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STANDARDS STRATEGY AND THE NATIONAL INTEREST

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In this issue, we use the occasion of the upcoming release of the revised United States Standards Strategy to examine the relationship between government and standards, and between national standards strategies and global realities.

In our Editorial, we reflect on the ongoing but increasingly artificial division between the world of accredited standards development organizations ("SDO") and consortia, and conclude that such separation constitutes a wasteful anachronism. Rather, all elements of the existing standard setting infrastructure should be redeployed to meet current realities and urged to cooperate in the new era of globalization.

In furtherance of that goal, we are pleased to announce that we will be hosting a private briefing and working session by the United States Standards Strategy Revision Committee for consortium leaders, to allow them to get a first-look at what the new Strategy will say, and permit them to give input on the direction that this important new document should take. Invitations are available on a limited basis to qualified representatives.

In our Feature Story, we survey the nature and scope of increasing government involvement and encouragement of standard setting in the United States over the last twenty-four years.

Our Trends piece this month seeks to "reimagine" what a national standards strategy might be like that begins with current realities, a clean slate, and an open mandate to address the possibilities of the future.

And in our Standards Blog for this month, we note the persisting limits to humanity's effort to reshape the world we live in, and how emphatically, randomly and tragically we can be reminded that those limitations still exist.

As always, we hope you enjoy this issue.

Best regards,

Andrew Updegrove
Editor and Publisher

DO I KNOW YOU?

Andrew Updegrove

For the last ten months, I have had the pleasure of serving on the committee chartered by the American National Standards Institute (ANSI) to revise the National Standards Strategy first created by ANSI some four years ago. The invitation extended to me was in furtherance of achieving diversity of input on the committee, since my experience lies largely in the consortium world, while the great majority of the other members on the committee have roots primarily or exclusively in the world of accredited standards development organizations ("SDOs").

My experiences to date on this committee have been educational on many levels, as I have had the opportunity to become better acquainted at first hand with the procedural values, priorities and strengths of SDOs. In a sense, it has been somewhat like the experience of Tony Curtis' character in the classic Hollywood film "Some Like it Hot": spending your life in the same industry with SDOs is very different than living in the same room with them for six hours at a time every six weeks.

As in so many other situations where there are two distinct groups (ethnic, religious, or even high school football rivals), it is surprising to see how little one side actually knows about the other. Although consortia have now been around in appreciable numbers for over 20 years, many who are heavily involved in SDOs have little or no direct experience with consortia, and vice versa. Perhaps more surprisingly, a very large number of companies are members of both types of standard setting organizations, and yet misconceptions nonetheless abound among those that live only in one universe or the other. Why is there so little information flow between these two accepted forms of achieving the same goals?

As explored at greater length in a later article in this issue ("Reimagining a National Standards Strategy"<link>), there are in fact a few understandable reasons. One is that SDOs tend to be older and established, while most consortia are newer and/or transitory. That means that many SDOs have had time to grow bureaucracies and significant budgets and become more set in their ways, while most consortia are lightly funded, even more lightly staffed, and are still figuring out what ways they might like to eventually settle into. Another is that most consortia seek to set global standards that get implemented locally, while most SDOs set national standards first, and seek global recognition for those standards second. A third is that consortia are the province primarily of industrial participants, while SDOs are open to wider constituencies, including individuals.

It is therefore perhaps not surprising at all that the cultural gene pools of these two kindred types or organizations have evolved to become so different. But need that be so?

In fact, many of the historical differences between the two types of organizations are already eroding. The mere existence of consortia has resulted in many SDOs speeding up their processes and adopting "fastrack" or other innovations to address the perceived advantages that consortia offer. Similarly, many consortia, such as the World Wide Web Consortium, OASIS, and the Open Geospatial Consortium, have become sufficiently institutionalized that they are in most respects indistinguishable from SDOs.

And as some SDOs have responded to loss of market share to consortia by changing their ways, so also have some of the global organizations, such as ISO, which has created a track by which consortium-developed standards as well as standards of SDO origin can achieve of global ratification. Finally, there are not a few SDOs that now operate consortium-like non-accredited processes as well as accredited processes within their organizations (the Interactive International Imaging Industry Association, or i3A, is one example), and there are other SDO's (such as the National Information Standards Organization, or NISO) that now give away their standards, rather than supporting themselves through their sale.

This type of convergent evolution is hardly unique to standards organizations, and is therefore not surprising. But there still seem to be residual and unnecessary degrees of separation. Why, for example, is there no ANSI for consortia? Or, for that matter, why is there not a way for consortia to take advantage

of some of ANSI's (or ETSI's) domestic and international connections to achieve consortium ends, without jeopardizing the international credentials of consortia?

The fact is that the American national interest (and the national interest of every nation) is ultimately best served by the development of the most robust, open and efficient standard setting infrastructure possible. In order to achieve that end, we should use all of the existing tools at our disposal in as intelligent and coordinated a fashion as possible. That means figuring out how SDOs and consortia can not merely coexist, forming the odd liaison relationship here and there, but rethinking how they can actively work together to achieve the best results with the least overlap.

As in so many other areas of the world, it is more convenient to maintain separation than to create alliances, especially where an "us" and "them" mentality has evolved. But when any lines of separation between SDO and consortium standards *users* that may ever have existed have dissolved (as they have), then its time for the glass walls that divide SDOs and consortia, and that separate national *de jure* standards bodies from each other, to dissolve as well. In an era of globalization, such divisions not only no longer make sense, but they shouldn't be tolerated.

It's hardly to be expected that globalization will demand change everywhere but in the field of standards development. Logically, that day will arrive in the world of standards first.

In fact, it already has.

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ANNOUNCEMENT

AN OPEN INVITATION TO CONSORTIA TO ATTEND A PRIVATE BRIEFING AND WORKING SESSION ON THE REVISED UNITED STATES STANDARDS STRATEGY

Boston, Massachusetts
9:00 – 3:00
February 10, 2005

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In 2000, the American National Standards Institute (ANSI) coordinated the drafting of a National Standards Strategy for the United States (NSS). The NSS was released in August of that year, following which a number of other nations undertook similar exercises. Now, a new NSS committee has been formed to revise and update the original document, and that committee wishes to bring the consortium community into the revision process.

Further to that goal, **ConsortiumInfo.org** and **Gesmer Updegrove LLP** will be hosting a meeting in Boston, Massachusetts on February 10th, exclusively for leaders and representatives of standard setting consortia and open source groups. At this meeting, Committee members (including George Arnold and Mark Hurwitz, the Chairman and President of ANSI, respectively, and Joe Bhatia, the Committee Chair) will describe the current status of the redrafting effort, followed by an extended period during which those in attendance may ask questions, express their views, offer suggestions, and learn how they may become further involved, either actively or simply to track the revision activities as they proceed.

With the globalization of corporations and trade, the revision committee is mindful of the fact that a "national" strategy has become something of an oxymoron, and that (particularly in the information and communications technology areas) a very large amount of standard setting important to the national

interest takes place in consortia with international memberships rather than in nationally accredited standards development organizations. Accordingly, the committee is hoping that the consortium community will take advantage of this opportunity to learn more, and to make its views heard.

The confirmed list of attendees to date includes GLevel representatives from over a dozen leading consortia and open source organizations covering domains as varied as Web and Internet architecture, eCommerce, geospatial imaging, XML, mobile services, Web services, open source tools, and many other domains. There is no charge to attend, and a continental breakfast and full lunch will be served.

To view the original version of the NSS, see:
http://public.ansi.org/ansionline/Documents/News%20and%20Publications/Brochures/national_strategy.pdf

Invitations: If you would like to attend this meeting, please reply to andrew.updegrove@gesmer.com with your name, title and the name of your organization. Space is limited and available to qualified representatives only (qualified representatives may include member representatives delegated by a consortium).

Location: 40 Broad Street, Boston (ten minutes from Logan Airport and South Station).

