Indirect Threats to Freedom and Privacy: Governance of the Internet and the WWW

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ABSTRACT

Both the general public and privacy advocates view most threats to freedom and privacy on the Internet as arising from direct corporate and government strategies. Other policies exist, however, that indirectly influence civil liberties. These indirect threats arise from the procedures and policies of governance institutions that set standards affecting the Internet. This paper examines the impact of standards bodies on both substantive and philosophical issues of freedom and privacy on the Internet, with a focus on the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C). Possibilities for increasing participation and accountability in these areas are discussed.

KEYWORDS

Internet Governance, Standards, Freedom, Privacy

INTRODUCTION

Standards act as the laws of the Internet. To communicate on the Internet, users must conform to the rules of SMTP, HTTP, and other standard protocols. Although penalties for non-conformance are limited to the inability to communicate, by defining what can and cannot be done on the Internet these standards act as laws that limit possible behaviors.

Several commentators have examined the role of standards design in determining policy. The decentralized nature of the Internet's development is the subject of myth, and has been suggested as a model for development of future Internet institutions [17]. Philip Agre has discussed the view of the Internet as a set of standards that arise out of social discourse and therefore embody substantive positions [1]. Agre has also warned of the dangers of standards processes that do not provide time for democratic deliberation, and the possibility of network effects that may promote inferior standards [2].

Lawrence Lessig has noted the connection between architecture and privacy [14]. Standards bodies might have also been seen as providing a public sphere for consideration of policy issues [20]. The Electronic Frontier Foundation (EFF) and others have used the claim that "Architecture is Policy" to argue for the constructive possibilities of policy creation through design of protocols such as the Platform for Privacy Preferences (P3P) [13].

If standards are laws, standards organizations are legislative bodies, and examination of these groups is necessary for understanding and anticipating the impact of standards and systems based on them. The interests served by standards are likely to be closely related to the interests of the participants in the standards processes. If standards bodies do not support deliberative, democractic processes, the resulting designs may fail to address legitimate concerns of those who were excluded.

These questions become particularly important when considering standards that influence privacy and freedom on the Internet. As controversial and often ambiguous topics, these issues may be subject to manipulation. Standards-setting processes offer interested parties an avenue that might be used to codify various agendas, potentially creating "on the ground" realities that effectively define these terms and shape discussion and debate.

NON-STANDARD STANDARDS

The development of standards is a complex social process [19]: the influence of standards and the organizations that create them are far from absolute. Changes in economic, legal, social, or technical climates often outpace standards efforts. Furthermore, deployment of standards creates inertia that may be hard to overcome. Bulk unsolicited email illustrates these dynamics: the SMTP protocols developed in the 1980s for a smaller, more trusting ARPANET were not designed to handle the spam mail of the 1990s Internet, and the installed base of mail servers may be one of the factors hindering attempts at fighting spam.

A technical specification or proposal does not have to be declared a "standard" in order to have substantial impact. Much of the work of the Internet standards bodies takes place in terms of IETF "requests for comments" or W3C "recommendations"[23]. This has led some to downplay the impact of these specifications: "The IETF process is interesting in that it is descriptive, not prescriptive" [17]. The IETF has even tried to differentiate between their request for comments documents and actual standards [8].

Unfortunately, such disclaimers fail to acknowledge the reality created by the standards process. The widespread deployment of systems based on proposed standards can create realities that are independent of the final status of the standardization process. For example, even though ""not all RFCs are standards"" [8], an IETF draft standard "is normally considered to be a final specification" [3]. Thus, the "draft standard" (as of January 2000) status of the Hypertext Transfer Protocol/1.1 [5] is merely a technicality in the face of the countless widely deployed software packages based on HTTP.

FREEDOM, PRIVACY, & STANDARDS

When assessing the work of elected governments, concerned citizens often examine the contextual factors, political rhetoric, and legal technicalities of proposed and adopted legislation. These investigations help citizens interpret the laws in order to understand their consequences. If standards are the laws of the Internet, similar techniques might be used to assess the impact of technical proposals.

