

The Changing Standards World: Government Did It, Even Though They Didn't Mean To

By Stephen Oksala

Introduction

After a long history of stability, the 90's saw significant change in virtually every aspect of the standardization process. There are many reasons why this happened, but a strong case can be made for the argument that much of that change resulted from the unforeseen consequences of governmental action.

What has changed? It would be easier to catalog the things that haven't changed. Consider the following:

- Standards participants used to primarily be engineers at the technical level and standards administrators at the management level. Their ranks now include business people, government relations professionals, advocates for consumer and other causes, and public servants with a variety of backgrounds. There have always been a few such people, but in recent years there has been a noticeable increase in participation by individuals outside the old categories.

- There are new standards developing organizations that look very different than the old ones. The United States has always had lots of standards developing organizations - but there is now a continuous stream of new organizations that have different characteristics and which seem to be getting much of the standardization business in certain industry sectors.

- Funding of the standards process has gone from a necessary, sometimes painful process for most standards organizations to a state of perpetual panic for many. As a result, the search for new revenue has led to new activities, which may or may not be helpful to the core standards process.¹

- The use of international standards has become commonplace. Historically the international process has been a place to harmonize national standards and - at least for the United States - a place where our technology can be injected into other countries to the advantage of our industry. Now, everyone wants 'international standards' and there is significant disagreement on what falls under that umbrella.

- Even the definition of the term "standard" has

become less precise as different types of documents, developed in very different ways, have become popular. The old standards criteria - openness, balance, due process, and consensus - have been called into question and must compete with new criteria such as speed and market relevance.

Why has this happened? What was it, sometime during the 80's, which caused a process that had stayed the same for so many years to change so dramatically? The main culprits² appear to be the US Government's National Cooperative Research Act of 1984, the European Union's 'New Approach' to regulation, and the World Trade Organization's Technical Barriers to Trade Agreement. Each of these was intended to address a particular need, and each appears to have been successful in meeting that need. At the broadest level, each contributed to a common phenomenon - standards³, and the processes by which they are created, became significantly more important to both public and private sector constituencies. However, there have been side effects; unintended consequences which have affected the standards community worldwide in ways that were not intended by the framers of the government actions.

National Cooperative Research Act of 1984

The National Cooperative Research Act of 1984 (NCRA)⁴ has arguably caused more change in the standards process than any single act in the United States in modern times. The original law was intended to provide a level of antitrust protection to joint research and development efforts so that firms could cooperate on 'pre-competitive' Research & Development activities to strengthen US industry in a global environment. However in certain industries, most notably information technology, the cooperative activity that seemed most useful was a mixture of R&D and standardization - the development or adoption of a technology by key competitors. Over the last decade and a half many groups have 'signed up' under the NCRA, and most of them have had standardization as a significant factor in their work.

Thus, the NCRA is the mother of all the consortia, fora, and other non-traditional standards organizations in the United States.

Why did the NCRA make a difference? There seem to have been two factors. The first was that it appealed to different people. Engineers or standards administrators, who in many cases were not close to the marketing arms of their companies, populated the traditional standards organizations. Those who saw opportunity in the NCRA, however, were those for whom the business aspect of their organizations was primary-marketing and product planning people. They found the new model with its emphasis on results rather than process more desirable. Moreover, they could do a variety of things under the same organizational umbrella - not only standard specifications, but licensing, promotion, and other marketing-related activities that could not, at that time, be done in the traditional standards groups.⁵

The second factor, which has continued to support the growth of consortia at the expense of more traditional standards activity, is a different mindset about what's important. The formal standards process emphasized fairness, openness, balance, due process, and the development of consensus. Neither the time to completion nor the market relevance was considered critical by many of the participants; they had lost touch with their own employer's objectives. In these new groups, however, (where the participants represented most of the same organizations) speed and relevance were primary and the process attributes were secondary. The most important attribute of standardization - consensus - took on a new meaning. Whereas the 'classic' definition would be general agreement among all affected parties, the new definition is general agreement among those who are there and part of the group. This notion of a restricted consensus is one of three common factors⁶ in what are otherwise vast differences in the makeup and operation of these new entities.