Agenda: Registration/Continental Breakfast, 9:00 – 9:30 am

	Agenda Item 1 – **Organizational Matters**	
1.1	Welcome and relevance of United States Standards Strategy (USSS) to Consortia	Andrew Updegrove Partner, Gesmer Updegrove LLP; USSS Committee (USSSC) Member Meeting Host
1.2	Self-introduction of participants	All
1.3	Purpose of the U.S. Standards Strategy & goals of the meeting	George Arnold Chair, ANSI Board of Directors; USSSC Member; Consulting Vice President, Lucent Technologies

	Agenda Item 2 – **United States Standards Strategy**	
2.1	Overview: Background of the Strategy and its current revision status	Joe Bhatia Chair, USSSC; Exec. V.P., International Operations, Underwriters Laboratory
2.2	Objectives of the Strategy: Its guiding principles, strategic vision, and intended audience	Jim Thomas President, ASTM; USSSC Member
2.3	Why industry cares	Ron Siletti Corporate Program Director of Standards, IBM; USSSC Member; Chair, ANSI Company Member Forum

	Coffee Break *(15 minutes)*	
2.4	Discussion of key concerns of the Strategy	**Panel/Audience Discussion**

	▪ Access and inclusivity *promoting a market-driven approach to standards* ▪ Global trade and market access *relationship of standards and government policy on trade;* *reducing trade barriers with standards* ▪ Coherence and global relevancy *Promoting the interests of U.S. industry and other stakeholders* *in domestic, regional and international standards-setting forums* ▪ Education and Outreach *Influencing international, national and regional standard setting* *organizations* ▪ Optimizing Interactions in the Standard Setting Infrastructure *Opportunities to influence congressional and government* *policy*	Facilitator: Mark Hurwitz President and CEO, ANSI; NSSSC Member Jim Shannon President and CEO, NFPA; USSSC Member Bill Primosch Director of International Bus. Policy, NAF; USSSC Member Joe Bhatia Jim Thomas Andrew Updegrove
	Lunch and One-on-One Discussion (1:00 – 2:00 pm)	
2.5	Open dialogue *continued discussion following panel presentation/discussion*	Joe Bhatia

	Agenda Item 3 – Wrap Up	
3.1	Summary of Significant Insights from Day's Discussion	George Arnold Andrew Updegrove
3.2	Next Steps and Timeline	Joe Bhatia
3.3	Adjournment 3:00 pm)	

A WORK IN PROGRESS: GOVERNMENT SUPPORT FOR STANDARD SETTING IN THE UNITED STATES: 1980 – 2004

Andrew Updegrove

Abstract: *The United States government has historically not taken an active interest in supporting the development of voluntary consensus standards, or making use of them in its own purchasing. In the last two decades of the twentieth century, Congress passed several pieces of legislation that reversed this position.   This article reviews the benefits that Congress sought to achieve in so doing, the agencies that they charged with administering and complying with the new legislation, and the regulatory and other activities undertaken to achieve those goals.*

Introduction: As standards became more integral to society in the last century, many governments around the world demonstrated increasing interest in how these useful tools are created, deployed and utilized.   In some areas that the State has traditionally regarded as its rightful domain, such as health and safety, governments have assumed the dominant role by setting regulations having the force of law. But In technical sectors, most national governments have allowed the private sector to play the greatest role in the creation and deployment of standards. The specific venues and mechanisms for doing so vary from country to country, but in each case, the practice of standard setting is encouraged by the host government.

The reasons for welcoming the assistance of the private sector are several.   Economically, it is well recognized that "standardization has significant consumer benefits in many markets."[1]   Standard setting serves to "increase price competition," "increase compatibility and interoperability, allowing new suppliers to compete," and "increase the use of a particular technology, giving the installed base enhanced economic and functional value."[2]

Moreover, due to technological advances the modern world has become increasingly in need of a rapidly expanding volume of standards, particularly in the areas of computer information and communications technology (ICT). Even were governments to become interested in playing the leading role in creating such standards, the demands of achieving that goal would outstrip currently available public resources. As importantly, a degree of international cooperation and consensus is required to produce timely ICT standards is not otherwise rapidly achievable through existing government institutions.

The result has been the evolution of a largely private sector *global standard setting infrastructure* that is as extensive as it is invisible to those not directly involved.   This infrastructure includes the officially recognized national standards organizations of the 146 countries that together comprise the membership of the International Organization for Standardization (ISO)[3] (one of several such global organizations), as well as the hundreds of domain-specific standards development organizations (SDOs) that they have accredited.   Finally, there are many hundreds of unaccredited organizations, most often referred to as "consortia", several of which are formed almost every week.[4]

It is estimated that SDOs maintain an incredible 780,000 (or more) official, nationally adopted standards.[5] Consortia create thousands more standards that also achieve national or global adoption, particularly in the areas of information and communications technologies.[6]

Although standards are primarily created by these private-sector organizations of various types, governments nonetheless recognize that standards have a broad range of benefits to society. Governments also realize that the creation of standards may require not only legislative assistance, but regulatory forbearance at times as well. For example, the creation of standards by its nature involves cooperative activity among competitors, which might otherwise normally be viewed by antitrust regulators purely with suspicion. Instead, governments have come to recognize that such action may instead have

significant offsetting pro-competitive benefits, such as increasing price competition among comparable products, and broadening consumer choices.

At the same time, while the benefits of standards are widely recognized by governments, so also are the potential dangers of improper conduct by standard setting participants. By their very nature, standards setting activities that are closed and collusive rather than open and impartial can discourage or even eliminate competition, giving rise to antitrust concerns. In their role as regulators, governments therefore have a duty to police standard setting in order to prevent abuse of the process. As a result, federal agencies in the United States and elsewhere have often taken an active role in applying antitrust and other commercial laws to the standard setting environment, but in a balanced fashion that takes into account potential benefits as well as risks.[7]

Governments also now realize that nations that are leaders in developing standards may often thereby gain competitive advantages abroad. More generally, regardless of their point of origin, globally accepted standards are fundamental to the expansion of international trade, widening the availability of foreign markets for domestic products.

In addition to recognizing the economic benefits of standard-setting activities for their private and commercial constituencies, governments also have an interest in standard setting as consumers in their own right. As the purchasers of enormous quantities of goods and services, governments therefore share with other end-users a desire to make purchases from a wide variety of high quality, price-competitive, interoperable alternatives.

While the government of the United States has hardly been as involved or interested in fostering the creation and utilization of standards as (for example) the European Union or China, it has become more actively engaged on the topic in recent times than previously. In this article, we survey the most significant initiatives taken by the United States federal government since 1980 in order to encourage the continuing operation of a healthy and effective standard-setting process in the United States.

The Basis for Increasing Government Involvement

Over the past two and half decades, the United States federal government has come to realize that federal facilitation of the creation and utilization of voluntary consensus standards is important to the U.S. economy. However, this realization was slow in forming. Consistent with the overall American bias towards private action and a free market economy, the U.S. government's historical attitude towards standards development has largely been one of detachment. Indeed, in areas such as purchasing, the creation of "government specific" requirements in contracting rather than utilizing already existing voluntary consensus standards was the norm rather than the exception.

At the same time, since the courts were periodically called upon to consider what outcomes should obtain when disputes arose between those who participated (or occasionally were barred from participating) in standard setting organizations, Congress was in a unique position to assist or hinder the process of standard setting. This was especially so in its role as promulgator and enforcer of the antitrust laws.

With the increasing globalization of trade, the use of standards to erect trade barriers also became an increasingly troublesome issue and, as a result, industry in the United States (as in other countries) looked to government to help solve a problem that could only be addressed at that level. Finally, increasing challenges to American technology leadership by foreign companies coincided with the tenure of the Reagan government. The laissez-faire business policies of that administration helped create an atmosphere that was more conducive to the passage of legislation intended to make American manufacturers more competitive internationally.

