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FEATURE ARTICLE:

PAST, PRESENT AND FUTURE: THE ACCELERATING PACE OF CHANGE

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If you are new to standards and standard setting, it may seem like a fairly static process. Even if you are a veteran standard setter, you may not be conscious of just how much has changed in the last ten years. And unless you live your life in the standards arena, you probably don't spend much time musing about what standard setting in the future might be like. But if you did, you might be surprised to realize how much things may be about to change.

Is that a good thing? For that matter, is change inevitable? And if it is inevitable, is there anything anyone can do to prepare for it? We think so, and that's what this story is about.

In order to most effectively plumb the future, it is usually wise to first take a critical look at the past. Appropriately, then, here is a high-level review of how we got to where we are today, with an eye towards gleaning what clues it may hold for the future.

I. A Brief History of the Standard Setting Past

Standards, depending on how you define the term, go back thousands of years. But organized, consensus-based standard setting is primarily a creature of the last hundred years or so. Those hundred years can be divided into ever-shorter distinct eras, each of which was distinguished by an important developmental step.

The First 70 Years: Modern standard setting took nearly this entire period to fully develop. The first modern standards bodies had their genesis in two areas of need that remain relevant today: safety, and interoperability. In the former arena, the first standards involved products like steam boilers, which had a distressing propensity to explode in those pre-regulatory times. Interoperability needs also arose in response to concerns that still exist today: the creation of networks, and the advantages of multiple-vendor environments.

The classic example of the first network standard is the railroad. In the beginning, railroads were disconnected, isolated lanes of travel, owned by local companies. In such an environment, the owner of a railway could set the rails at whatever distance apart he desired. That was fine, until local railways inevitably began to meet, and the advantages of allowing the same rolling stock to pass from one railway to the next became evident.

Similarly, in the pre-production line era, people lived in a world where one craftsperson or shop was responsible for the production of an entire finished product. But with the advent of mass production, mechanical parts like bolts and nuts were expected to "plug and play", and in due course the benefits of being able to buy those parts from another vendor -- and better yet, from one of several competing vendors -- became evident.

But who would decide what the specifications of such parts would be, or how much pressure a boiler should be required to withstand? Over time, the modern standards development organization evolved to solve this conundrum, and proliferated across many market niches. Not surprisingly, international bodies followed, in order to bless one standard or another on a regional or global basis, in order to facilitate international trade and travel.

While standardization initially served the needs of vendor, customer and public safety, it wasn't long before its utility for establishing commercial value was recognized. Certification testing and branding duly followed.

Eventually, the concept of accreditation was developed, as a means of establishing which self-espoused standard setting organizations met minimum standards. In a sense, with the addition of accreditation by national bodies (such as ANSI, in the United States) and international bodies (such as ISO, globally), the standard setting structure could be regarded as complete. And so it was, for a given time and place. The result was the golden age of the "SDO": the accredited, consensus based, low-fee, organization that set standards and sold copies of them to help defray operating costs. Standard setting had become what would commonly be thought of as a "mature industry".

The 1980s: In the latter part of the 20th century, however, the process of information technology (IT) development began to increase rapidly. New innovations gave rise to new commercial and technical demands as well, such as the advent of networks that presented the need to connect more devices, using more software, in more complex ways. Time to market concerns also became extreme, as did competitive jockeying for advantage. The result was the advent of the "consortium" -- a self-selected group of companies organized to achieve a specific, often limited, goal in rapid fashion (whether or not greater speed was actually achieved varied with the organization).

By creating a new entity, free of the need to conform to accreditation requirements, a founding group of companies could write its own rulebook, borrowing as much (or as little) from the SDO model as it wished. It could also decide how much "openness" it wished to provide for, depending on the motivations of the founders and the nature of the need being addressed. For example, if the founders already owned a majority of the market share in the subject area, the balance of the vendors in that space could be expected to meekly fall in line. But if the founders were banding together to confront the market power of a more powerful group of vendors, then openness would be a much-trumpeted feature of the organization, in order to provide the maximum incentive for others to join in.

The proliferation of consortia was rapid. By the end of the decade, scores of such organizations were operating, with varying degrees of success. Most did not have long lives, although a few from that era persist today. The concept itself, however, set deep roots, and the number of consortia launched in the IT space eventually numbered in the hundreds.