The NCRA model is a good match for this approach to standards because it does not require that standardization meet the high level of process integrity demanded of accredited standards committees in the United States. As long as the purpose of the cooperation is disclosed, and the parties identified to the Department of Justice, there are no rules of behavior that are comparable to those demanded by the ANSI accreditation process. Thus,

the United States government had seemingly endorsed a new and lower 'standard' for standardization, and industries were quick to take advantage of it. Competitive pressure for timely solutions guaranteed that the new model would be adopted in areas where there was no obvious and compelling broader public interest in the specifications.⁷

The rush by industry to embrace NCRA-spawned organizations has also had indirect impacts. While the number of standards organizations increased, the budget for standardization in companies and government agencies did not. So in many cases the traditional standards organizations have found themselves on the short end of the stick - fewer participants, less money, and a generally declining level of importance in the overall "standards" world. The consequences of this new competitive environment have been far-reaching, and the traditional standards organizations have reacted. Much of this reaction has been positive - an emphasis on the use of information technology and improvements in their processes to eliminate unneeded administrative overhead. These actions have raised the performance level of most traditional standards developing organizations. However, other changes, which may or may not be improvements, include the following:

- The last few years have seen an increase in the emphasis on certification as an activity for standards developing organizations. Three things seem to be driving this: (1) the need for an alternative revenue source for the standards developing organizations; (2) the emergence of management systems standards; and (3) the increased use of standards in regulatory contexts. The first can be attributed to spreading the same amount of money over more organizations because of the impact of NCRA, while the latter two arise in part because of the regulatory usage discussed in the next sections.

- The standards organizations, in order to compete with consortia and similar NCRA-type organizations, have begun to offer new kinds of services. In some cases, the services offered are administrative. The IEEE Industry Standards and Technology Organization (ISTO) program is a good example. IEEE provides various support services and will publish the results (but not as an IEEE standard), but the participants determine the standardization

process used. In other cases the traditional standards developing organization is actually running two sets of processes - one according to the classic standards model (consensus, balance, openness, due process, etc.) and one according to whatever rules the participants choose to implement. This is happening at the international level as well as in the United States. ISO and IEC are developing new types of documents to meet perceived market needs; the IEC Industry Technical Agreement (ITA) is an example of the "lower-consensus" approach. Whether these activities will result in changes to the traditional processes, and whether standards developing organizations can simultaneously operate different process models without suffering credibility or brand identification problems, has yet to be determined. However, there is no question that the world for the standards developing organizations has changed and will continue to change.

European New Approach

At the same time that the US government was working to improve competitiveness, the European Union was struggling with the horrendous task of implementing a single market. The primary problem in completing this task was the harmonization of different legislation in each country so that products and services could be freely traded across national borders. The European Commission - the civil service of the EU - had the task of developing European-level regulations (called Directives) that would supercede national regulations where necessary. Their target completion date was 1992.

In the early years, the Commission approached this problem in the usual way; government experts wrote the technical regulations. However, they quickly ran into a practical problem - there was so much legislation needed, and so few technical experts, that their deadlines could not be met. Therefore, the Commission adopted a new approach (called, not surprisingly, the "New Approach") to leverage the technical expertise that existed in industry. Their scheme was simple - the regulators would define simple objectives - the so-called "essential requirements" - and industry would develop the technical specifications that define the requirements to meet those objectives. This work would be done in the European-level standards organizations (CEN, CENELEC, and ETSI) by

representatives from the national standards organizations of each member state, and the regulators would then formally adopt reference to those standards as a way (and in most cases the only practical way) to demonstrate that the product in question met the regulatory objective.

