested in this [p]aper, much more is needed. Modern citizenry does not consist of a homogeneous mass public, or merely supporters of one or more parties. They are increasingly complex in their judgments and engagements. They make up an ensemble of publics and differentiated interests and competencies.[14]

Thus, the fundamental challenge in the economy of preserving a dynamic diverse product space in which consumers play a more active role has a direct parallel in the polity. A diverse, knowledgeable citizenry that wants to be and is engaged in the policy process challenges the incumbent institutions. It can be argued that the Internet is ahead of the polity in that it has provided a partial solution that took this direction. It should also be recognized that the framework for promoting and channeling civil society engagement to build a legitimate and effective set of institutions is a work in progress.

The key to achieving the goal of enhancing democratization identified in the EU White Paper is that as the state recedes; it must use the remaining "legal connection" to promote participatory governance to ensure a larger direct role for the public. The principles of parliamentary reform offered as a response to this growing democratic deficit can be applied broadly to governance.

> [W]e suggest consideration of reforms of parliamentary functions, role, and institutional arrangements guided by principles such as the following:
>
> The principle of exercising high selectivity – with respect to the policy areas in which Parliament engages itself directly, for example in the formulation of specific or detailed laws and policies. This calls for explicit consideration of the reasons for such focused involvement.
>
> The principle to delegate whenever possible – a form of subsidiarity principle – to self-organizing policy sectors, at the same time holding accountable these sectors or key or powerful actors in these sectors. Part of this entails establishing effective monitoring and accounting arrangements.
>
> Institutionalizing these self-organizing policy sectors would serve also to legitimize the collective

13.Cooper, Quarterlife Crisis.

14. T.R. Burns, The Future of Parliamentary Democracy: Transition and Challenge in European Governance, green paper for the Conference of the Speakers of European Union Parliaments, Camera dei Deputati (It.)(Sept. 22-24, 2000). http://www.camera.it/_cppueg/ing/conferenza_odg_Conclusioni_gruppoesperti.asp.

deliberations and decisions in these self-governing communities.

The principle of focusing on strategic problems and issues that cannot be readily delegated or dealt with through private interests or civil society. . . .[15]

This is a road map for transferring active decision-making from the state to civil society. It is consistent with Ostrom's observations on the nesting of governance of resource systems in complex environments.

Given the wide variety of ecological problems that individuals face at diverse scales, an important design principle is getting the boundaries of any one system roughly to fit the ecological boundaries of the problem it is designed to address. Since most ecological problems are nested from very small local ecologies to those of global proportions, following this principle requires a substantial investment in governance systems at multiple levels—each with some autonomy but each exposed to information, sanctioning, and actions from below and above.[16]

Concepts of regulation that rely on more direct and frequent involvement, collaboration and participation have been identified. We call it participatory governance.

Collaborative Regulation: The role and structure of the state are fundamentally transformed in a changing society. Governance is seen as a process of interaction between different social and political actors, and growing interdependencies between the two groups, as modern societies become ever more complex, dynamic, and diverse.[17]

Reflexive Regulation: an entire infrastructure aimed at establishing… the right incentives for those bearing the costs of regulation; the right participatory structure for shaping the instruments so that all those affected have a voice in shaping them; the guarantee of legal certainty; and the possibility to hold actors accountable for the consequences of particular actions. [18]

Civic Regulation: The goal of civil regulation is to fill the vacuum left by the contracting state and to compensate for the "deficit of democratic governance that we face as a result of economic globalization… Under civic regulation, the various manifestations of civil society act in a variety of ways to influence corporations, consumers and markets…From civil regulation perspective, the state's role is to provide mechanisms that will empower the institutions of civil society to make corporations more accountable.[19]

Participatory Governance: Informational Regulation, Regulatory Pluralism; various manifestations of civil society act in a variety of ways to influence corporations, consumers and markets, often bypassing the state… However, the evolving role of civil regulation has not taken place entirely divorced from state intervention… a number of next generation policy instruments are geared to empower various institutions of civil society to play a more effective role in shaping business behavior.[20]

C. THE GLOBAL NATURE OF THE SUCCESS OF THE INTERNET

The remarkable success of the Internet creates pressures for change. Even a successful resource system must be able to adapt to change, while at the same time generating widespread support to protect and reinforce the structures and rules that have allowed it to succeed, scale and spread. As noted in the introduction, recognizing the success of the digital communications