A more ambitious model also evolved, although the number of organizations adopting this methodology was small. In this approach, multiple vendors worked closely together, collaborating on the research that would provide new production capabilities more speedily, and sometimes to create actual commercial products. In each case, it was competitive pressures that motivated groups of head-to-head competitors to join together to do what they normally would have done separately.

This new way of doing business was most famously personified by SEMATECH, an ambitious joint research effort that was launched in 1986 in response to the perceived fear that Japan's collaborative business culture, sympathetic government, and more tolerant antitrust philosophy would eliminate foreign competition in the semiconductor space. Fortified by governmental blessing in 1984 in the form of the National Cooperative Research Act, which provided such collaborations with a measure of immunity from the more punitive aspects of U.S. antitrust laws, the major United States semiconductor manufacturers poured hundreds of millions of dollars into their new venture in a successful effort to reestablish themselves in the semiconductor market.

In the software space it was the Open Software Foundation (OSF) that led the way, an open (and also expensive) consortium formed to create a common Unix platform in response to the perceived threat

presented by an alliance formed between AT&T (the owner of Unix at that time) and Sun Microsystems. AT&T and Sun, in turn, formed Unix International with a similar purpose, and the "Unix Wars" that dominated the pre-Windows NT world were off and running. Before they were through, a host of operating-system level consortia were formed.

The 1990's: While the consortia of the 1980s very frequently had either a proprietary, or an anti-proprietary goal, the consortia of the 1990s more typically had an open goal that might just as appropriately have been chartered within an SDO. Many also began to cover broad technical domains, rather than narrow objectives. The Object Management Group, for example, recruited hundreds of companies to engage in enabling a new approach to software development and reuse, while OASIS addressed an ever-widening circle of projects in the XML area.

In response to this loss of market share, SDOs began to look for ways to tempt companies into launching new projects inside an existing SDO, either at inception, or by the later adoption of a consortium-originated standard by the SDO. One such effort resulted in the "PAS Process" of ISO/IEC, which allowed successful consortium standards to be submitted to ISO for formal adoption as global standards. SDOs themselves were also evolving, with some adding many new technical committees in increasingly diverse work areas (see, for example ***INCITS, Then and Now <*** http://www.consortiuminfo.org/bulletins/trends >).

Perhaps most significantly, the open source movement began to gain ground in the late 1990s. While few commercial companies initially paid much serious attention to this new process, hundreds of individual engineers around the globe began to dedicate a substantial part of their personal time to the development of open source code. Eventually, this collaborative methodology became fully formed.

While the development of the open source process was evolutionary, the licensing model that accompanied it was nothing short of revolutionary. More properly speaking, what came into being was a spectrum of open source licensing variants that continues to multiply. At the far left lives Richard Stahlman, doyenne of the free software movement, proponent of the GNU license, and founder of the Free Software Foundation, while on the right exist multiple flavors of licenses created by very much for-profit companies, like IBM. In the middle are scores of license models, most with only minor variations one from another.

II. The Present

Today, the pace of innovation and the forces that call upon the process of standard setting to morph still further continue to accelerate. Some of the principal developments of just the first few years of the 21st century are as follows:

Open Source Comes of Age: Not only has Linux become the darling of major IT vendors like IBM and Novell, but a host of new collaborative activities are springing up around it. Linus Torvalds, the father of Linux, has joined OSDL, the multi-million dollar effort supported by increasing numbers of the largest vendors. At the same time, a host of non-Linux commercial open source projects are also proliferating, supported by the same vendors. Their numbers include Eclipse.org (which has just emerged from under IBM's economic wing), OpenOffice.org (a Sun-sponsored project creating a platform independent, XML based alternative to Microsoft Office), and Time-Warner's Mozilla.org (which continues to develop the Netscape browser and email suite).

The evolutionary circle has also closed, with the creation of consortia to promote open source solutions. The Embedded Linux Consortium, for example, promotes Linux for use in creating embedded applications, and is creating an open, unified platform specification.

Not only has open source code become commercially implemented, but the open source methodology has become ubiquitous as well. One has only to visit the beehive of activity at SourceForge.net to appreciate the variety of ongoing projects, the ease with which new efforts can be launched, and the amount of energy being poured into open source projects. As of this writing, SourceForge boasts an incredible 75,743 individual, hosted projects, and 787,773 registered users.

