

A National Survey of United States Standardization Policies

By

The Center for Global Standards Analysis

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Edited by

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Table Of Contents

	Page
Introduction.....	5
Executive Summary.....	7
Aerospace Industries Association/ Strategic Standardization Forum for Aerospace.....	15
Alliance for Telecommunications Industry Solutions.....	20
American National Standards Institute.....	23
ANSI-ASQ National Accreditation Board.....	30
American Society of Mechanical Engineers.....	31
ASTM International.....	33
BICSI.....	36
GE Consumer and Industrial Lighting.....	38
GTW Associates.....	39
Michele K. Herman.....	44
IAECT.....	48
IEEE.....	49
Indiana University.....	52
Information Technology Industry Council.....	53
Institute for Trade, Standards and Sustainable Development.....	57
National Council for Prescription Drug Programs.....	60
National Electrical Manufacturers Association.....	61
National Fire Protection Association.....	68
National Marine Manufacturers Association.....	68

Society of Cable Telecommunications Engineers.....	69
Society of Fire Protection Engineers.....	71
Standards Engineering Society.....	71
Standards and Regulations.....	73
Telecommunications Industry Association.....	73
Toy Industry Association.....	74
United States Technical Advisory Group for Energy Management.....	75
University of Colorado (Boulder).....	77
Water Quality Association.....	78
Appendix (Survey Invitation).....	79

Acknowledgement

In the spring of 2009, the Center for Global Standards Analysis (“Center”) conducted a national survey concerning United States development policies for private-sector technology standards and standards education programs. Survey invitations were sent to private sector corporations, standards development organizations, firms and universities.¹ The Center received 28 responses to the survey. The Center is very grateful to the organizations and individuals for the time and effort used to respond to the survey.

The Center for Global Standards Analysis

The Center is a nonprofit corporation located in Washington, D.C. The purposes of the Center are to conduct research, establish education programs in the field of global standardization, and make presentations on the strategic value of standards education programs. Since 1999, the Center has supported the graduate course *Strategic Standardization* in The Catholic University of America School of Engineering program for Engineering Management. The course on *Strategic Standardization* is one of six courses on standards offered among the 2,500 universities and colleges in the United States. Other standards courses are offered at the University of Colorado (Boulder) Center for Advanced Engineering and Technology Education, University of Pittsburgh School of Information Sciences and Telecommunications, Purdue University College of Technology, Seattle University School of Law and Yale University School of Law.

Members of the Center include: Jean-Paul Emard, Alliance for Telecommunications Industry Solutions; William Fox, Purcell & Fox, LLP; John Kenny, The Eluminate Group; Dr. Linda Garcia, Georgetown University; Laura Hitchcock, Boeing Corporation; Barbara Kotschwar, Peterson Institute for International Economics; Stephen Lowell, U.S. Department of Defense; Amy Marasco, Microsoft Corporation; Mary McKiel, U.S. Environmental Protection Agency; Donald Purcell, The Catholic University of America; Ronald F. Silletti, IBM Corporation; James Walters, Air-Conditioning, Heating, and Refrigeration Institute; and Erik Puskar, U.S. National Institute of Standards and Technology (Liaison).

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¹ See The Center’s Invitation To Comment, Appendix A.

Introduction

Significance of Standards and Standardization

From the Center's perspective, significant global economic, political and social circumstances are being driven by engineering, technology, science and globalization. The Center anticipates a future which is more complex, competitively intense, and in which standards and standardization systems will play an increasingly important role.

For example, since 1999, it has been generally accepted that private sector standards and government technical regulations directly affect at least 80% of world trade.² In 2005, Congress estimated that private sector standards and government technical regulations directly affected at least \$7 trillion (US) of world trade in 2003.³ In a world dominated by rampant globalization that will remain so for the foreseeable future, technology standards play a critical role. (*The World is Flat*, Thomas Friedman, 2005).⁴ Standards influence everything we do (UK National Standards Strategy, 2003).⁵ Standards control markets (German National Standards Strategy, 2005).⁶ Moreover, standardization is one of the most powerful sources of competitive economic intelligence available (French Standardization Strategy, 2006; Canada National Standards Strategy, 2005).⁷ Put simply, the evidence is overwhelming that standardization programs offer one of the best, most important means to evaluate current technology and provide a glimpse of where future technology innovations may occur. Standardization programs are indispensable for the strategic evaluation of technology and the analysis of competitive issues. In strategic terms, "If you control an industry's standards, you control that industry lock, stock, and ledger" (*Out of the Crisis*, by W. Edwards Deming, Center for Advanced Engineering Study, published by MIT Press at 302, 1986).