Most recently, a new wave of events and needs has pushed standards and standard setting to the forefront of governmental attention. As an example of the former, the decision by China in 2003 (intended to take effect in June of 2004) to require compliance by wireless chip manufacturers with its own domestic standards resulted in direct intervention by the United States at the highest diplomatic levels before China backed down.[8] And as an example of the latter, the United States Department of Defense has committed itself to convert to a "network centric" operations model, a massive ICT effort targeted at making all information from every source in the field available to all participants, from

battlefield commanders to the Joint Chiefs, and throughout allied forces and Homeland Security as well. Such an effort is only achievable through the utilization of a myriad of interoperability standards. An example of both event and need arose on September 11, 2001, when the urgent need for hundreds of new enabling security and communications interoperability standards suddenly became apparent.

In short, the United States government is becoming increasingly aware of the essential role that standards play at every remove, from commerce, to purchasing, to Homeland Security, to its very ability to perform its appointed functions.

Legislation

Even before President Reagan took office, uncertainty over the application of the antitrust laws to joint development activities led to the publication in 1980 by the Department of Justice of a set of Antitrust Guidelines for Collaborations among Competitors.[9] This publication was intended to facilitate the positive aspects of collaborative processes by giving guidance to the parties involved in joint research projects conducted by market competitors. Unfortunately, fear of liability for the substantial penalties provided under the antitrust laws (i.e., treble damages to successful private plaintiffs) still had a chilling effect. In effect, such high potential penalties provided incentives to watchful competitors to bring spurious charges for strategic reasons as well as to initiate justified lawsuits.

The NCRPA. These concerns attracted particular notice in Congress in the 1980s, when "Japan Inc.'s" collaborative industry approach was popularly identified as one factor behind its apparent ability at the time to out-compete U.S. industry in important technology areas such as semiconductor production. In an attempt to allay the fears of U.S. companies over engaging in similar collaborative efforts, Congress passed the National Cooperative Research Act in 1984.[10]

This Act was subsequently amended to expand its protective umbrella to cover certain types of joint development activities, and was appropriately renamed the National Cooperative Research and Production Act of 1993 ("NCRPA").[11] In its 1984 and 1993 versions, the NCRPA attempted to clarify how U.S. antitrust laws apply to joint ventures, and sought to encourage joint research and development through significantly reducing the penalties for missteps that might occur in the course of such activities.[12] Specifically, antitrust violations involving activities within the ambit of the NCRPA would bear a maximum penalty of actual, rather than treble, damages, provided that the joint venture had timely filed a simple, no-fee notification with the U.S. Federal Trade Commission (FTC) and Department of Justice (DOJ).[13]

While the NCRPA did not make specific mention of standard setting, it was widely used by consortia that were formed after passage of the Act to provide protection with respect to those activities that might fall within its scope. However, the NCRPA had several shortcomings that limited its usefulness to the standard setting community generally. First, it is difficult to know under the general language of the NCRPA exactly what types of standard setting and related activities would be entitled to protection (e.g., would or would not the development of standards or reference software, or the creation and implementation of certification tests, be protected?) Similarly, collaborating parties could only achieve protection if a filing was made within 90 days of the formation of a joint venture.[14]

As a result, pre-existing standard setting organizations ("SSOs"), whether SDOs or consortia, were ineligible to seek protection. Still, many consortia formed after the effective date of the original Act did take advantage of the opportunity to comply, due to the ease with which protection (to whatever greater or lesser percentage of the activities such protection might apply) could be secured.

This situation changed dramatically on June 22, 2004, when the second President Bush signed a little-noticed piece of legislation into law entitled the "Standards Development Organization Advancement Act of 2004"[15], which amended the NCRPA for a second time. The purposes of the amendment were two-fold: first, to specifically cover standard setting, and second, to provide a 90-day window during which existing SSOs could seek protection under the Act.[16] Unfortunately, there was a third element to the amendment that gave up more than was gained: while existing unregistered SSOs could now achieve protection under the NCRPA, their members would be barred from obtaining similar benefits. This led to the anomalous result that even though private parties engaged in any other type of activity protected by the NCRPA could continue to enjoy its benefits, participants in the generally more benign and well-respected process of standard setting could not. Thus, while a gain was provided to existing, unregistered

standards bodies, members of later-formed (and perhaps even existing) standards setting consortia regrettably lost a valuable preexisting right.[17]

The NTTAA and OMB Circular A-119: Congress more directly acted to bolster the private development of standards through its passage of the National Technology Transfer and Advancement Act of 1995 ("NTTAA").[18] Unlike the NCRPA prior to its most recent amendment, the NTTAA explicitly promotes voluntary consensus standards for regulation and procurement by the U.S. government.[19] Historically, the government preferentially used "government unique" standards in much of its purchasing, which often served to limit the number of bidding vendors, required custom manufacturing, and therefore often resulted in higher purchasing costs.

With the passage of the NTTAA, Federal agencies were required to use non-government unique standards whenever possible, and to actively participate in the activities of SSOs to facilitate the development of those standards. As a result, the most active Federal agencies in the United States now use hundreds, and even thousands, of SSO maintained standards, and are completing the task of substituting SSO and other non-government standards for pre-existing government and agency-specific standards.[20] In order to coordinate such compliance with the NTTAA, the Interagency Committee on Standards Policy was formed.

In 1998, the Office of Management and Budget (OMB) updated its already issued Circular A-119 to provide additional guidance to the Federal agencies on implementing the NTTAA.[21] The National Institute of Science and Technology (NIST) has reported that through 2001, Federal agencies had replaced at least 1,412 government unique standards with non-government standards, and also used thousands of additional non-government standards. NIST also reported that in 2001, Federal agencies actively participated in at least 847 separate standard setting activities, and collectively were known to still utilize only 54 government unique standards. The five Federal agencies that use the largest numbers of standards (Department of Energy, Health and Human Services, Housing and Urban Development, Department of Transportation and the National Aerospace and Science Administration) collectively utilized over 3,071 voluntary consensus standards in their procurement activities, and had directed 1,270 of their employees to participate in the activities of SSOs.[22]

Other Standards-Related Legislation and Agency Action: Further to the purpose of the NTTAA, Congress has passed other laws that were not primarily directed at supporting standards, but which contain provisions consistent with the intention of the NTTAA. These include:

- **The Telecommunications Act of 1996:**[23] This Act encourages the Federal Communications Commission to use privately developed standards that have been developed through an open and consensus-based process.
- **The Consumer Product Safety Act**:[24] Pursuant to this Act, the Consumer Product Safety Commission is required to rely on privately developed voluntary consensus consumer product safety standards.
- **The Health Insurance Portability and Accountability Act of 1995**:[25] This legislation requires that the Secretary of Health and Human Services adopt standards developed by ANSI-accredited standards developers if at all possible.
- **The Food and Drug Administration Modernization Act of 1997**:[26] Under this Act, the FDA is allowed in some circumstances to accept manufacturers' declarations of compliance with privately developed standards during the FDA's evaluation of electrical medical devices.

Enforcement

Government policy in the United States is actively implemented and enforced by a variety of agencies, as well as binding (as to purchasing) on all agencies. The principal agencies involved in policies relevant to standard setting are:

Antitrust Division of the Department of Justice: The Antitrust Division of the DOJ shares responsibility for enforcing the US antitrust laws and regulations with the Bureau of Competition of the FTC.[27] The Antitrust division states its mission to be the promotion and protection of the competitive business process and the American economy through antitrust law enforcement.[28] The Division prosecutes violations of the antitrust laws in virtually all industries and levels of business,

including manufacturing, transportation, distribution and marketing by bringing criminal suits or leading civil suits against offenders.[29]

      Federal Trade Commission: As noted, the Bureau of Competition of the FTC shares responsibility for enforcing the US antitrust laws and regulations with the Antitrust Division of the DOJ.[30] The Bureau is a consumer protection agency mandated by the FTC Act to protect the marketplace from unfair methods of competition, and to prevent unfair or deceptive acts or practices that harm consumers.[31] The Bureau has authority to file cases in both federal court and special administrative forums.[32]

These agencies bring actions against offenders of their own accord, but also often intervene as a result of situations brought to their attention by private parties. [33]

Facilitation

Other branches of the Federal government have also taken action to facilitate standard setting by SSOs. After passage of the NTTAA, the Department of Defense "privatized" thousands of existing government unique standards in areas such as aerospace and electronics by allowing individual SDOs to take over the further maintenance and updating of these standards.