From an evolutionary perspective, the economy as well as the quantity of the open source model is significant. Conducting work through SourceForge demands none of the extensive infrastructure or budget of traditional standard setting. Critics would point to the same lack of structure as a failing that will inevitably lead to infringement claims (a la the current SCO fracas), quality control issues and lack of focus. Proponents would point to the rich possibilities that can arise from such creative ferment, and note the billions of dollars that companies such as IBM are pouring into Linux, a child of the same process.

What will the future hold for open source? Certainly a continuing formalization of the process of open source development, at least as it is conducted by commercial players. At some point in the future, it is likely that this methodology will become institutionalized in the same manner that the SDO process, and then the consortium process in its turn, became formalized.

Blurring at the Edges: Twenty years ago, a typical consortium would have been easy to distinguish from an SDO in at least some focus and process particulars. Today, this is far less true, with some consortia becoming virtually indistinguishable from SDOs. The W3C, for example, has chartered increasing numbers of working groups, posts its draft specifications for public comment, engages in public policy debates, and operates out of international offices on three continents. Were the W3C to decide to apply for ANSI accreditation, the changes it would need to apply to its process would be few.

Another example of the blurring between the SDO and the consortium process is the fact that in organizations like the International Imaging Industry Association (i3a), both accredited as well as non-accredited processes happily coexist under the same virtual roof. i3a conducts member-proposed "initiatives" where speedy results under a consortium process are desired, and, in addition, acts as the secretariat for the US Technical Advisory Group for the ISO/TC42 process, hosting 11 technical committees in this area.

Convergence: This is the decade when the word "Communications" was added into the traditional IT acronym, acknowledging the business convergence of two fundamental technical areas into the new reality of "information and communications technology" (or "ICT"). The reason is hardly surprising, given the advent of wide area networks, wireless, rich services delivered over cell phones and other devices, and the telecom-enabled Internet as the backbone for almost everything in the IT space.

With this convergence comes a new reality: that standards are increasingly mandatory in the IT space, rendering collaboration on formerly proprietary elements into a practical necessity. Whereas, in the past, a single vendor might hope to create a suite of products and services based on its own proprietary architecture, customers today expect to be able to connect anywhere, anytime, using any device, from any vendor.

This sort of expectation has long been accepted in the communications space, where only extensive suites of standards can permit communications networks to exist at all. In order to access the new business opportunities represented by a wireless, interconnected world, IT vendors now have no choice but to play in the same type of mandatory standards space.

New paradigms: With this new demand for pervasive interconnection comes the need for new technical strategies to achieve ever more ambitious goals. One such strategy is the development of the "Web Services" concept, and 2003 saw a veritable explosion of new standards initiatives intended to make such services a reality. One benefit of this new approach is the promise of permitting the interoperation, rather than replacement, of the enormous installed base of proprietary software.

Whether the ambitious rewards promised by web services evangelists will in fact be realized, or whether the web services approach will prove to be but the latest approach to fall short of its advance billing, remains to be seen. But increasingly heavy bets are being placed by all of the major IT vendors that web services will play a large role in the future of computing.

In the meantime, the balkanization of web services efforts among multiple standards bodies (or, if you will, the inability of a few large vendors to exercise the degree of control they desired in those same bodies) has spawned an intriguing new approach to creating commonalities. That approach was

instantiated in a new organization, the Web Services Interoperability Organization, which explains that it lives "downstream" from standard setting organizations. Rather than standards, WS-I's deliverables include "Profiles", "Sample Implementations", and "Implementation Guidelines". Roughly speaking, WS-I assembles recommended suites of standards created by others in order to address specific needs. (See, "New Wine in Old Bottles: WS-I Brings a New Dimension to the Art of Making Standards Succeed")

III. The Future: Seven Standard Setting Trends to Watch

Manifestly, standard setting has been in a process of constant evolution. What's past in this regard will certainly be prelude -- but to what? Here are seven of the trends that we believe will have the greatest impact on standard setting in the balance of the first decade of the 21st century.

Trend One: The Rate of Change Will Continue to Accelerate: Moore's law famously provides that the number of transistors in a single integrated circuit doubles approximately every 18 months. While Moore's original 1965 observation was limited to one fundamental aspect of technological development, the concept (if not the precise periodicity) of exponential growth extrapolates well across the entire ICT field. Since standard setting derives from and serves the development of technology, it has no choice but to match the same pace, or cease to have any utility at all.