Purpose of Survey

In March 2009, following a discussion with the Staff Director, U.S. House of Representatives Subcommittee for Technology and Innovation, House Committee on Science and Technology, the Center initiated a nationwide survey of private sector corporations, standards development organizations, firms and universities to determine answers to the following questions:

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

² See Report on *Regulatory Reform and International Standardization* (OECD 1999).

³ U.S. House of Representatives Congressional Hearing: China, Europe and the Use of Standards as Trade Barriers: How should the U.S. respond? (May 11, 2005)

⁴ <http://www.thomasfriedman.com/worldisflat.htm>

⁵ http://www.nssf.info/resources/documents/Guide_to_NSSF.pdf

⁶ http://www.din.de/sixcms_upload/media/2896/DNS_english%5B1%5D.pdf

⁷ http://portailgroupe.afnor.fr/v3/pdf/strategystandardization_2010.pdf ; <http://www.scc.ca/en/nss>

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

The primary purpose of the survey was intended to evaluate the effects of globalization on current United States policies related to the development of private-sector technology standards and whether any changes should be made to United States policies for development of such standards. The second purpose of the survey was to evaluate United States efforts being made to achieve the goals and objectives on standards education as set forth in the United States Standards Strategy, Section 10.⁸ A copy of the Center's invitation to participate in the survey is attached to the survey.

About the Editor

Donald E. Purcell is Chair of the Center. He is a member of the adjunct faculty at the Catholic University of America School of Engineering where he teaches a graduate course, *Strategic Standardization*, and the School of Law where he teaches *Cyber Law*. In 2008, the Standards Engineering Society conferred the Fellow Award upon him in recognition of his dedication, leadership and valuable contributions to the principles and practices of standardization. Since 1999, he has been teaching, giving lectures and presentations on the strategic significance of education programs for global standards and standardization systems in North America, Europe and Asia. See www.strategicstandards.com to review the curriculum, course content and graduate student research papers for *Strategic Standardization*. Interested parties who have comments on the survey or this report should submit their comments to: donpurcell@strategicstandards.com or purcelld@cua.edu.

⁸ See US Standards Strategy at http://www.ansi.org/standards_activities/nss/usss.aspx?menuid=3

Executive Summary

United States Policies Concerning Development of Private-Sector Technology Standards

In considering whether globalization effects current United States policies regarding development of private-sector technology standards, the virtually unanimous view from survey respondents is that current United States policies for the development of private-sector technology standards are working well, and that no changes to those policies or the current balance of private-sector/public sector partnership relating to standards are necessary at this time. Examples of this view are set forth below. Note some survey responses express caution concerning certain issues that may occur during development of global private-sector technology standards.

Examples of survey responses that express the view that current United States policies concerning development of private-sector technology standards are working well include the following:

Aerospace Industries Association

There is no need to change policies related to the current industry-led and government-supported standardization system. The US aerospace industry is over a century old, as are many of the standards developing organizations supporting aerospace, and the current standards system not only works well, but is critical to supporting and maintaining the certification and acceptance of our products. As shown in the examples below, the current standards system, as it supports the aerospace industry, is built upon a successful public-private partnership. The US aerospace industry does not endorse the need for any changes to current US policies related to standards development nor do we think that an increase in government intervention or oversight would add value or result in a stronger system. (AIA/SSFA at 16)

The aerospace industry has long been global. Our products fly from one part of the globe to another, or even orbit the entire globe multiple times a day. And the huge aerospace supply chain is extensively international. So while globalization may be new for some industries, it's been a way of life for aerospace for a long time. And the current standards system has always facilitated the global development, sale and operation of our products. No changes to current standards policies are necessary for the aerospace industry to function more globally. However, the industry would welcome US government support to help encourage those regions or nations beginning to develop an aerospace capability to utilize the existing standards infrastructure rather than creating new systems. Creating new or alternative standards systems would only fracture the standards structure supporting the certification of US aerospace products and decrease the efficiency and quality of aerospace standardization. (AIA/SSFA at 18)

Alliance for Telecommunications Industry Solutions

The Alliance for Telecommunications Industry Solutions (ATIS) strongly supports the existing policies surrounding the development of private-sector technology standards. These policies promote the timely development of innovative industry specifications with

appropriate input from all stakeholders. ATIS believes that any significant changes to these policies could disrupt the standards development process. (ATIS at 20)