A decade later, this novel approach has clearly served its purpose. The 1992 objectives have largely been met, and the process continues to allow industry to have a real voice in the details associated with regulation. It is a model that other governments, including the United States, are beginning to adopt. And most importantly, from the perspective of this paper, it significantly raised the importance of standards. If you have a direct opportunity to influence the details of the legislation that governs your products, you are much more likely to participate than when the connection is vague or non-existent. So the New Approach made standardization much more important to European industry. It also made it more important to United States companies who wanted to market products that met European requirements. Unless they had a technical operation in Europe, those companies were shut out of the European standards process. The natural reaction of United States interests was therefore to advocate that the work be done in the international standards organizations ISO and IEC, and this was successfully addressed through the creation of the Vienna and Dresden agreements with CEN and CENELEC respectively.⁸ Thus the international standardization processes became even more important to United States interests because international standardization had become the 'best game in town' for meeting requirements that would apply to European and, eventually, other regulatory regimes.

As with the NCRA there have also been indirect consequences resulting from the New Approach. As noted earlier, standards developing organizations have increasingly become involved in certification programs. To some extent this has been to maintain financial stability; however, the New Approach can also claim credit for a share of the increase in certification activities. The use of standards for regulatory purposes will tend to drive the creators of the standards to expand their scope into the next closest domain, testing and certification. However, the major impact of the New Approach on certification arose from the belief in the late 80's that

European regulatory harmonization was going to require certification to the ISO 9000 management systems standards. As it turned out, there was never actually a general requirement for either third party certification or the specific use of ISO 9000. But the expectation that it was going to happen led corporations around the world to get certified, and once the bandwagon got rolling, the fact that the expected band leader never got on the wagon was of no consequence. It was inevitable that the approach would then be adopted for other disciplines such as environmental management, and modified to meet specific needs for industries such as automobiles and aerospace.⁹

Finally, there is one way in which the New Approach has exerted pressure opposing that resulting from the NCRA approach. Where the latter tends to encourage lowering the 'standards' for standardizing, the former has tended to raise it because the regulators have to ensure that the results really are the consensus agreement of all affected parties rather than the agreement of special interests. So the standards developing organizations are pulled both ways, and we have yet to see (as noted earlier) whether they can handle the increased tension.

The WTO Technical Barriers to Trade Agreement

The last of the 'big three' government actions that has impacted the standards world is the World Trade Organization's (WTO) Technical Barriers to Trade (TBT) Agreement. The GATT (General Agreement on Tariffs and Trade) has resulted in a steady decrease in tariffs, and thus other things - non-tariff barriers to trade - have become more important in ensuring free markets. The most common form of non-tariff trade barrier is a national or regional standard that has been expertly crafted to give local industry an edge in meeting regulatory requirements. The WTO, in crafting its TBT agreement, recognized this and incorporated the following text:

"Where technical regulations are required and relevant international standards exist or their completion is imminent, Members shall use them, or the relevant parts of them, as a basis for their technical regulations except when such international standards or relevant parts would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued, for instance because of

fundamental climatic or geographical factors or fundamental technological problems." (Article 2.4)

Clearly this makes standardization more important, since there is an expectation that the principle adopted in the European New Approach (regulators define objectives and the voluntary standards community works out the technical details) will become the preferred means for preparing technical regulations. And like the New Approach, this places greater importance on making sure that the standards process meets high standards. But in the case of the WTO agreement there is a problem -the exhortation to use international standards is not accompanied by a definition of what an international standard is!¹⁰ The TBT agreement merely says that an *International body or system* is a "Body or system whose membership is open to the relevant bodies of at least all Members" (Annex 1) and even then makes no explicit connection to standards. The result is a significant philosophical dispute over whether standards are international because they were approved by organizations that have national bodies as members (the so-called "big I" organizations) or because they have been developed by groups with international participation (the "little i" organizations) and accepted internationally. The European Union has argued forcefully for the former definition, while the United States has insisted that the determination should be based on process characteristics that would allow other kinds of voluntary consensus standards development to qualify. But the point here is that this debate has affected United States-based standards developing organizations - they are consciously making sure that their processes could be accepted as international, and they are concentrating on making sure that their membership (and their meeting places) can be seen as international.¹¹ To that extent, the TBT agreement is having an impact - and one which almost certainly was not envisioned by the creators of the TBT, who merely wanted to see the elimination of the use of standards as a barrier to trade.