As our brief review of the past has shown, the evolution of standard setting has quickened remarkably. But the increasing pace of technological change, conjoined with hardening domestic and international competitive forces -- and even evolving philosophical ideas about technology and society -- have called for more than the mere compression of allowable time to progress a standard from perceived need to accomplished fact. Instead, we have seen that new methods of standard setting have necessarily been developed to serve these demands, from the consortium process and collaborative efforts like SEMATECH, to open source projects and the WS-I model.

And note also that the sheer output of ICT standards has been increasing at a truly breathtaking rate, with entirely new areas of standards (e.g., wireless, in all of its many forms, as well as web services) arising with increasing frequency, thereby adding to the existing efforts already in place.

To return to Moore's Law and use it as a jumping off point, "Updegrove's Law" of standard setting would observe that the radicalism of evolutionary changes in standard setting has been doubling each time that a new conceptual barrier has been broken over the last twenty-five years. I would suggest that its time for the next leap (see the following article).

Summary: In the future, players in the ICT space will be forced to deploy increasingly significant economic and human resources to the creation, understanding, and deployment of the standards that will be essential to enable new product and services offerings. This will have several major impacts:

- There will be an increasing need for standards professionals with the skills needed to engage in standard setting activities on behalf of companies, as well as manage those same efforts on behalf of SSOs. American universities are not offering the types of courses that produce such individuals, and vendors will therefore be forced to train them internally, or hire them away from other companies that have gone to the expense of supplying that training.

- Major vendors will need to spend greater efforts creating the internal structures needed to vet, staff, and manage participation in standard setting efforts. The magnitude of this effort is already significant, running into the tens of millions of dollars per company per year for the vendors that are the most active standards participants.

- Those vendors that can afford to support -- and influence -- the standards process will be at a competitive advantage over the smaller vendors that cannot, providing another force tending towards consolidation in the ICT industry.

***Trend Two:* Yesterday, Standards. Tomorrow, "Commonalities":** As noted in this month's editorial ("A Look into the Future: Not Standards, but "Commonalities"), the world is moving beyond what traditional standards alone can enable. Here are but a few examples of the forces that demand new approaches:

- More and more things need to work together in more complex ways (think IT over wireless, or the bewildering number of currently active web services initiatives). This requires a more synergistic and coordinated standard setting approach, where interdependent standards must be developed concurrently, rather than sequentially.

- New techniques are increasingly required in order to achieve desired results (think open source and WS-I). As new types of convergence arise, new ways of working together between heretofore-disparate technical domains will need to be explored. (Imagine an implanted insulin monitor employing a wireless transmitter to report data back to clinicians via the Internet to be collected in clinical trial databases to drive development of more effective drug therapies.)

- More types of devices are being employed to access data types that only recently have arrived -- or indeed, have not yet even arrived -- on desktops (think cell phones that are being enabled for picture taking, streaming video, web browsing, and text messaging, as well as simple voice communication).

To give one example of the new world we live in, consider this: pacemakers are now being built that are controlled by wireless signals. Happily, ETSI is at work to designate an internationally acknowledged radio frequency for such devices, to ensure that vacationers celebrating Carnival in Rio will not go into cardiac fibrillation when someone uses a garage door opener outside their hotel room

Summary: Thinking out of the box will be crucial in the future. New approaches to create commonalities, and new types of commonalities, will be needed to address challenges arising from new degrees of complexity and new areas of convergence.

Trend Three: We are Entering the Age of the Global ICT Village: The Internet, Web and wireless technologies have become the backbone of civilization. With this reality comes responsibility, and the standards space will need to adapt in response to this reality.

Up until now, consortia have existed in a largely value-neutral space driven solely by commercial considerations. But with globalism, there will be increasing pressure to take into account linguistic, cultural and other differences among the world's peoples. The need to address these differences is crucial, not just in order to secure the widest market for products and services, but to ensure equal access and opportunity for third world citizens as well. Already, global SDOs like the ITU are assigning major priority to issues of equity, convening the World Summit on the Information Society in an effort to ensure that all peoples share equally in the benefits that the Internet and the Web have to offer. The activities surrounding this initiative span three years, beginning with a first meeting held in Geneva, Switzerland in 2003, and ending with a final conference in Tunis, Tunisia in 2005.

