

**Report on Implementation of Section 12
of the National Technology Transfer
and Advancement Act of 1995**

Prepared by

**Jeffrey L. Jacobs
Utah State University**

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Executive Summary

An efficient system of developing and promulgating standards is vital to the economy's well-being. Section 12 of the National Technology Transfer and Advancement Act of 1995 (NTTAA) was intended to make the nation's standards system more efficient. Specifically, this provision of the law calls for federal agencies to use private sector voluntary consensus standards unless the use of such standards is inconsistent with applicable law or otherwise impractical. Progress has been achieved in the implementation of Section 12. However, obstacles to a more complete implementation exist. The lack of priority given to Section 12 by high-level agency management is perceived as a major obstacle, and a cause of other difficulties associated with Section 12 implementation.

Steps have been proposed to increase the level of priority given to Section 12 by agency management. A forum should be created in which these steps can be debated and refined, by both agencies and private sector standards organizations, in order to determine measures that will be effective in increasing the priority of Section 12 among agency management. Creation of such a forum should lead to improved government-private sector communication and cooperation, facilitating broader implementation of Section 12 of the NTTAA throughout the executive branch.

Background

The Office of Management and Budget (OMB) Circular A-119, issued in 1982, encouraged, but did not mandate, that federal agencies use voluntary consensus standards (VCSs). Although some agencies were heavily involved in increasing their use of VCSs, this original OMB Circular did not achieve a broad level of implementation within the agencies.

The National Research Council's 1995 report, "Standards, Conformity Assessment, and Trade: Into the 21st Century" (National Research Council, 1995) documents the relationship between standards activities and the nation's economic well-being. Standards influence "virtually every sphere of economic activity" (Ibid.). An efficient standards development system leads to higher levels of productivity and economic growth (Ibid.). The development of NTTAA came about largely because of this NRC report (Comer, 1999), and provided for the revision and strengthening of OMB Circular A-119. The Circular was revised in February, 1998, to make the

terminology used consistent with that of NTTAA and to issue further guidance to the agencies. Under A-119, when proposing to use a non-VCS, an agency must now provide a preliminary explanation for why a VCS would not be used, and invite the public to comment. Each agency is required to submit a yearly report to OMB, through National Institute of Standards and Technology (NIST), documenting cases where a non-VCS is used in lieu of an existing VCS, as well as other general information on the agency's standards activities. Section 12 of the NTTAA encourages the participation of federal agencies in standard developing organizations (SDOs) to the extent practical in order to ensure that these organizations develop standards that are suitable for both private and public sector needs. The purpose behind Section 12 was to make governmental use of voluntary consensus standards the rule rather than the exception. This would, in turn, allow government and industry to work together more closely.

The goals of the federal government in using voluntary consensus standards, as stated in OMB Circular A-119, are to:

1. Eliminate the cost to the Government of developing its own standards and decrease the cost of goods procured and of complying with agency regulation.
2. Provide incentives and opportunities to establish standards that serve national needs.
3. Encourage long-term growth for U.S. enterprises and promote efficiency and economic competition through harmonization of standards.
4. Further the policy of reliance upon the private sector to supply Government needs for goods and services.

By properly applying the points outlined in Section 12 of the NTAA and the accompanying Circular, the executive branch of the Federal government helps to safeguard free and fair competition, facilitate innovation and technical progress, and otherwise affect trade, commerce, health, and safety in a positive manner (Office of Management and Budget, 1998).

Section 12 of NTTAA was meant to be a major change (Turner, 1999) in the way agencies work with standards. Such a major change is expected to be difficult to implement within a bureaucracy the size of most federal agencies. In addition, because of the difference in agency missions and situations, it is difficult to compare across agencies the effectiveness with which the Act has been implemented.

FINDINGS

The author's research included interviews with representatives from Congress, OMB, various federal agencies, and several private sector standards organizations (see Appendix B). Important findings discovered through these interviews follow. The author has attempted to order these in a logical fashion, not necessarily in order of importance.