In addition to the laws that relate to standard setting activities, several federal agencies have been designated to represent the U.S. government in the standards development process. Chief among them is the National Institute of Standards Technology (NIST).
Founded in 1901, NIST is a non-regulatory federal agency within the U.S. Commerce Department's Technology Administration. It states its mission as developing and promoting measurements, standards, and technology to enhance productivity, facilitate trade, and improve quality of life.[34] NIST has four major programs - the NIST Laboratories, Advanced Technology Program, Manufacturing Extension Partnership and the Baldrige National Quality Program - through which it works with U.S. companies, universities, and numerous other organizations to build critical US technical support system infrastructure (of which standards are an essential part).[35]

While not a part of the federal government, the American National Standards Institute (ANSI) is the recognized representative of the United States in several global standard setting venues. NIST has therefore often joined forces with ANSI to promote the voluntary consensus standards approach.

In addition to prosecuting process abusers, the FTC and DOJ also proactively assist commerce by clarifying the law when necessary by issuing relevant guidelines.[36] In order to assess the need for such advice, they also hold hearings to inform themselves of industry needs. In 2002, the FTC and Antitrust Division of the DOJ held extensive joint hearings on "Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy."[37] These sessions continued the agencies' inquiry into the implications of competition and patent law and policy for innovation and other aspects of consumer welfare by focusing on a number of topics central to the intersection of antitrust and intellectual property law.[38]

Topics examined during these hearings included patent pools, cross-licensing, patent settlements, intellectual property strategies and license terms in standards activities, licensing strategies, antitrust analysis of licensing practices and an international comparative law perspective on the relationship between competition and intellectual property. On April 18th, 2002, the hearings focused on consortia and standard setting. [39]

Most recently, the Department of Commerce issued a major report emphasizing the need for coordinated action to avoid the use of standards to erect trade barriers.[40]

Summary

The United States being a democracy, the issues that motivate Congress are not unlike waves upon a shore; the emotions (or lobbying) that impel a bill through to adoption at times abate as rapidly as they arose. Sometimes, the legislation left behind turns out to be flotsam of transient relevance hat is soon enough forgotten. [41]

But it is equally true that there are tides (as well as waves) in the affairs of governments. When wave follows wave to a single purpose through the administrations of both parties, then it is clear that the there is a tide, and not a single, isolated wave of interest at work. So it would seem in the case of standard setting in the United States at this time.

While this writer would be surprised to see standard setting rise to the perceived level of strategic importance that it has achieved in the European Union, it seems equally clear that standards have achieved a level of legitimacy on the national stage and in the halls of government that is not likely to significantly abate, at least for the foreseeable future. Perhaps most significantly, the ability of government to function at all is increasingly dependent on the robustness of its own information and communications technology infrastructure. Of necessity, the Federal agencies will be increasingly mindful of the importance of standards, even if the attention of Congress flags.

Indeed, as the world becomes ever more interconnected, the role of standards will become ever more vital. Inevitably, the word "standards" will necessarily crop up in more and more agency and legislative contexts. Perhaps with sufficient repetition, the attention of government in the United States on voluntary consensus developed standards will be here to stay.

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[1] Lemley, Mark A., *Intellectual Property Rights and Standard-Setting Organizations*, 90 Cal. L. Rev. 1889, 1896 (2002).

[2] Balto, David A., *Standard Setting in the 21st Century Network Economy*, Computer and Internet Lawyer, Vol. 18, No. 6, 3 (Jun. 2001).

[3] ISO, *ISO In Figures* (Jan. 2003)
<http://www.iso.ch/iso/en/aboutiso/isoinfigures/archives/January2003.pdf>.

[4] For the most complete list of such organizations currently in existence, see ConsortiumInfo.org, Consortium and Standards List, *at* <http://consortiuminfo.org/list/>.

[5] Toth, Robert B., ed., NIST, *Profiles of National Standards-Related Activities,* Spec. Pub. 912 (Apr. 1997).

[6] *See* Consortium and Standards List, *supra.*

[7] For an exhaustive review of United States antitrust and other laws, regulations and case holdings related to standard setting, with links to cited cases, regulations and statutes, *see* ConsortiumInfo.org, Laws, Cases and Regulations, *at* <http://consortiuminfo.org/laws/>.

[8] Updegrove, Andrew, *Breaking Down Trade Barriers: Avoiding the China Syndrome*, ConsortiumInfo.org, Consortium Standards Bulletin, Vol. III, No. 5, May 2004, pp. 8-11, at
<http://www.consortiuminfo.org/bulletins/may04.php#trends>.

[9] FTC and DOJ, Antitrust Guidelines for Collaborations Among Competitors (Apr. 2002), *available at* <http://www.ftc.gov/os/2000/04/ftcdojguidelines.pdf>.

[10] National Cooperative Research Act of 1984, 15 U.S.C. §§ 4301-4306 (1984).

[11] National Cooperative Production Amendments of 1993, 15 U.S.C. § 4306 (1993); National Cooperative Research and Production Act of 1993, 15 U.S.C. §§ 4301-4306 (1984).

[12] 15 U.S.C. §§ 4302, 4303.

[13] 15 U.S.C. § 4303.

[14] 15 U.S.C. § 4305.

[15] Standards Development Organization Advancement Act of 2003, Pub. L. No. 108-237, 118 Stat. 661 (2004).

[16] Standards Development Organization Advancement Act §§ 103, 107.

[17] The impact of the House Bill 1086 (as the 2004 amendment of the NCRPA was internally designated), on existing and future consortia is unfortunately quite murky. For a detailed analysis *see* Updegrove, Andrew, *What Does 1086 Mean to Consortia?* ConsortiumInfo.org, Consortium Standards Bulletin, Vol. III, No. 6, June 2004, 8-12, *at* <http://www.consortiuminfo.org/bulletins/jun04.php#update>.

[18] National Technology Transfer and Advancement Act of 1995, 15 U.S.C. § 3701 (1995).

[19] *Id.*

[20] OMB, Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, Circular A-119, Revised (Feb. 10, 1998), *available at* <http://www.whitehouse.gov/OMB/circulars/a119/a119.html>.

[21] Id.

[22] Kevin McIntyre and Michael B. Moore, NIST, Fifth Annual Report to the Office of Management and Budget on the Implementation of Public Law 104-113 and OMB Circular A-119 (Oct. 2002).

[23] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996), *available at* <http://www.fcc.gov/Reports/tcom1996.txt>.

[24] Consumer Product Safety Act, 15 U.S.C. §§ 2051-2058, 2060, 2061, 2063-2085 (1972).

[25] Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191, 100 Stat. 1936 (codified in scattered sections of 18 U.S.C., 26 U.S.C., 29 U.S.C., and 42 U.S.C.).

[26] Food and Drug Administration Modernization Act of 1997, Pub. L. No. 105-115, 111 Stat. 2296 (codified in scattered sections of 21 U.S.C. and 42 U.S.C.).

[27] FTC, Bureau of Competition, Overview, *available at* <http://www.ftc.gov/bc/mission.htm>.

[28] DOJ, Antitrust Division, Overview, *available at* <http://www.usdoj.gov/atr/overview.html>.

[29] *Id.*

[30] FTC, Bureau of Competition, Overview, *available at* <http://www.ftc.gov/bc/mission.htm>.