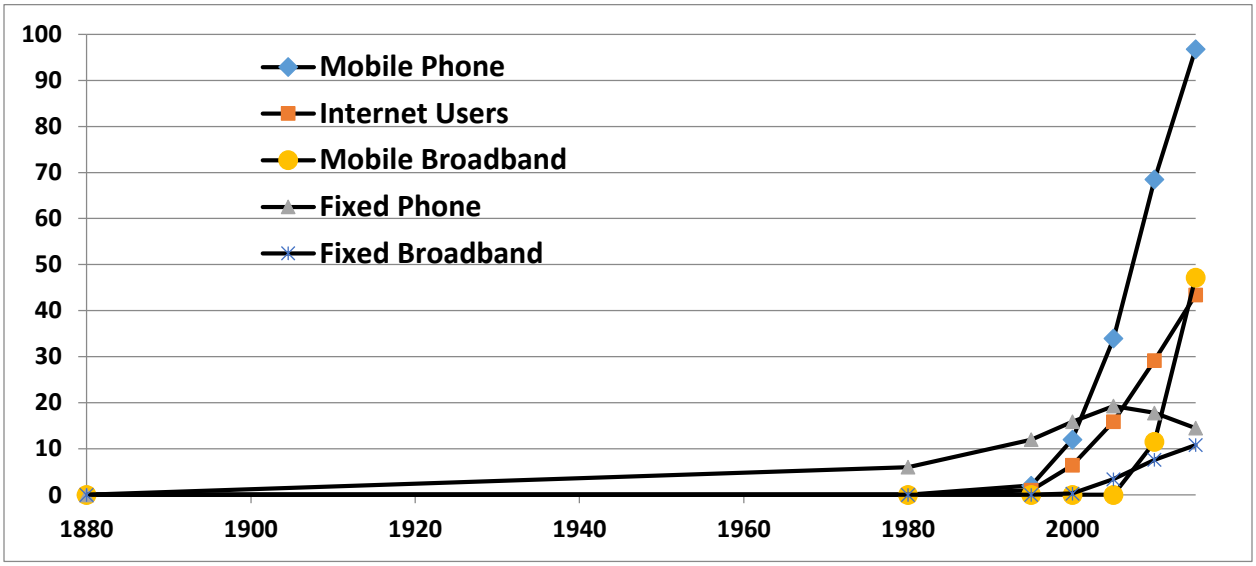
15. *Id*.
16. Elinor Ostrom, Understanding Institutional Diversity 259 (2005), p. 258 (citations omitted).
17 .Hans Bredow Institute, Final Report: Study on Co-Regulation Measures in the Media Sector, University of Hamburg, June 2006 http://ec.europa.eu/avpolicy/docs/library/studies/coregul/final_rep_en.pdf, p. 15.
18. Sabine Weiland, Reflexive Governance — a Way Forward in Coordinated Natural Resource Policy?, REFGOV, Working paper series: REFGOV-GPS-19, draft versionhttp://refgov.cpdr.ucl.ac.be/?go=publications&cat=1&subcat=2, p. 1.
19. Neil Gunningham, Compliance, Enforcement and Innovation, Http://www.oecd.org/dataoecd/18/38/33947825.pdf, pp. 7…11.
20. Id., pp. 7, 10.

provides important context for considering how to adapt the governance model. It also underscores the global nature of the Internet resource system.

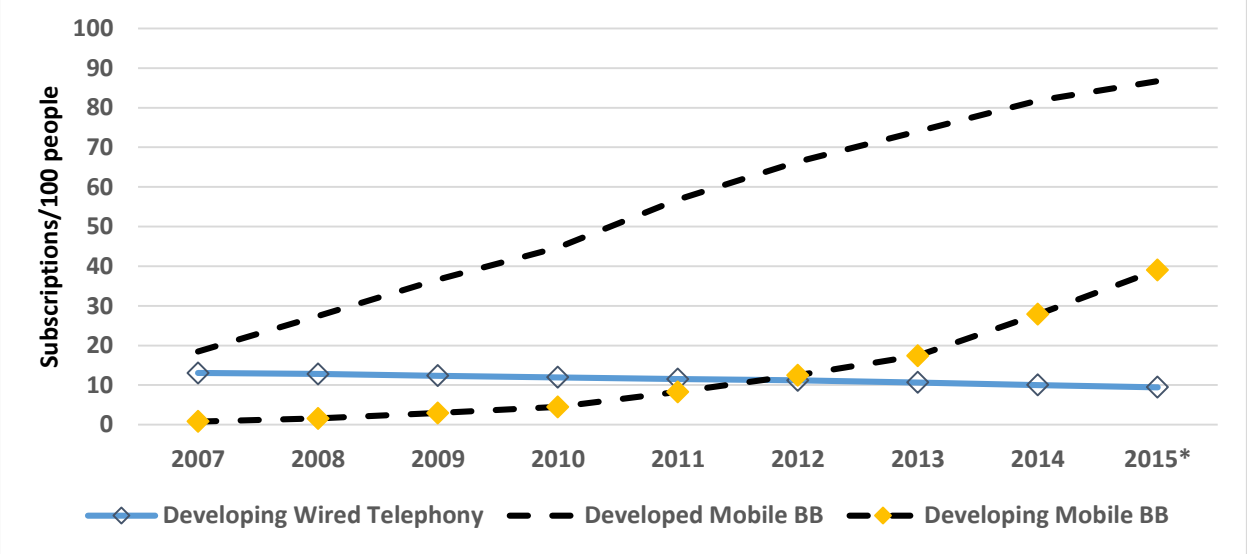
The upper graph in Figure III-2 contrasts the spread of traditional telephony and wireline services to the spread of mobile and Internet service. In making these comparisons, one should keep in mind that wireline service tends to household service (so each phone is serving several people), whereas mobile tends to be personal, always on service. Indeed, the unique value of