- Progress has been made on implementation of Section 12 of the NTTAA. There exists a wide spectrum across the agencies as far as level of implementation. The benefits intended by the law are being experienced to the degree that the law is being implemented.
- Although progress has been made, there exist difficulties that prevent a more complete implementation of the law. Each agency faces difficulties unique that stem from its particular structure and organization. There are also difficulties that are common to most agencies.
- The difficulty most commonly expressed by those directly responsible for the law's implementation within the agencies is the lack of priority given to the law by agency management. Individuals interviewed believe this is a cause of most other obstacles encountered within agencies. Some private sector standards organizations have also recognized this fact, and want to work with agencies to increase the level of priority given to transitioning to private sector voluntary consensus standards as the law requires.
- The goal of the NTTAA was to save money as the agencies ceased developing their own standards and relied on VCSs. Like many cost-cutting moves, the savings promised by Section 12 have not been immediate. Thus, the agencies find themselves in an awkward transition period in which they have been asked to give up their own standards, but are not able to fully participate on all the private sector SDO's technical advisory groups that they deem necessary. This problem is aggravated by both budget cuts and the early retirement of qualified technical experts (Hastings, 1999). Most agencies, if not all, currently find themselves in this transition period.
- Although agencies as yet have not documented savings, the regulated community might experience short-term savings as a result of the law's implementation (McKiel, 1999).

- The real savings for the regulatory agencies will not accrue from discontinuing their own standards development activities, but rather because they will no longer have to justify in-house technical standards, incorporated into proposed regulations, that differ from VCSs (McKiel, 1999).
- The difficulty of quantifying the financial benefits contributes to the lack of priority given to Section 12. If it could be shown that Section 12 has saved millions of dollars (which it probably has in some agencies), it would be much easier to obtain additional resources for further implementation.
- Before using a standard, the agencies must search the available body of VCSs to determine whether a suitable VCS exists. This is a huge task that will only grow more resource consuming as the available body of VCSs grows with time.
- Some private sector standard developers have liberalized the law's intent by simply converting existing federal regulations and standards to voluntary standards.
- The goals and viewpoints of both agencies and private sector standards organizations are similar. Both believe implementation of Section 12 is beneficial. Many believe the biggest obstacle to further implementation is the lack of priority given to Section 12 by agency management, and would like to see steps taken to raise the level of priority.
- There are many ideas on how to increase the level of priority of Section 12 and to overcome other obstacles. Interagency Committee on Standards Policy (ICSP), established and coordinated by NIST, allows the views of the agencies to be brought together. However, there has not existed a forum to bring together the views of agencies with those of the private sector. Such a forum would allow ideas to pass through the refining process of public debate and scrutiny, exposing pros and cons of each idea. NTTAA was meant to establish a partnership between government and private sector. This partnership's effectiveness requires enhanced means for improving the dialog among these different players.

Although standards influence “virtually every sphere of economic activity” (National Research Council), Section 12 of the NTTAA has not received public attention. This is probably due to the technical nature of this provision, as well as to the limited number of those directly affected by the law. Because of this lack of public awareness of Section 12, there is an increased

responsibility for all interested parties (e.g., government agencies, Congress, OMB and private sector groups) to maintain vigilant oversight over the process of implementing the law.

Perspective of Agencies, Congress, OMB, and Private Sector

Federal Agencies

The agencies are facing a transition period in which they have been asked to make a major change in the way they handle standards. Agency management and staff responsible for implementation of Section 12 face not only a shortage of resources, but also the task of overcoming the inherent bureaucratic resistance to change. They are charged with the task of significantly altering the course of a gigantic organization, a process that takes time and patience. Underfunded and undermanned, the implementation of NTTAA in the agencies can be expected to take time.

While significant obstacles remain, the shortage of resources and the bureaucratic resistance to the implementation of NTTAA are simply symptoms of the lack of priority given to Section 12 by those in a position to set agency priorities. Responsibility for implementing Section 12 does not typically rest with those responsible for setting agency priorities. In addition to the obvious effects on resource allocation, the lack of attention given to Section 12 by the higher levels of an agency causes a similar lack of attention throughout the agency itself, making Section 12 a difficult task for those responsible for its implementation. With little or no incentive and recognition from above for work with standards, it stands to reason that it will not be accorded much importance throughout the rest of the agency organization.

Congress

The House Science Committee has yet to undertake oversight on Section 12 since the passage of NTTAA. They are cautiously approaching the issue, desiring to have more information on the current level of implementation before taking any action. Possible steps include holding a hearing on its implementation or sending a letter to agency heads inquiring about the state of the law.

Office of Management and Budget

OMB staff indicated that they will not take any immediate action above and beyond the brief review of annual reports before sending the reports to Congress, as required by the NTTAA,

and the occasional “ironing out” of small trouble spots. The reasons given are to allow the agencies more time to implement the law, and to allow the agencies a chance to report back on their implementation. Since the law went into effect, Congress has made no specific requests of OMB concerning Section 12 implementation.