[31] *Id.*

[32] Currently, the FTC is prosecuting Rambus Incorporated with respect to its allegedly fraudulent behavior in an SSO. For ongoing coverage of this case and related proceedings among private parties *see multiple articles to be found at* ConsortiumInfo.org, Consortium Standards Bulletin Cumulative Index, *at* <http://www.consortiuminfo.org/bulletins/>.

[33] FTC, Bureau of Competition, Overview, *available at* <http://www.ftc.gov/bc/mission.htm>.

[34] NIST, General Information, *available at* <http://www.nist.gov/public_affairs/general2.htm>.

[35] Relevant NIST publications include the following:

- Maureen A. Breitenberg, NIST, The ABC's of Standards-Related Activities in the United States (1987), *available at* <http://ts.nist.gov/ts/htdocs/210/ncsci/stdpmr.htm>.
- Breitenberg, Nat'l Bureau Standards, The ABC's of Certification Activities in the United States (1988), *available at* <http://ts.nist.gov/ts/htdocs/210/ncsci/cerprime.htm>.
- Breitenberg, NIST, The ABC's of the U.S. Conformity Assessment System (1997), *available at* <http://ts.nist.gov/ts/htdocs/210/ncsci/primer.htm>.
- Breitenberg, Dep't Commerce and NIST, Laboratory Accreditation Activities in the United States (1991), *available at* <http://ts.nist.gov/ts/htdocs/210/ncsci/primer1.htm>.
- Breitenberg, NIST, The U.S. Certification System from a Governmental Perspective (1997), *available at* <http://ts.nist.gov/ts/htdocs/210/ncsci/govcer.htm>.
- NIST, Standards Coordination and Conformity Group, Acronym List, *at* <http://ts.nist.gov/ts/htdocs/210/gsig/acro1.htm>.
- NIST, Guidance on Federal Conformity Assessment Activities, 15 C.F.R. § 287 (2000), *available at* <http://ts.nist.gov/ts/htdocs/210/gsig/caguidance.htm>.
- Directory of U.S. Private Sector Product Certification Programs, NIST Special Publ'n 903 (2001 ed.), *available at* <http://ts.nist.gov/ts/htdocs/210/gsig/cainfo.htm>.

[36] *See infra* note 2 and accompanying text.

[37] *See generally,* FTC, Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy, *at* <http://www.ftc.gov/opp/intellect/>.

[38] *See infra* note 37.

[39] For multiple papers submitted and transcribed testimony given on April 18th, 2002, *see* <http://www.ftc.gov/opp/intellect/index.htm>.

[40] Dep't Commerce, Standards and Competitiveness – Coordinating for Results: Removing Standards-Related Trade Barriers through Effective Collaboration (May 2004). For a detailed analysis of the report *see* Updegrove, Andrew, *U. S. Department of Commerce Delivers a Major Standards Report*, ConsortiumInfo.org, Consortium Standards Bulletin, Vol. III, No. 6, May 2004, 4-8, *at* <http://www.consortiuminfo.org/bulletins/may04.php#feature>.

[41] As an example, the NCRPA has never been widely utilized, relative to the number of joint ventures that might have taken advantage of its existence.

REIMAGINING A "NATIONAL" STANDARDS STRATEGY

Andrew Updegrove

Introduction: In 2000, the American National Standards Institute (ANSI) undertook the task of drafting a "National Standards Strategy " for the United States. The goals included identifying the challenges then facing America as it participated domestically and abroad in standard setting, devising responsive actions to be taken to meet those challenges, and designating the stakeholders best suited to undertake them. A blue ribbon committee drawn from accredited standards development organizations (SDOs), government agencies, industry and academia was formed to undertake the task, and broad participation was solicited and received from the wider standards community as well. The resulting document received immediate attention abroad as well as domestically, and a number of other nations undertook similar efforts shortly thereafter.

In 2004, a new committee was formed, including representatives from the original group as well as new members (of which this author is one). In approximately one month's time, the working draft of the revised United States Standards Strategy will be released for comment. A final release is expected in the late spring after input is received from all relevant sectors.

The purpose of this article is to "reimagine" what a national standards strategy could be, if not today, then in the not so distant future.

NOTE: The thoughts that follow are those of the author alone, and are not representative of any actual decisions, conversations, or elements of the document soon to be released.

Historical Context: Throughout the greatest part of the twentieth century, all standards in the United States were set by SDOs, either those accredited by ANSI, or through other formally recognized bodies in which American representatives participated, such as the Codex Alimentarius system, which globally approves standards relating to foods. In the early part of the century, most manufacturing was directed at domestic markets, and a comparatively small number of American vendors tackled the complexities of exporting their wares. Of course, this reality rapidly changed as time progressed.

Similarly, the stakeholders in American standard setting had been largely static for some time. They were: ANSI; well and long established SDOs; corporate and individual representatives of industry; and lesser numbers of members in these SDOs drawn principally from government and academia.

But the importance of standards also increasingly looked outward as time passed, primarily as regards promoting (or at least securing a level playing field for) American products abroad. Effectively proposing American-developed standards for adoption by global organizations such as the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC) and the International Telecommunications Institute (ITU) thus became important in order to assure that standards adopted by these organizations were at least neutral as regards the interests of American business.

With the rise of the European Union, concerns arose in some quarters in America over "block voting" by such countries in these organizations, especially as the EU devised and deployed an increasingly effective and well-supported standards policy – America, in contrast, had but a single vote, and a historically disengaged government as well, as regards the domestic development and promotion of voluntary consensus standards.

Consequently, the use of local standards by foreign governments, or burdensome conformance testing relating to global standards, to bar or disadvantage foreign goods from domestic markets also became a priority for standards policy. Most famously, the Japanese are said to have produced a local standard for skis, defending it with the assertion that "Japanese snow is different." Eventually, these concerns (shared by other countries as well) resulted in the adoption of a Technical Barriers to Trade (TBT) agreement, adopted through the World Trade Organization in 1994.

Standards themselves could also be created, in most cases, within neat "silos". While there might be overlap between the areas of interest of SDOs at times, there was also comparatively little need to coordinate (for example) wiring standards with plumbing standards, even though both would be used in construction of the same types of buildings. Those interested in a particular domain of standardization could therefore concentrate solely on their own areas of interest, and those process requirements necessary (if desired) to seek international adoption of their own work product.

Accordingly, many SDOs also became active as trade associations undertaking diverse activities in addition to the creation of standards. And, since all standards were formed within discrete organizations, each using basically the same process within broadly similar organizations, there was no competitive pressure to optimize speed due to completion.

Up to this point, the traditional SDO infrastructure was evolving in a fairly linear fashion, representing in many respects the attributes of a "mature industry:" well defined categories of participants, equally well defined process, and a global hierarchical structure divided into appropriate areas of competence and governance. The "Big Is" (ISO, IEC and ITU) were on their thrones, and all was right with the standard setting world.

Today, many elements of the landscape briefly described above have changed (some profoundly), and the traditional standard setting infrastructure is being challenged by these changes, nowhere more so than in the area of information and communications technology (ICT). With these changes, it becomes necessary to deconstruct the tidy historical landscape described above, identify the new entrants and forces deployed upon the field, and assemble a new picture of the world of tomorrow in order to visualize what shape a national standards strategy for the future might best take.

Deconstructing the Landscape: Today, the scene looks very little like the one described above. The most significant changes to that scene include the following:

Participants: The most noticeable and longest-standing change to the standard setting landscape is the rise of consortia as the venue within which the majority of information technology standards, and an increasing percentage of communications technology standards, are set and/or promoted. Today, there are many hundreds of these entities in operation, and the consortium model is beginning to be utilized in other disciplines as well, such as automotive technology and life sciences. Moreover, as ICT and the standards that enable it become more central to every area of life and commerce, consortia have been formed to address the needs of virtually every industry, including many of those already served by SDOs that continue to set non-ICT standards for the same constituencies. To give but a single example, literally hundreds of XML taxonomies and schema have been created to address the information needs of an equal number of industries, many of which are quite traditional. (For a list of hundreds of consortia and SDOs, see the Consortium and Standards List.)