Contextual Factors

Contextual factors surrounding the development of a standard can inform the interpretation of the goals and motivations behind an undertaking. Efforts such as the Platform for Internet Content

Selection (PICS) [18] and P3P [16] originated out of concerns raised by the possibility of legislation [6]. In some cases, avoidance of direct government actions may be appropriate motivation for development of technical standards. However, the dynamic may be somewhat different when there are conflicting interests involved. Proposals designed by corporate consortia may be effective in avoiding legislation that may be seen as "consumer-friendly" or "anti-corporate," but the resulting standards may be less effective in representing the interests of Internet users. In some cases, consumers and citizens might be better served by the legislation that is being avoided.

Rhetoric: Standards as Definitions

The mere existence of a standard can be a powerful factor in shaping debate. Privacy activists have noted industry attempts to portray P3P as a comprehensive privacy solution that would eliminate the need for legislation, despite the more cautious claims of P3P's developers [4]. Of course, such portrayals are not limited to standards: the potential benefits of proprietary tools may be similarly distorted. However, the approval of a standards organization provides a stamp of approval that gives the appearance of cooperative community effort.

Technical Details

Specification and implementation details can often mean the difference between robust protection of privacy and freedom and the mere illusion of such protection. Richard Smith has identified implementation problems in anonymous web surfing services such as the anonymizer, onion routing, and the Lucent Personalized Web Assistant [22]. Although these systems are not standards, the discovery of the holes in systems that are specifically designed to protect privacy illustrates the importance of engineering details, and the difficulty of getting systems to work correctly. The rigorous reviews implicit in the standardization processes may lessen the risk of these problems, but problems due to incorrect implementation or unintended uses are likely to persist.

INTERNET ENGINEERING TASK FORCE (IETF)

The IETF (www.ietf.org) is "a loosely self-organized group of people who make technical and other contributions to the engineering and evolution of the Internet and its technologies" [11]. Operating under the oversight of the Internet Architecture Board (IAB) and the Internet Engineering Steering Group (IESG) [7], IETF working groups develop technical specifications based on "rough consensus and working code." Membership in IETF working groups is open to anyone who chooses to participate via electronic mail or other media [7].IETF process descriptions detail the steps required for adoption of a technical standard, including provisions for dispute resolution and retiring of old standards [3]The open and democratic nature of these processes has been appropriately characterized as a key factor determining "why the Internet is good" [17].

The Internet Society (ISOC) plays a prominent role in overseeing IETF activities. The Internet Architecture Board (IAB) is chartered by ISOC, and the Internet Engineering Steering Group (IESG), is "the part of the Internet Society responsible for the management of the IETF technical activities" [7]. In addition to over 6000 individual members, ISOC has more than 150 organizational members, including corporations, non-profit, trade, and professional organizations, who pay as much as $50,000 annually for the privilege of being ISOC organizational members.

A closer examination of the IETF and ISOC illustrates some of the concerns raised by these organizations. While the IETF is theoretically open to anyone who chooses to become involved, effective participation is in practice limited to those who have both the time and technical background to contribute to ongoing efforts. The Internet Society is similarly unrepresentative: ISOC's membership is a statistically insignificant portion of the Internet community, and the list of organizational mem-

bers is heavily weighted towards established corporate interests.

To the extent that IETF efforts are coordinated by the Internet Society, the transparency and accountability of those efforts may be dependent upon the character of ISOC's operations. If the IETF is accountable to ISOC, the structure and operations of ISOC might play a role in shaping the structure and content of Internet standards. While such concerns may be hypothetical, recent criticism of ISOC's role in the formation of ICANN raises questions about the interests served by ISOC activities [15].

Recent IETF discussions on cryptography and wire-tapping have shown an awareness of the policy concerns regarding freedom and privacy raised by IETF efforts. In the appropriately numbered RFC 1984, the IAB and the IESG took a strong stand against key escrow mechanisms and other restrictions on the use of cryptography [9]. More recently, the IETF's call for discussion of the inclusion of wiretap facilities in Internet telephony protocols identified several relevant questions regarding the impact of implementing (or declining to implement) such protocols [10]. The IETF's raising of questions regarding the impact of such decisions on businesses, governments, and the IETF itself illustrates the complexities of these interactions between technical and social policy.