Private Sector Standards Organizations

While private sector standards bodies are pleased that progress has been made in implementing the law, they see that there is still work to be done. They see a need to establish and maintain a position from which they can effectively influence the process of implementation of Section 12 of the NTTAA. They recognize the need to continuously monitor the agencies’ implementation of the law on a continuing basis, and to work on a case-by-case basis with specific agencies when it appears that a problem or misunderstanding has developed. They are seeking ways to work more effectively with the agencies. Some standards organizations are concerned that, although progress has been made by individual agencies, that progress will dissipate if the level of importance of Section 12 implementation is not raised. The private sector must be willing to devote sufficient attention to this matter in order to maintain a position of influence. These standards groups also recognize their own responsibility in the process, that of being especially attentive to develop standards that meet government needs.

It would be an oversimplification, however, to assume that all private standards groups are on the same page as far as what steps they would consider appropriate to overcome the lack of importance given to implementation of the law. Some SDOs feel stronger about this than do others. But they all share virtually the same goal; i.e., completing the transition to private sector voluntary consensus standards as prescribed by the law. And many share the view that without making their presence felt by working together with the agencies, Section 12 of the NTTAA would eventually be a forgotten law. The challenge for the private sector standards community will be to combine their efforts, working together to safeguard their interests.

The agencies, Congress, OMB, and the private sector see the importance of raising the level of awareness of Section 12 within the higher levels of the agencies. Many recognize the fact that private sector standards organizations will be responsible for overseeing that the law is implemented. These organizations must also be attentive to any potential trouble spots that might occur. All recognize the increased level of responsibility of private sector SDOs in developing

standards that meet government needs, as well as of the responsibility of the agencies in assiduously working to follow the law.

Recommendations

Measures calculated to raise the level of importance of Section 12 within the higher levels of the agencies can be taken, empowering those responsible within the agencies to make implementation more efficient and effective. Any proposed steps need to pass through the refining process of public debate involving the input of some, and maybe all, of the following stakeholders: the effected agencies, Congress, OMB, and private sector standards organizations. The ICSP is the obvious entity to take the lead a government effort to work with the private sector to determine what steps could be beneficial. Both Congress and OMB would likely support actions taken by the agencies or the private sector that are designed to further the implementation of the NTTAA's standards provisions.

- Some minor changes that have been proposed to increase the level of importance of Section 12 are briefly discussed in Appendix A. Many of these were proposed by a particular agency or SDO. The input of many, if not all, interested parties is needed in order to determine their feasibility and to understand the not-so-obvious consequences of the proposed change. Each agency and private sector standards organization is in a different situation, with different interests at stake, making each of their viewpoints valuable and essential. It is the author's intention that the ideas in Appendix A serve as a catalyst to the development of more refined ideas that can make the implementation of Public Law 104-113 more efficient for all involved.
- A forum should be established where each interested party, both private and public sector, can be involved in public discussion that will serve to develop and refine ideas such as those in Appendix A. The process of developing and refining proposed changes is analogous to the voluntary consensus standards development process itself. That is, just as VCSs are developed by a process characterized by openness, due process, transparency, and consensus, so should be the process of determining which ideas will be most effective in raising the level of importance of Section 12 among the higher levels of the agencies. The question is whether sufficient support exists for the development of some type of forum to explore proposed changes. Both private sector

standards groups and the agencies would necessarily play a pivotal role in the development of such a forum.

- It is the author's suggestion that such a forum would be most effective if it included a sit-down-at-the-table, get-hands-dirty attitude towards developing and refining ideas designed to raise the level of priority of Section 12. This forum may be a topic, or possibly *the* topic, of a conference, or conferences, related to Section 12 implementation. Or there may exist another style of forum that would be more suitable. Designation of the style of the forum is a decision best left to those that are involved in the day-to-day implementation of Section 12.
- Private sector standard organizations should organize themselves to develop goals, develop a strategy to achieve those goals, and find out how much support exists to work with agencies in an effort to champion proposed changes. There is a wide spectrum of views on Section 12 among the private sector standards groups. Not all SDOs view Section 12 implementation as an issue of sufficient importance to merit the devotion of effort and resources.

Section 12 of the NTTAA was intended to increase the level of partnership between government and private sector. As such, both agencies and private sector standards organizations have the responsibility to be persistent and indefatigable in its implementation. When the agencies and private sector work together effectively to raise the level of priority of Section 12 within the higher ranks of the agencies, obstacles to Section 12's implementation can be alleviated.

