



Attorneys at Law

Consortium Standards Bulletin

A ConsortiumInfo.org publication

January 2005

Vol IV, No. 1

TRENDS

REIMAGINING A “NATIONAL” STANDARDS STRATEGY

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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 even 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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