New Intellectual Property (IPR) Issues: The traditional high level ANSI IPR model is being challenged on multiples fronts: first, and of greatest concern to the traditional SDOs that derive a significant portion of their income from selling the standards they develop, is a recent copyright issue. Recently, a court in Texas held that standards that had become legally mandated (in this case, in a building code) must be made available free of charge to those that were required to use them. Second, and of greatest concern to the ICT vendors that most frequently form and participate in consortia, the American patent system is finding itself increasing apt to grant software patents that many believe should never have been granted. (See, "Do IT Patents Work?")

Meanwhile, in Europe, the EU Parliament is in a protracted wrangle over whether or not to permit "American style" patenting of software at all. At the same time, high-profile appellate court and Federal Trade Commission rulings in this country failed to sanction what a jury had already found to be "gaming" of a standards process by a member of the host organization. The result is that creating an IPR policy and procedures that will reliably reveal relevant patents before a standard is issued and implemented has become increasingly challenging. And lastly, new realities such as the Internet, the Web and the open source model are creating demands among some stakeholders for royalty-free IPR policies, a requirement not permissible under the existing ANSI patent policy, and usually a struggle for a consortium to enact as well.

Manufacturing v. Services: America is increasingly a nation of innovators, service providers and bargain shoppers. The resulting drain of manufacturing jobs means that the balance of popular interest in many non-rust belt states is passing from promoting the sale of domestically manufactured goods at home and abroad, to having the richest and cheapest variety of goods to buy at Wal-Mart. Similarly, profit margins are often more important to (for example) an Intel or Texas Instruments stockholder than the location of the same company's fab facilities (and related jobs). And in truth, the differential between domestic and third world labor is so great that a standards strategy is hardly likely to be a factor that will have any impact on whether a job is created (or lost) at home or abroad.

Globalization and Multinationals: Trade is increasingly universal, with the result that competition is becoming broader at an accelerating rate. At the same time, U.S. headquartered manufacturers continue to move more and more of their facilities off shore, or to contract their goods to be manufactured by foreign companies entirely. As industry after industry experiences increasing consolidation, the companies that remain care first and foremost about global sales and profit margins, and distantly (if at all) about where the standards they employ have been created, so long as they are effective to do the job.

Regionalism: After years of market dominance by the United States in certain industrial sectors, regions such as Europe (most noticeably) and parts of the Pacific Rim (increasingly) are beginning to join forces to set standards intended to benefit local industry. While the TBT may limit the degree to which such standards can be utilized to local benefit, standards can still be tuned to local advantage, and then aggressively promoted for adoption by the Big Is and other global standards bodies.

New National Forces: The emergence of China as not only the world's workshop, but also as its largest emerging market, has introduced a powerful new dynamic into the standards scene. The fact that much of the economy of China is still centrally planned has made it easy and attractive for the Chinese government to commit significant resources to creating a standards strategy that will counteract some of what it sees as existing trade inequities. And in some cases, these inequities are real, given that the ownership of key patents in many technologies resides in the West, meaning that Chinese manufacturers are at a significant disadvantage compared to Occidental companies with large patent portfolios that result in low-cost, or no-cost, cross licensing arrangements involving the same goods. (See: "Breaking Down Trade Barriers: Avoiding the China Syndrome")

Convergence: In an increasing number of venues, the days of "silo standards" are rapidly ending. When mobile devices can be used as telephones and PDAs, as cameras and as MP3 jukeboxes, and as web browsers and stock trading platforms, a fantastic number of standards may need to be implemented in a single device. Multiple other instances abound, from Web services to network centric warfare, each requiring the assembly of profiles of standards from multiple SDOs and consortia in order to make the final product work. And the phenomenon is hardly limited to classic ICT goods and services: already, there are implanted medical devices controlled by wireless signals, requiring an unprecedented degree of cross-industry cooperation between disparate disciplines, as well as global rather than national or regional agreements.

New Priorities: New realities have raised the importance of preexisting challenges. Most noticeably in the United States, Homeland Security concerns and the tragic lack of interoperable communications devices used by first responders at the World Trade Center have resulted in an explosion of new standards efforts. These efforts address needs from biometric identification, to telecommunications, to GIS enabled capabilities. Many of these areas present their own convergence issues.

Social issues: The increasing importance of the Internet and the Web are raising awareness in the United Nations and elsewhere of the integral role that these new technologies are playing as the emerging backbone of everything. At the same time that the Web can open previously unheard of new doors to the third world, the growing reliance of interests as diverse as financial services, health care and government operations and services on the Internet is becoming obvious as well. But who should control such a fundamental pipeline? Should its maintenance and evolution be thought of as a purely technical challenge, or should it be compared more accurately to a public utility, and therefore subject to regulation? (See: "Who Should Govern the Internet?") More generally, what role, if any, should social responsibility play in standard setting?

New Solutions: New approaches to achieving old goals are also appearing on the scene. Most notably, open source is enjoying logarithmic growth, both in deployment of specific open source products as well as in numbers of needs being addressed. By creating the software itself, rather than a description of its interface, and then making that software freely available, interoperability and future legacy issues can be ameliorated or eliminated entirely. While some would sniff that "open source isn't a standard", the objection misses the mark: standards are simply a means to an end, and not an end in themselves. If the same end can be reached by a better voluntary consensus created solution, then a greater good is achieved – and its time to abandon the old tool for the new.   (For this reason, we promote the concept of "commonalities" over standards, as being at once more inclusive of available solutions and less likely to lead to unnecessarily limited thinking.   See: A Look into the Future: Not "Standards", but "Commonalities")

New Methodologies: The second significant reality of open source is the development process. The open source methodology takes the consortium approach one step further.   While consortia are almost always lighter on paid staff, budget and facilities, many open source projects dispense with those elements entirely. Even more dramatically, vendors may not figure into most open source projects at all. For now, at least, many of the most successful open source projects (such as Linux) still number individual engineers not deployed by their employers as vital resources.

New Delivery Mechanisms: While some open source projects are being launched by vendors based upon a model more akin to consortia, the licensing regime under which the code created remains substantially similar. Although vendors such as IBM have created their own "flavors" of the GNU public license, most such variations remain within evolved definitions of open source software. These licenses represent one of the most profound shifts from an existing business model ever witnessed.

Dynamism: As the above points demonstrate, the final reality to be addressed is the fact that everything is changing at an ever-increasing pace. The evolution and unchallenged reign of the SDO lasted for over seventy-five years, while it was less than twenty years after consortia became common that open source burst upon the scene. Similarly, the differences between the open source development methodology and delivery mechanism and consortium methodologies are revolutionary, while the development of the consortium model from its SDO origins was simply evolutionary. It can hardly be assumed that open source will be the last or most radical innovation to be added in the search for new and better commonalities, especially as the challenges presented become even more complex, more global, and more multifaceted.

Reconstructing a Global Standards Strategy: With the above in mind, what should a national standards strategy seek to achieve?

Globalization: The first and foremost reality to be accepted in devising a standards strategy for the future is that the word "national" is no longer an appropriate modifier. At a minimum, the United States is well along the road from being a net exporter of finished goods to becoming a nation of consumers dependent on an ever-increasing volume of imported goods, and even "off-shored" services (not to mention foreign investment capital as well). Not unlike the OPEC powers as they flexed their newly energized economic muscles in the 1970s (or, more disturbingly, the Roman Empire as it gathered resources from increasingly restive subject lands), America is realizing that its ability to continue to enjoy an affordable consumer-centric lifestyle has become dependent upon the productive capacity of the rest of the world.

While (politically, at least) it cannot lightly be said that there is no value to pursuing a strategy intended to save lost manufacturing causes, it would be more practical to do so. In the past, we have had to face the fact that American workers will no longer manufacture textiles, shoes and consumer electronics. It is time to acknowledge that there are many other types of products that will share the same fate, and instead determine how best to create new and more durable jobs. To the extent that a standards strategy can achieve that goal, it should be based upon acceptance of the reality that the jobs that can be created will be in the design, sales and marketing of new products, rather than in their manufacture.