Other existing efforts include the commitment of the W3C to equal global access via the Web, the efforts of the Unicode Consortium to enable all people to communicate via ICT technology using their indigenous linguistic character sets, and ISO's commitment to address ICT challenges presented by physical disabilities.

Other purely technical standards areas are becoming crucial to the operation of society in diverse ways. GIS standards now enable emergency response services of all types, and the challenges presented by national security concerns in our current age of terrorism accentuate our reliance on such technologies. If those who create commonalities do not adequately serve societal interests, it can be assumed that governments at home and abroad may take a greater interest in how commonalities are developed and deployed.

Summary: Standards types that have previously had only commercial significance will increasingly generate societal impacts as well. Standard setting organizations can expect to attract increasing attention from government and NGOs, as well as new expectations from non-members, as the potential for standards to create benefits is compared to the reality of actual standards production and deployment. SSOs will need to adequately meet these expectations, or face competition from, or regulation by, governments that feel a responsibility to achieve specific results.

Trend Four: Government Purchasing will have Increasing Impact on Standard Setting: The good news is that governments are taking increasing interest in standards. The United States, for example, moved legislatively in the 1990s to direct its own agencies to participate in standard setting bodies, to utilize the standards of those bodies in preference to the "government unique" standards that had previously been created and specified in purchasing, and to report their compliance with these edicts.

The bad news (at least, for some vendors) is that the immense purchasing power of federal, state and local governments worldwide can be directed towards specific objectives. The current swing towards Linux by diverse national and local governments worldwide is the most obvious example of this power, but the adoption of RFID technology by the United States Department of Defense may have an equivalent impact in a more narrow technological space, if other agencies follow DOD's lead.

Summary: If current trends continue, vendors can expect that governmental purchasing will have increasing impact on the development and adoption of standards. SSOs and individual vendors will need to address the increasing ability -- and willingness -- of governments to anoint specific standards in order to avoid wasted time and thwarted strategies. All will benefit if the most productive and cooperative relationship possible is forged between private industry and government in the standard setting process.

Trend Five: The New Nationalism in Standard Setting: While standards have always had the potential to be used to erect trade barriers (and that potential has too often been exploited), there are new forces active today that could lead to erosion of the use of standards on a nation-blind basis.

One example is the increasing degree of regional standard setting within the EU. Another is the willingness of China to set "go it alone" standards to advantage local manufacturers in selling into the domestic market. Given the size of the Chinese market, non-domestic vendors are hardly in a position to do anything other than build to the local requirements.

Where regional or local standard setting is in reaction to truly unique needs, such practices may be necessary. But when standards are used to secure commercial advantage for domestic vendors, there is the danger that the approach can provoke similar action by other countries, leading to an all-out "standards war"

Summary: As standards become more important, they may become increasingly attractive to governments looking for new and effective tools to carry out trade policy. Vendors will benefit in the long term if they do not lend support to such activities to gain short-term advantages in specific product areas.

Trend Six: IPR Distractions Will Eventually Abate: The surprise victory of Rambus in its quest to levy royalties on implementers of JEDEC SDRAM standards has had the palliative, if painful, effect of finally making SSOs take IPR process and policy issues as seriously as they should. While previous legal disputes (commencing with the consent decree imposed by the FTC on Dell Computer in 1995) have attracted the attention of standard setting participants in the past, most efforts to implement industrial-strength IPR policies were limited to ensuring that new organizations started up with effective policies that were acceptable to (at least) their founding members. Existing organizations with hundreds of members, however, still largely shrank from the labor and tedium of revamping their often-outmoded and ineffective policies and practices.

With Rambus raking in the royalties on its SDRAM patents, however, many consortia (but fewer SDOs) took the plunge, and embarked on the drafting and consensus building process of amending their existing policies and processes. The specific terms of the policies adopted varied from organization to organization, based upon member tolerances for royalties and other industry-specific factors, but every

organization that completed this process is now far better able to assure predictable and beneficial results for its members than it was before.

The other good news is that, as a result of this crash course in IPR policy amending, many more standards professionals and attorneys are far more conversant with IPR policy terms and the rationales for their usage than they were a short time ago. Where previously it could be assumed that widely divergent views might be expressed by diverse members (and not infrequently even by different legal representatives of a single member), those companies that take the time to join working groups to develop new policies are today far more likely to send knowledgeable representatives that know what they want, why they want it, and where they will have to compromise in order to achieve consensus around a final result.