EXHIBIT III-2: THE GLOBAL SPREAD OF THE INTERNET AND DIGITAL COMMUNICATIONS

Penetration of Electronic Communications Technology



Penetration of Technologies at Levels of Development



Source: International Telecommunications Union, World Telecommunication/ICT Statistics, http://www.itu.int/ITU-D/ict/publications/world/material/WTID_indicators.xls, various.

personal, service may have contributed to its rapid spread.[21] In one fifth the time, mobile broadband has penetrated to about four times the level that wireline telephony. Whereas it took over a century for wireline telephony to reach about 20 subscribers per 100 people, it took mobile about two decades to reach 90. Mobile broadband has reach almost 50, as has the Internet. Even adjusting for the difference between personal and household communications, it is clear that digital communications have penetrated farther and faster. It is interesting to note that wireline penetration has begun to decline.

The global nature of the Internet is clearly suggested by the penetration of services and technologies. Contrasting the penetration of technologies in developed and developing nations adds depth to this picture, as in the lower graph of Exhibit III-2. Even in developing nations, the penetration of mobile broadband and Internet is over twice the penetration of wireline telephony, in one fifth the time.

As remarkable as the spread of the Internet and digital technologies has been, there is still a great divide between developed and developing nations, with the penetration of Internet and mobile broadband in developed nations over twice that of the developing nations. There is also a divide within developed nations, like the U.S., where as many as a quarter of households does not have Internet at home.[22] This divide is also an opportunity. Already the aggregate number of users in the developing nations is over twice that of the developed nations. The extension of the Internet to those not yet connected and the intensification of usage opens the possibility for the continuation of dramatic expansion.

Another way to see the global nature of the Internet in the context of the end of U.S. stewardship is to highlight the U.S. shares in the 2000 to 2014. The year 2000 is a useful starting point because it was a couple of years after the U.S. committed to transferring its stewardship role to Internet institutions and data is readily available (see Figure III-3).

Even in 2000, the Internet was very much a global phenomenon, although the U.S. had a disproportionate share of usage and traffic. In 2000, the U.S. accounted for just under one-third of all Internet users and about one half of Internet usage. Today the U.S. accounts for about 10 percent of global users and about one-third of all traffic. It share of web sites is slightly larger than its share of usage. To put these numbers in perspective, the U.S. accounts for about 5% of the global population and 16% of global GDP. Thus the U.S. Internet presence is about twice its simple demographic/economic share, but in the aggregate the non-U.S. share is much larger. The Internet has always been global; today it is overwhelmingly so.