WORLD WIDE WEB CONSORTIUM (W3C)

Founded in 1994, the W3C (www.w3.org) is an international association of organizations that "share a compelling interest in the long term evolution and stability of the World Wide Web" [23]. W3C working groups produce reports and technical recommendations in areas including user interface, technology and society, architecture, and web accessibility. Like the IETF, W3C creates very few "standards": specifications such as HTML 4.01 are released as "recommendations".

The structure of the W3C is fundamentally different from that of the IETF. In contrast to IETF's open operations, W3C restricts participation in working groups to representatives of member organizations or "invited experts" [23]. Membership in W3C is restricted to organizations (and, in theory, individuals) who are willing to commit to a three-year initial membership, with annual dues ranging from $5000 for non-profits and smaller for-profit organizations to $50,000 for larger companies [24]. While these dues may be necessary for the maintenance of a staff of more than 50 people in locations spanning the globe (MIT, INRIA, and Keio University, Japan), the cost may be prohibitive for many, particularly those in developing countries.

W3C policies regarding publications of documents and other deliverables also restrict activity to a limited audience. Although the consortium's web site provides extensive information regarding W3C activities, significant detail is only available on the access-restricted "member" web site. In particular, working group charters, proceedings, and deliverables may be restricted to the member site [23].

These constraints may limit the accountability and transparency of W3C activities. Without access to information detailing the motivation behind various standards efforts, concerned observers cannot thoroughly investigate and evaluate the impact of W3C efforts. Just as legislation created "behind closed doors" is often considered suspect, the W3C's tight control over information dissemination may damage the credibility of their work. W3C recommendations that are not seen as being the result of open and inclusive practices may face resistance.

A PUBLIC VOICE

Open and democratic processes that build trust through inclusion of a wide range of voices are necessary for meaningful protection of values such as freedom and privacy. Democratizing standards processes may not be easy: engineers may be justified in objecting to "meddling" by non-technical people, and measures that slow the rate of standards adoption may be economically unworkable. Structural changes such as popularly elected standards bodies or government regulated standards

processes are undesirable and almost certainly unworkable. However, existing standards organizations can take steps to make their "law-making" more accountable and inclusive, thus increasing the legitimacy and (hopefully) effectiveness of tools for protection of privacy and freedom:

Transparency: Standards developed behind closed doors by anonymous committees are more likely to face questions regarding agendas and justification for design decisions. Open meetings and publicly accessible archives of documents, mailing lists, and other deliverables will increase understanding of standards efforts. Ideally, this sharing of information would help build trust and credibility possibly leading to greater acceptance of proposals.

Notice: Early announcements of standards efforts will provide interested individuals and organizations with the notice needed to participate in a timely manner. Publicly accessible announcement lists and Internet-related web news sites like Slashdot [21] might be used to effectively spread the word.

Inclusion: Standards efforts should create mechanisms for inclusion of opinions and input from a wider range of constituencies. Input from non-technical viewpoints should be considered during evaluation and creation of standards. Although the Internet Society's goal of attracting 100,000 members by the end of 2000 [12] may be a step in the right direction, it may not be practically impossible to open participation to all stakeholders.

Evaluation: Privacy, free speech, and other related values should be considered in the context of all proposed standards. Just as IETF RFCs include explicit discussion of "Security Considerations", future proposals might have similar sections discussing impacts upon privacy and freedom. Alternatively, oversight boards might work within standards organizations to independently assess the impact of proposals.

Education: The IETF, W3C, and related groups operate in an obscurity that fails to reflect the impact of their work. By taking proactive steps to educate Internet users and the general public about their efforts and products, these groups can reduce confusion and misunderstanding while helping to build an informed and involved community of Internet citizens.

Of course, the power of standards organizations is limited. Market forces, legislation, and other factors can intervene to render standards irrelevant. Despite these limitations, the ability of groups like the IETF and W3C to create standards that govern the Internet is significant, and must be used responsibly. By moving towards more open, inclusive, accountable and democratic practices, these organizations can build trust and legitimacy that will be necessary for an Internet that truly respects freedom and privacy.

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