Looking Forward

We have seen that much of the change that now grips the standards world is the result of governmental action that was never intended to cause that change. The question now is whether trends set in

place will continue, and what further effect this will have on the standards process. Prophecy in these kinds of activities is notably unreliable; however, the following predictions are offered as a tongue in cheek set of possibilities.

- At the insistence of most of the countries in the WTO, the TBT agreement will be clarified to more precisely define both international standards and international standards bodies. Regardless of the resulting definition, there will be negative implications for some United States-based standards developing organizations and unintended consequences for many of them.

- The increasing tension inside standards developing organizations to lower the bar (to compete with consortia) and raise the bar (to make things acceptable to regulators) will result in a more formal distinction between standards that have a 'public interest' component and those that don't. This distinction will be recognized by governments and incorporated into their processes, almost certainly leading to more unintended consequences. The time spent in previous years debating the definition of international standards will now be spent debating whether there is a public interest component in standards that do not affect health, safety, and the environment.

- Standards developing organizations will find a ready market for documents of differing levels of consensus, and will continue to provide them for their industry sectors. It will be determined that outside of the technical experts nobody knows the difference between high and low consensus standards. It will also be determined that, in most cases, nobody cares.

- A consortium will be successfully sued on the basis that its lack of due process caused economic damage to a company. A major effort will be initiated in both the public and private sectors to prevent it from happening in the future, and the NCRA will be revised to include some form of accreditation.

Probably none of these will happen, at least not in the way described. Nevertheless, it seems reasonable to assume that the future will bring new activities in governments and intergovernmental organizations, and that the results of those activities will surprise us all.

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Footnotes

- 1 It appears that in some cases the standards organizations have converted themselves into certification organizations, with standards done primarily to provide new revenue opportunities. While this may not be beneficial to the participants, it's a lot easier way to pay the bills.
- 2 There are many factors that influence the standards processes. The use of information technology has led to both significant productivity for participants and a growing revenue problem (because of the pressure for 'free' standards) for standards developing organizations. The increased importance of international trade has, by itself, caused noticeable shifts in behavior. However, the three factors discussed in this paper seem to have had the most dramatic effects.
- 3 Unless otherwise noted, the term 'standard' in this paper is used to mean any specification that has been agreed by multiple parties, not just documents approved by groups such as the International Organization for Standardization (ISO) or the American National Standards Institute (ANSI.)
- 4 And its successor, the National Cooperative Research and Production Act of 1993, Public Law 103-42
- 5 Assuming that they even knew of the existence of the traditional standards groups. Anecdotal evidence indicates that in many large corporations there was enough organizational separation between the two groups that they were never aware until after the fact that they were participating in both types of standards work.
- 6 Balance of interests is important to the formal process, and can take priority over openness. On the other hand, consortia will have varying degrees of openness but they typically do not care about the classic balance problem. Consortia also do not depend on the sale of documents for financial health.
- 7 The acceptability of these non-traditional organizations was reinforced by Federal agency participation on the same basis as in the traditional groups. Even the Office of Management and Budget (OMB) Circular A-119, which directs agencies to use private sector standards where feasible, refers to "voluntary consensus standards" without reference to the ANSI accreditation process used by traditional standards developers.
- 8 This process met its objectives, but the results have been mixed. For some industry sectors European participation at the international level has overwhelmed American companies, leading to the belief that these agreements were done for the Europeans - although the intent was the opposite. Another example of unintended consequences.
- 9 This is perhaps the ultimate in unintended consequences. An action that was not foreseen took place even when the action that had been foreseen didn't. Had the European Union not indicated that this would be the cornerstone of their process, it is possible that the whole management systems standards phenomenon would never have gotten sufficient attention to get off the ground.
- 10 The European Union does not have this problem because they explicitly limit the process to the formal organizations CEN, CENELEC and ETSI. They also define exactly how the process will work to move a voluntary standard into a regulatory requirement.
- 11 They are also spending a significant amount of management time debating the subject, even though there has never been a dispute in the WTO that addressed whether or not a standard was international.