D. ARCHITECTURE, SOCIAL POLICY AND GOVERNMENTS

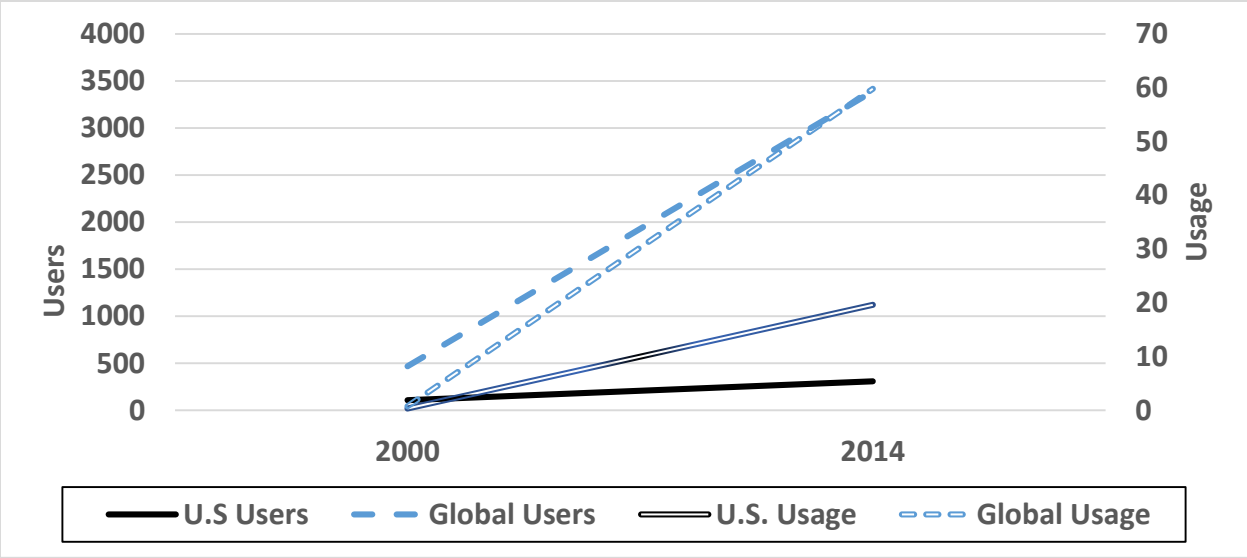
The IANA transition comes at a moment when the penetration of the Internet and the digital revolution into society has triggered a host of concerns about social policy. Various interests envision tinkering with the architecture to achieve some policy goal. This comes into

21. Mark Cooper, "The Central Role of Wireless in the 21st Century Communications Ecology: Adapting Spectrum and Universal Service Policy to the New Reality," *Telecommunications Policy Research Conference*, September 2011

22. Mark Cooper, "Broadband in America: A Policy of Neglect is not Benign," in Enrico Ferro, Yogesh K. Dwivedi, J. Ramon Gil-Garcia, and Michael D. Williams, Eds., *Overcoming* Digital *Divides: Constructing an Equitable and Competitive Information Society*," IGI Global Press, 2009; "Reply Comments -- National Broadband Plan, Public Notice #30, Center for Media Justice, Consumer Federation of America, Consumers Union, Open Technology Initiative, Public Knowledge, on Broadband Adoption," Before the Federal Communications Commission, *In the Matter of A National Broadband Plan for Our Future*, GN Docket No. 09-47, 09-51, 09-137, January 27, 2010;

conflict with the long standing practice in the Internet community to separate architecture and policy conclusions. While architecture decisions inevitably have an impact on policy, the distinction between the two is well recognized. For example, a paper from the United Nations Conference on Trade and Development (UNCTAD) noted:

EXHIBIT III-3: U.S. SHARE OF USERS (MILLION) AND USAGE (TB/MONTH)



Source: https://en.wikipedia.org/wiki/Internet_traffic, http://www.internetlivestats.com/internet-users/; International Telecommunications Union, World Telecommunication/ICT Statistics, http://www.itu.int/ITU-D/ict/publications/world/material/WTID_indicators.xls, various.

> It is important in this regard to distinguish "governance of the Internet" (that involves the physical and logical infrastructure of the Internet, and would probably be more appropriate to refer to as the management of the core resources of the Internet) from "governance on the Internet" (which concerns activities that take place over the Internet, particularly the exchange of information, goods and services).[23]

The pressure to insert policy into architectural decisions is reinforced by another factor that has come into play in the transition debate – the role of governments. Governments are a particular concern in this regard. Governments are instruments of national, not global policy, and they may pursue their national interest at the expense of the global interest. Because they are primarily charged with implementing national policy, they may be more willing to use architecture to solve social policy problems. The extremely open and democratic nature of Internet communications may pose a political threat to some governments.

Our analysis of adapting the Internet governance model concluded that in building the legitimacy of alternative governance models in both the economy and the polity, the state has the important role of gracefully getting out of the way, while providing the important legal underpinning that makes significant contribution to the legitimacy of the alternative governance

23. United Nations Conference on Trade and Dev. (UNCTAD), *Internet Governance*, *in* Internet Governance: A Grand Collaboration 256 (Don MacLean ed., 2004) [hereinafter *UNCTAD*].

model. The state must provide legal clarity in selectively delegating more authority to autonomous, self-organizing policy sectors. In all cases, it is extremely important to seek to ensure that the institutions exhibit the key characteristics for successful oversight, including monitoring institutions for transparency, participation, and accountability. The process of institutionalization discussed earlier is important. While it is clear that the state plays an important part in launching the authority of the alternative governance approach, over time, successful and effective alternatives build independent authority and trust. The ability of the state to revoke the authority shrinks. Eventually, any effort to rescind the authority becomes illegitimate. This is that moment for the IANA functions.