Similarly, as multinational, U.S. headquartered companies represent a larger and larger percentage of the American economy, business decisions will increasingly focus on whether the goods sold by these

companies can be efficiently manufactured abroad, and whether a level playing field in foreign markets can be assured for the sale of those products. In other words, to a major multinational, it may be more important that a global standard be adopted in the U.S., than that a U.S. origin standard be blessed by one of the Big Is, especially if that is the price of unlocking a major new market, such as China.

Opening the Tent: Perhaps the biggest challenge to adopting a global, rather than a national, standards strategy is that the traditional pieces in our domestic infrastructure are square, while some of the new holes that must be filled are round. Historically, there has been little dialogue between SDOs and consortia, even though a great many major companies that are members of either type of organization are members of both. And this phenomenon is hardly limited to large technology companies, such as IBM or Sun Microsystems: John Deere, for example, has been heavily involved in a variety of IT consortia for years, as well as in SDOs.

The reason for this lack of communication is less surprising than it sounds. With few exceptions, consortia headquartered in the United States are seeking to set standards for global uptake, while most (although not all) American SDOs are directed solely at American members, and create "American National Standards" that they may or may not offer to a Big I or other global body for consideration and adoption. American-based consortia already have an image problem convincing companies from Europe and elsewhere that they are truly global rather than American-centric. How then does a consortium work with an American SDO or ANSI without seeming to undercut its efforts to be more international?

Similarly, since the Big Is require that a standard be recommended to them by the recognized national body of a country in order for that standard to achieve full status upon adoption, there is a natural barrier to consortium standards becoming adopted by such organizations.

The result has been that a sort of consortium-based parallel universe has evolved, with organizations such as the World Wide Web Consortium (W3C) achieving enormous global respect and success, without feeling any need to offer every standard it creates for endorsement by an ISO or an IEC. In fact, some bridges (or, to continue the metaphor, worm holes) have been created between these two universes, such as the "Publicly Available Specifications" process created by ISO, that allows consortia and others to refer a specification to ISO for recognition, albeit on a different basis than would an SDO. As a result, some consortia do, in fact offer standards to a Big I, and SDOs have increasingly approached consortia to request submission of standards. In the ICT industry, those that actually use the standards often could care less. What matters is how good and how widely adopted a standard is, and not whose trademark appears upon it.

Clearly, there needs to be a way to break through this invisible wall in order to optimize the value of the existing SDO/consortium infrastructure.

Taking off the Blinders: It is a given that the future will look less and less like the past as it unfolds. Experience has also shown us that industry will create new commonality solutions in situations where the old ones will not suffice. A durable standards strategy (i.e., one that may expect to remain reasonably applicable for three or four years, and act as a useful foundation for twice that long) should therefore look – hard – at what has already changed or is on the verge of doing so, and meet those challenges head on.

For example, there is a demonstrated need to develop new structures that are adequate to address the demands of convergence, because the existing infrastructure was not designed to meet this need. Already, examples of such entities exist, in order to assemble profiles of Web services standards (the Web Services Interoperability Organization, or WS-I), direct mobile photographic device to printer integration (the Mobile Imaging and Printing consortium, or MIPC) and network centric warfare (the Network Centric Operations Industry Consortium, or NCOIC). While it is good when vendors take the initiative to devise such solutions, there is no reason that the existing standard setting infrastructure could not be more forward thinking in retooling that infrastructure to address new challenges.

Recommendations: What might a radical and fearless standards strategy for the future look like?

Infrastructure: First, it would address the reformation of the existing standard setting infrastructure, to be results driven, rather than means focused. How might that be done? Most obviously:

- The United States' greatest talent lies in innovation. Increasingly, deploying the fruits of such innovation is dependent upon the swift creation and rapid uptake of standards, without competing technical approaches or destructive turf wars. The goal should therefore be to foster the fastest creation of the best standards needed to allow such innovations to bear fruit, with the creation targeted to occur in whatever venue may best perform that task, regardless of its type or host country.

- It should be recognized that there is no clear line to be drawn by industry as to which standard should be created where. For example, while many ICT standards will most logically continue to be created in consortia, others will not. For example, the IEEE is an SDO, but remains a respected home for the development of many types of important ICT standards (e.g., the 802.11 family of wireless specifications).

- SDOs and ANSI have infrastructural elements and experience that consortia do not commonly have (e.g., a familiarity with the workings of the federal government, ties with NIST and other agencies, and established relationships with European and other de jure standards bodies). These resources should be made available to consortia and open source projects as well as SDOs, and these organizations should make use of them when it would make sense to do so.

In short, a standards strategy that would suit American interests best is one that would be agnostic as to development platform, but critical in determining where the most fruitful opportunities for American industry lie, and concerned with identifying the optimum venues to develop the standards needed to enable those opportunities to be fulfilled.   The strategy should also focus on global markets, and identify and pursue an industry-by-industry and technology-by-technology approach to identifying the best approach for each.

How can this be accomplished? Perhaps a new type of standards organization is needed that lies above the SDOs and consortia, where stakeholders (industry, government, academia, consumers, and so on) agree upon opportunities, assess challenges, and agree on the strategies (not all of which will involve traditional standard setting) needed to achieve the identified ends. This would result in supporting either an SDO or a consortium (or an open source project, or some other, yet to be evolved type of organization), and by identifying the necessary linkages that should be established between the parallel universes of accredited and non-accredited entities.

Individual Strategies: Having reformed the infrastructure, these newly coordinated resources could more readily pursue the following objectives:

- Develop a new type of global standards strategy, which promotes the best global standards in every case, and works to achieve them.

- Commit to the concept that a level playing field is all that United States industry needs, and become a model of non-nationally centric standards policy, using that moral high ground to lead others to a similar commitment.

- Acknowledge the real issues of emerging economies such as China, and seek "win win" situations that unite rather than divide.

- Devise a new and stronger relationship between standards stakeholders and government, such that the State Department, Department of Commerce and other relevant agencies can be better educated and able to act more effectively in support of building a robust, open and effective global standard setting structure, and deploying United States diplomatic and trade forces more effectively in pursuit of that goal.

- Anticipate increased interest in the governance of the Internet and the Web standards by the United Nations and national governments, and devise the most productive way that this likelihood can be addressed.

- Open a dialogue between industry, ANSI, leading consortia, potential bill sponsors in Congress, and representatives of the Patent and Trademark Office, the Department of Justice and the Federal Trade Commission to proactively address antitrust, patent and copyright issues. The results should address, at minimum, (1) patent issues that are making the creation of infringement-free ICT standards more laborious and less certain, and (2) amending the National Cooperative Research and Production Act to restore protection for standards participants.

- Devise a more robust funding model for standard setting that is more open to participation than the consortium model (which relies on often sizable membership fees, but makes its resulting standards available for free) and more accessible to the standards consumer than the SDO model (which has low membership fees, but sometimes high purchase prices for its standards).

- Educate academia on the need to offer more robust curricula to train not only standards users, but standards developers.

Conclusions: How likely is it that any standards strategy released in the United States (or anywhere else) in the next five years would approximate the vision described above? Not very. But if it is acknowledged – as this author believes it should be – that the future of standards lies in embracing rather than resisting globalism, then it is not too soon to begin a dialogue that may eventually lead to the type of strategy described in this article.

If one looks far enough down the road (and one need not look too far), such a strategy will certainly be needed. And it is always more rewarding to lead than to follow.

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From the Standards Blog

#24 Two Canyons

Standards serve, and perhaps arise in part from, our desire to achieve order in an inherently disorderly world. Increasingly, they insolate us from that reality by creating a global cocoon of interoperability and ease. Of course, when the power goes, so does much of that cocoon. But since we are assured that any failure of the grid will be transient, the reality never sinks in that our perceived world of order grows ever more fragile as we become more and more dependent on its technological underpinnnings.