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Appendix A

Many procedural changes have been proposed to increase the level of importance of Section 12, many of which will be discussed here. However, the potential benefits and side effects of the proposals are, in most cases, based on the opinion of a small number of people. Before any of these proposals arrived at the point where it could realistically be considered, it would first have to pass through the refining process of public debate and scrutiny. Public debate and scrutiny of the following ideas will lead to either the potential acceptance of one or more of these ideas, or to the formation of new ideas and proposals. In either case, it is the author's intention that the proposals mentioned here will serve as a catalyst to this public debate and scrutiny.

The author wishes to make clear that he does not necessarily endorse any of the proposals mentioned here. They are merely suggestions that the author discussed with agencies, private sector standards groups, OMB, and Congress.

- Publicizing successful case studies of Section 12 implementation, involving high-level agency people on private sector board of directors, providing recognition to those that have been instrumental to Section 12's implementation, and sponsoring or contributing to conferences designed to further the implementation of Section 12 can benefit those responsible for Section 12 implementation, as well as serve to raise the level of importance of Section 12. Both agencies and private sector standards groups can be involved in such efforts.
- Under the Government Performances and Results Act (GPRA), each agency is required to have a results-oriented Strategic Plan. Encouraging, or even requiring, agencies to discuss their standards activities in their GPRA plan would be with the intention of helping standards activities achieve a greater level of priority. Congress is involved in the updating of each agencies' Strategic Plan, and could therefore act as a catalyst to inclusion of standards activities in an agency's Strategic Plan. Inclusion of standards activities in the Strategic Plan would involve little or no cost.
- Another idea similar to the inclusion of standards activities in the GPRA plan is to have each agency develop its own plan and procedures for implementation of Section 12. Some agencies have already drafted documents along these lines.
- Elevating the level of management participation within each agency that is required to respond to requirements of Section 12 of the NTTAA would have a couple of effects.

First, this would increase the exposure of high-level agency management to Section 12. Second, the hope is that raising the level within the agency at which the report goes before becoming “official” would result in a more thorough report.

- The process of searching available private sector standards is a new thing for many agencies. Some agencies have expressed the need for training programs to instruct agency personnel on this process. These programs could be internal to an agency, or could be put on by an entity such as Office of Personnel Management.
- A published updated list of standards in use by an agency would allow private sector standards groups to know the agency’s standards needs. Encouraging, or even requiring, the agencies to develop such a list would also be designed to serve as additional impetus to devoting resources to further the implementation of Section 12. These lists may eventually be used to decrease the burden of the required yearly reports. Many agencies have developed, or are in the process of developing, such lists.
- Money could be appropriated to help the agencies overcome the difficulties associated with the transition period, as described earlier. This money would be used to allow the agencies to participate in more private sector standards developing bodies, which in turn would allow them to phase out agency-specific standards at an accelerated rate. This phasing out of agency-specific standards at an accelerated rate would be designed to lead to savings greater than the initial amount appropriated.
- Most familiar with Section 12 believe that it will save money. However, there is no accurate method of determining the financial impacts of Section 12. Developing a viable method of measuring the financial effects of Section 12 would be instrumental to achieving a greater priority for Section 12 and obtaining additional resources to accelerate its implementation.

Any contact with high-level agency policymakers can be viewed as an opportunity to spread the gospel of Section 12. Both formal and non-formal methods can play an important role in increasing the level of awareness of Section 12.

Appendix B

This paper is the result of the author’s involvement in the Washington Internships for Students of Engineering (WISE) program. The 10-week WISE program’s purpose is to educate undergraduate engineers about the policymaking process, especially as it relates to technical issues. As part of his research, the author held private interviews with representatives of several federal agencies and departments, private sector Standard Developing Organizations (SDOs), American National Standards Institute (ANSI), Office of Management and Budget (OMB), and key staff of the House Science Committee. The author attempted to understand as many viewpoints as possible during the short duration of the WISE program.

Federal agencies and departments that the author corresponded with include Department of Defense (DOD), Environmental Protection Agency (EPA), Food and Drug Administration (FDA), National Aeronautics and Space Administration (NASA), National Institute of Standards and Technology (NIST), and Nuclear Regulatory Commission (NRC).

Private sector standards organizations with which the author corresponded include Aerospace Industries Association (AIA), American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), American Society of Mechanical Engineers (ASME), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), Institute of Electrical and Electronics Engineers (IEEE), National Fire Protection Agency (NFPA), and Underwriters Laboratory (UL).

For comments, further information, or other correspondence, the author can be reached at:

1706 E. 1500 N.
Logan, UT 84341

SL5CZ@CC.USU.EDU
(435) 752-8889