

Looking to the Internet for models of governance[★]

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Abstract. If code is law then standards bodies are governments. This flawed but powerful metaphor suggests the need to examine more closely those standards bodies that are defining standards for the Internet. In this paper we examine the International Telecommunications Union, the Institute for Electrical and Electronics Engineers Standards Association, the Internet Engineering Task Force, and the World Wide Web Consortium. We compare the organizations on the basis of participation, transparency, authority, openness, security and interoperability. We conclude that the IETF and the W3C are becoming increasingly similar. We also conclude that the classical distinction between standards and implementations is decreasingly useful as standards are embodied in code – itself a form of speech or documentation. Recent Internet standards bodies have flourished in part by discarding or modifying the implementation/standards distinction. We illustrate that no single model is superior on all dimensions. The IETF is not effectively scaling, struggling with its explosive growth with the creation of thousands of working groups. The IETF coordinating body, the Internet Society, addressed growth by reorganization that removed democratic oversight. The W3C, initially the most closed, is becoming responsive to criticism and now includes open code participants. The IEEE SA and ITU have institutional controls appropriate for hardware but too constraining for code. Each organization has much to learn from the others.

Key words: design for values, governance, intellectual property, internet, open code, privacy, security, standards, technology and society

Technically, what the Internet achieves sounds almost oxymoronic: decentralized interoperation¹.

– Sharon Eisner Gillet and Mitchell Kapor
The Self-Governing Internet

Introduction

Beyond merely automating or redesigning existing internal processes, information technologies provide the opportunity to alter workflow within and between organizations. Adoption of information technology often implies taking organization processes into digital processes. Well-implemented digital processes can be more fair (no psychological bias of the actor), far

more speedy, transcend geographic barriers, and be available asynchronously. However, such transitions may also take subtle questions and force them into Boolean processes, remove transparency, and introduce subtle biases. Therefore the standards that govern such transitions must be carefully examined.

Establishing, selecting or disseminating technical standards that ensure interoperability and flexibility in a decentralized decision-making environment while representing democratic processes is a challenge. Without a centralized body with the authority to dictate standards across political or functional boundaries, how can a government be sure that the system it is building will be compatible with other systems and subject to evolving standards? Without standards of oversight how can government select democratically appropriate standards? Yet the addition of governmental oversight and processes to certify transparency can result in failure to adopt commercially available standards, or even harm the standards process itself. Each of the organizations discussed here have struggled with issues of transparency, efficiency, and legitimately and have arrived at very different answers.

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¹ Sharon Eisner Gillet and Mitchell Kapor, “The Self-Governing Internet” Coordination by Design. In *Coordinating the Internet*, eds. Brian Kahin and James H. Keller (Cambridge, MA: MIT Press, 1997), p. 6.

The bodies and processes through which Internet standards are set offer several models that public sector organizations might consider in responding to this challenge. While there are many different bodies that claim varying degrees of authority in setting standards for interoperability on the Internet, this study will focus on four organizations that serve as "models of governance" for developing standards in a decentralized decision making environment.

- International Telecommunications Union (ITU): The Government Model
- World Wide Web Consortium (W3C): The Consortium Model
- Institute of Electronic and Electrical Engineers Standards Association (IEEE): The Professional Association Model
- Internet Engineering Task Force (IETF): The Open Model

Standards combine social, organization, economic and technical variables to develop a technology that will become obdurate policy as it is widely adopted. The study of standards illustrates that communications and information technologies standards have unique features, particularly because of the strength of network effects that make these standards most difficult to change; the importance of communication in society; and the role of ICTs in commerce and government. (Cargill 1989; Weiss and Cargill 1992; Shurmer 1996; Schmidt and Werle 1998; Pincus 1999).

If a standard is to be adopted by government, the standard setting process must be compatible with the democratic requirements of public sector decision-making. As such, in assessing each model we need to consider the following questions: (1) Who has a voice in the process? (2) How open or transparent is the standard setting process? and (3) Where does the final authority lie for approving standards? In considering these questions, however, it is important to keep in mind that they do not lend themselves to a single correct answer. The democratic requirements of public sector decision-making vary both across different political jurisdiction and different situations. Indeed within ICT standards the policy implications of a technical decision vary from trivial to dominant.

In addition to the democratic nature of the standard setting process, we consider the inherent qualities or characteristics of a standard that would be produced by each model. While there are many characteristics by which a standard can be defined, this paper selects examples that address: (1) openness (2) security (3) privacy and (4) interoperability.

What is the nature of the process?

Broadly speaking, if a standard is to be adopted by government, the standard setting process needs to be compatible with the democratic requirements of public sector decision making in that society. In other words, the rules that govern the standards process must be consistent with the degree of transparency, inclusiveness, and accountability required by other decision-making processes in the public sector. Therefore, in assessing each model we need to consider the following questions:

- (1) Who has a voice in the process?
- (2) How open or transparent is the standard setting process? and
- (3) Where does the final authority lie for approving standards?

Who has a voice in the process?

ITU-T

Participation in the ITU-T² standard setting process is limited to ITU-T membership – namely national governments (members) and select telecommunications companies (sector members). Members and sector members are the only organizations with a direct voice in the standard setting process. Unless called as an expert consultant, non-ITU members do not have an avenue for participation. Since the ITU representatives of member states are also public officials, the general public can voice their opinions and thoughts indirectly through their domestic political process. However, given the distance between the general public and the ITU standards process, this link is tenuous.³

In an attempt to engage the Internet community directly the ITU have developed a set of open meetings modeled, apparently, on the IETF. The ITU has sought civil society actors on the Internet to engage at the World Summit on the Information Society. There is as yet no consensus on the outcome of the WSIS events, with some declaring them irrelevant and others believing that these are so successful that the

² The ITU-T is the Telecommunications Standardization Sector of the ITU. Factual information pertaining to the ITU-T was collected at <http://www.itu.org> unless otherwise noted.

³ Valerie Shuman and Richard Jay Solomon also note that the ITU standardization process is highly political. See "Global Interoperability for the NII and ITS: Standards and Policy Challenges." In *Converging Infrastructures*, Eds. Lewis M. Branscomb and James H. Keller. Cambridge, MA: MIT Press, 1996.