Ironically, this analysis suggests that the last act of the government, as it steps out of its stewardship role, should be to ensure that the new structure is well-designed to achieve the goals of smooth performance, effective oversight and multi-stakeholder governance. By stating the conditions, NTIA has moved in that direction. It need not be passive in the process, however. Because the moment is critical, it should use its influence to ensure that the transition proceeds smoothly and is fully implemented.

This analysis indicates that the successful model should not be asked to take on tasks for which it is not well suited. Internet governance involves highly technical issues that were debated primarily by technicians in an open format. The challenges that are primarily economic, social, and political will be difficult for the Internet institutions to deal with. The perception of the nature of the challenges varies greatly across stakeholders and nations, with some seeing the functionalities technology provides as positive or negative, depending on the point of view of the stakeholder. To a significant degree technology creates possibilities, while policies influence or even dictate which paths are chosen. The ability to separate technical from policy issues is sufficient to promote this balanced outcome.

E. Conclusion

This discussion of success of the Internet and the reform of representative democracy to increase the effectiveness of governance in the digital age reinforces the evaluation of the impact of the transition on the Internet resource system presented in Section I. The NTIA conditions and the Internet institution proposals fits squarely into this understanding of the direction necessary to adapt regulatory institutions to the digital age.

(1) Selectivity: Be highly selective and rigorous in analyzing areas where government action may not be necessary, where self-organizing groups can perform the functions. *Two decades of performance with very little government involvement make it clear that the IANA functions no long need government stewardship, if they ever did.*

(2) Strategic use of state power: State power should be focused on where state action is necessary based on substance, competence and process (i.e. the state is the only agency with competence and the tools to accomplish the goal without undermining other values.) *Policy matters are best dealt with by the state in spheres where the state has the authority, tools and competence.*

(3) Delegation of authority: Local groups with the expertise and direct involvement are frequently best suited to accomplish goals, where local can be a substantive area as

much as a geographical area. *The Internet institutions are the proper home for these function.*

(4) Accountability: Ensure accountability as responsibility is transferred. *The proposals involve several layers of accountability.*

(5) Legitimacy: Use the receding power of the state to legitimize self-organizing groups to exercise authority. *This is the intent of the transition.*

(6) Participatory governance: Attend to the participatory structure to ensure democratic effectiveness. *The Internet governance model is strong in this aspect.*

(7) Recognize the nested nature of resource systems and locate responsibility for decision making and governance at the appropriate level. *The Internet is inherently global and governance should be.*

The two threads of the proposed post-transition institutional structure are intertwined in this list of reforms. The organic, Internet institutions are quintessential self-organized groups that function according to strong principles of participatory, direct democracy. Accountability is the purpose of the ICANN reform. Subjecting its corporatist, representational structure to close oversight by the organic Internet institutions and injecting key elements of the Internet governance model into its internal governance are the glue that holds the mixed institutional model together. Successfully developing an effective mixed model could provide a benchmark for dealing with governance issues in the future.

These comments have demonstrated that a smooth transition to stewardship of the IANA functions to Internet institutions is long overdue. The conditions set down by the NTIA and the responses of the Internet institutions will ensure the continued successful performance of the Internet. These conclusions are arrived at by evaluating the proposed transition from the perspective of our detailed study of the success of the Internet over the course of a quarter of a century. The conclusions are at a high level, resting on the broad principles and macro-structural frame we have developed.

There are many details in the proposals that should and will certainly be debated by the Internet community. Our advice is to ensure that the details comport with the broad principles and macro-structure. However, **if the proposals are implemented as outlined,** we believe that this is a case where **the devil is not in the details.** The Internet principles and the structure proposed for the transition would be strong enough to ultimately override concerns about any details. Indeed, it must be recalled that the Internet has developed according to a pragmatic approach (rough consensus and running code) in which norms, guided by strong basic principles, are worked out in practice. Those norms can only grow if ICANN is reformed in a way that subjects it to the principles of the Internet governance model of direct community involvement.

APPENDIX A:
Consumer Federation of America and Staff Analysis of the Internet and the Digital Revolution

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