The bad news is that the effective implementation of these new policies will impose new demands on SSO resources. At minimum, SSOs will need to be far more conscientious in record keeping, as the foundation of IPR policies is the timely disclosure of patent claims that would be infringed by the implementation of a new draft specification. And while sophisticated web-based platforms now exist to assist with this process, their deployment nonetheless takes time and money.

Similarly, it is important that those that conduct the standards development and adoption process within an SSO must be properly trained and supervised, to ensure that patent calls are made at appropriate times, that in-meeting disclosures are recorded and investigated, and that sometimes complex legal distinctions are appreciated and acted upon in an appropriate fashion.

SSOs also need to appreciate the burdens that certain specific IPR policy terms that are preferred by some members will impose on their process. For example, where an IPR policy permits members to own IPR that is collaboratively created during a meeting (and not just IPR that is formally submitted by a single member), detailed minutes will need to be kept to substantiate who in fact may lay claim to what, in order to avoid contentious disputes over the standards that they administer.

Summary: A new level of sophistication has been achieved by the many SSO members that choose to take part in the drafting and amendment of IPR policies. The concurrent negotiation of policies in many organizations has helped refine IPR policy models, and has led to greater recognition of the specific alternative terms that are most suitable to given situations. The industry will benefit in the future from the painful IPR transition process that was occasioned by the very public victory of Rambus, but will need to shoulder a greater burden than in the past in order to properly administer these new policies.

Trend Seven: ***Customer Pull:*** Vendors are used to being the ones that hold all of the cards in standard setting. They are the ones that identify the needs that they believe represent the best profit opportunities, and also launch the initiatives that produce the standards themselves. While this leadership role guarantees a great degree of control over the production end of the process, it creates risk at the other end of the standards supply chain: if customers choose not to buy the standards-enabled products that the vendors have created, then the entire standard setting process will prove to be a costly imbroglio.

2003 saw this dynamic turned on its head in the area of radio frequency identification (RFID) tags, as first Wal-Mart, and then the United States Department of Defense, announced that it would begin to require the use of RFID technology by a broad array of suppliers in the near future. The result was the guaranteed success of a new standards area that at the beginning of the year seemed promising but uncertain, due to the usual standards "chicken and egg" issues: Would demand grow sufficiently to allow the prices of RFID tags themselves to fall to a point of commercial viability? Would everyone in the supply chain climb on board? Would major vendors develop and sell the other parts of the supporting infrastructure?

In one fell swoop, the announcement by these two huge buyers of diverse product types changed the RFID question from "if" to "when" -- and even supplied a deadline for the "when". While the exact trajectory of RFID uptake is yet to be charted (a recent Forrester study predicts that there will still be a lag before the market generally climbs on board), the power of the customer to accelerate the development and adoption of standards was abundantly demonstrated.

Summary: With the flexing of Wal-Mart and the DOD's muscles, a new dynamic has been introduced to standard setting. While vendors will need to scramble to address this new force, they will be well rewarded by lowered risk in placing their bets on new standards-based products and services, and in investing the time to create the enabling standards themselves upon which such products and services will be based. At the same time, SSOs should try harder to create the type of member value propositions that will tempt more customers into the standards development process, so that end results will be optimized, and the more rapid and smooth uptake of standards assured.

IV. Conclusions

As technology becomes more interwoven into all aspects of life, the need to agree upon the commonalities that permit such an increasingly complex system to operate will become ever more vitally important. Already, standards-dependent Internet and telecommunications technologies have become the backbone upon which health services, emergency response, financial transactions and education increasingly rely. One can only assume that this trend, and hence the dependence of society on these services, will increase.

As this dependence increases, so also will the importance of setting the commonalities upon which these and future technology-based systems are and will be based. With this importance may well come new concerns over who is entitled to create these commonalities, and what processes should be permitted to be employed to create them. In the future, vendors may find that they have less of a say over the standard setting process, as other stakeholders, both governmental as well as private, assert a right to influence results.

In consequence, all who are involved in the current standard setting environment would do well to keep an open mind about the future, and to be willing to explore new ways to get the job done. Familiar methodologies that were well adapted to the needs of yesterday may be ill suited to meet the challenges of tomorrow. Those that are most willing to lead the way in creating and embracing these new processes will be the ones that reap the greatest advantages of the commonalities that are created to meet the needs of the future.

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