As the age of discovery brought greater knowledge of Africa and, eventually, the New World, there was a horror in the minds of many Europeans of the savage and the barbarous. This aversion was most famously given voice by Thomas Hobbes, who, in his *The Leviathan*, stated his conviction that "Life in an unregulated state of nature is solitary, poor, nasty, brutish, and short."

For our symbolic forbearers, the Pilgrims, life on the edge of a state of nature was not only brutish, but demonic as well. While we prefer to recall the attractive virtues of our Puritan ancestors – their courage, fortitude and religious conviction – we have conveniently (and predictably) left their darker side out of the schoolbooks. Unlike the Spanish, who regarded Native Americans as new subjects, or the French, who looked to them as trading partners, many Puritan divines viewed the existing inhabitants of New England as servants of the devil.

Conveniently, these competitors for the land coveted by the new arrivals were seen as forces of darkness that must be swept aside. John Winthrop's "City on a Hill" might serve as a beacon for transplanted Europeans, but it was fire (and infectious diseases) rather than light that were cast upon the Indians.

Perhaps it is because we in America have been so successful at carving a modern nation out of a wilderness that we can believe so confidently in our ability to bring order out of chaos, and simple solutions to complex situations. Our way is, or should be, we feel, a standard that all should aspire to emulate. In so doing, life will become easy, and predictable, and orderly.

This conviction was not so easily held even 75 years ago, when many millions of Americans still lived on farms without electricity or running water, and when only about twelve medications prescribed by doctors actually worked, none of which offered an effective defense against the many infections and communicable diseases that culled a significant percentage of the children of almost all families, urban as well as rural, before adulthood. What a luxurious and privileged life we lead in first world countries today, without realizing it, to take order and predictability for granted.

* * * * * * * *

It is twelve hours ago, and I'm parking my four-wheel drive at a trailhead, an hour before dawn. My headlights surprise a desert fox traversing the canyon floor. Turning off the ignition, I sit under a moonless sky, dark but for starlight and the merest blush of incipient brightness on the eastern horizon, just sufficient to outline the sharp profile of arid peaks. My eyes adjusting to the darkness, I start out over the alluvial fan that spreads across the narrowing valley floor as it approaches the mouth of the canyon that I will climb today.

All is indistinct, except for the startlingly luminous skeletons of dead brittlebushes by the side of the trail, somehow concentrating every photon of available starlight, giving it back as a ghostly glow. After awhile, I hear that most wonderful of all sounds in the desert, the interweaving music of flowing water, off in the darkness to my right.

Gradually, the light of the rising sun, still below the horizon, begins to lend shape and substance to my surroundings. As the daily nocturnal/diurnal shift change occurs between the creatures that find safety in darkness and those that parade themselves in the light, the anonymous scrambling of kangaroo rats and their brethren in the brush under the creosote bushes gives way to bird calls. A half-hour before dawn I can just make out the tracks of a mountain lion, broader than the palm of my hand, as they cross my trail. For a while, I track him, and – who knows -- perhaps, for a while, he tracks me.

Eventually, the sun breaks free over the horizon, and the mountains above the canyon walls take fire with the reflected light of another desert dawn. Over the hours that follow, the color passes through intermediate shades of orange until the bright yellow light of full day completes its journey down the canyon walls to reach the trail on the valley's floor. As the day warms, I climb higher up the twisting, deepening canyon, and pass from desert terrain into the first junipers and flowers of higher elevations.

By 8:00 AM I am in the first palm grove, and the trail passes back and forth across the invisibly clear water that cascades over the granite boulders that now clog the floor of the canyon. The boles of the palms are black, scorched by the most recent of the forest fires that periodically sweep the canyon in the natural order of things. But overall, the canyon is again lush and green and luxuriating in the aftermath of the torrential rains that had brought destruction to much of California the week before.

Now the trail disappears and the boulders grow enormous, some towering 30 feet into the air. The cascading stream finds multiple routes over, between, and under the rocks, and palm trees find purchase in the interstices between the interlocking grey masses. In one memorable performance, a silver waterfall drops 20 feet into an almost hidden grotto, maidenhair ferns clothing its walls in a verdant, living tapestry. Increasingly, I need to use arms as well as legs to work my way up any available channel between the random masses of stone.

Eventually, the canyon widens back out into a valley, flanked by steep walls of exfoliating granite. The steel tip of my walking cane yields echoes as it taps the seemingly solid boulders, finding spaces between the layers of living stone wrested apart by sudden transitions from hot sun to cold night.

Sometimes, a climb up a desert canyon can lead you all the way to a sun-drenched mountain pasture, but more often, the way becomes impassable long before. In sedimentary formations, the final impasse is often represented by a "pour over" – a hard layer of rock capping a softer stratum, the latter eroding faster

than the former to create a wall that moves slowly uphill as even the harder rock is ground away. The far grander and more familiar example of this phenomenon is Niagara Falls. But eight feet of loft will serve to block your path in a canyon whose walls are too smooth and steep to scale.

Yesterday, it was a torrential stream that filled the base of the canyon I climbed that finally blocked my way. Today, it is increasingly vertical walls of decomposing granite that lead me to forego further progress, prudence being the better part of valor for solo hikers who have not brought technical climbing gear and companions with them. Instead, I perch on a ledge high above the valley, and take a half hour to listen to the silence, broken only by the musical rhythms of the clear waters still draining the mountains of the recent rains, and watch the hummingbirds harvesting nectar from the spires of yuccas.

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Now it is yesterday, and the scene is very different. I am setting out to climb another canyon, its origins not half a mile from those of its next-door companion on the same mountain peak. But this time, the alluvial fan I clamber across as I begin my day is cut by new, sharply incised and deep water courses, and each is filled by rushing, brown waters, laden with sand and silt from the upper reaches of the mountain.

I was last on this trail some six years ago, and climbed over boulders and through intermittent groves of tall and rustling palms as numerous and beautiful as those just described. Now, those same trees lie stacked and splintered in windrows edging the channels, in numbers that seem impossible to believe. As I climb higher, their numbers increase, along with drifts of palm fronds and other debris, stacked and stuffed behind every obstacle along the way. In all, there are hundreds of scarred and shattered trees, swept from their perches in the unseen reaches of every side canyon entering the main canyon from the base of the mountain to its peak.

As I climb, I find one single grove that is largely untouched, and even unburned, protected behind a mass of boulders the size of small houses that blocked not only the waters, but the wind-driven firebrands of the blaze that had otherwise lain the landscape to waste. But above this grove, I find only one, and then a single pair, of charred palm trees in place of the hundred that had stood there when last I had climbed this way.

What gave rise to the differences between one canyon, experiencing the natural, fire-assisted succession of its life cycle, and the other, devastated by a two hundred year catastrophic event? A single thunderstorm cell that formed over the mountain peak four months before, and hung just above one canyon, largely sparing the other. The torrents that it unleashed, following on the heels of the loss of ground cover from the earlier fire and magnified by the ongoing drought in the southwest, had been sufficient to erase the peaceful palm groves whose memory had brought me back to this place again.

A park ranger, who spied the thunderhead, guessed what was about to occur and rushed to the base of the canyon to see what would transpire. He turned and left in his pickup truck even more quickly, pursued by a 20 foot wall of water that thundered behind him, in his words, "like six freight trains" as the tree trunks and boulders it carried smashed themselves apart on the boulders left behind by the flash floods of days gone by.

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The devastating and mindless path of a thunderstorm, like the hideous and random attack of a tsunami, reminds us that our faith in an ordered and secure world is less justified than we would wish to believe. Do what we may to create a sense of safety and control, nature retains a might whose power is matched in magnitude only by its indifference to the existence of those unlucky enough to live in its path.

As we plan for the future, we would be wise to remain mindful of the limits of our abilities, and to care well for those whose misery is in the present.

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