American National Standards Institute

No change to the current private sector-led and public sector-supported standardization system is warranted. As shown below, the current system works well and has been adapted to the integrated global economy through the United States Standards Strategy. (ANSI at 23)

The impact of Globalization does not dictate a different approach, it shows even more clearly that the current system is working. Every year many U.S. national standards are adopted as International Standards. Every year more and more overseas participants join U.S. standards developing committees and more and more foreign governments enter cooperative agreements with U.S. standards developing organizations. Indeed, the framework for U.S. participation in international standards was agreed to by all interested parties in 2005, when ANSI, working in conjunction with stakeholders, in government, industry standards developing organizations, consortia, consumer groups and academia, developed the United States Standards Strategy (“USSS”) which reflects a commitment to a sector-based approach to voluntary standardization activities and a recognition of the need for standards designed to meet stakeholder needs irrespective of national borders. The USSS was designed to meet the need for a statement of purpose and ideals and to provide a vision for the future of the U.S. standards system in today’s globally competitive economy. The USSS expressly recognizes that “global standardization goals are achieved in the United States through sector-specific activities” and a “market-driven, private sector-led approach.” (ANSI at 25)

American Society of Mechanical Engineers

ASME believes that the impact of Globalization reinforces the need to maintain the current U.S. policy which encourages robust and diverse intellectual input in standards development. The current system supports the ability of U.S. based standards development organizations to remain inclusive and better meet principles and criteria established by the World Trade Organization (WTO) Technical Barriers to Trade Agreement (TBT). (ASME at 31)

ASTM International

In summary, existing U.S. policies promote public-private sector standards development efforts that reduce the cost and improve the management and effectiveness of government, while reducing global technical barriers to trade. While ASTM and other standards developers have demonstrated great success in working cooperatively with governments, consumers, industry and other stakeholders to craft voluntary consensus standards that meet current regulatory needs in the U.S. and elsewhere, it is vital to the competitiveness of U.S. industry and the safety of the public that the U.S. government continue to promote the globally agreed upon policy of basing technical regulations on international

standards that meet WTO TBT Agreement principles. For additional information, please see “The U.S. Standards Strategy”, a statement of policy supported by ASTM International and a broad consensus of interested parties including other standards development organizations, corporations, government agencies, and academic representatives. (ASTM International at 34)

IEEE

The current U.S. standardization system bears many marks of success. The National Technology Transfer and Advancement Act of 1995, directing federal government agencies to use standards developed by private, voluntary consensus standards bodies instead of developing their own standards or regulations, has borne fruit. Industry and government have formed successful partnerships in the standards arena, and the U.S. federal government has found significant cost savings as a result. (IEEE at 49)

Information Technology Industry Council

ITI does not believe fundamental changes to the standardization system are needed. The U.S. ICT industry has experienced continuous growth in productivity and innovation over the past four decades, but the beneficial impact of ICT on virtually all sectors of the U.S. economy and every aspect of society has been even greater. This growth could not have been achieved without the voluntary collaboration of private industry stakeholders in partnership with government in the development of globally relevant ICT standards. Moreover, the rate of ICT growth and innovation requires a system of standardization which utilizes consortia and other standards-setting organizations in addition to the international standards bodies (ISO, IEC and ITU). (ITI at 53)

National Council for Prescription Drug Programs

NCPDP does not recommend a change to the current private sector-led and public sector-supported standardization system. The U.S. government, via the Department of Health and Human Services (HHS) is an active supporter of the current standardization system work on the Health Insurance Portability and Accountability Act (HIPAA) and the Medicare Modernization Act (MMA), for example, further government intervention is not warranted; further government participation as stakeholders is welcomed and encouraged. (NCPDP at 60)

Society of Cable Telecommunications Engineers

My immediate reaction is that we do not need to change US policies for the development of private sector standards. Our system admittedly has some flaws, but I think it has stood up very well against that of other countries and is consistent with our own national culture. (Society of Cable Telecommunications Engineers at 69)

Examples of survey responses that urge caution in development of global private-sector technology standards include the following:

IEEE

[T]he current structure built to address globalization in standardization lacks the necessary dimensionality to represent the real environment. Today's standards are developed in global cross-industry/government/academic/standards community collaboration. Students and professionals in all geographies need to remain competitive to participate in this environment. Market needs, technical needs, economic needs are not necessarily met—or even reflected—in the standards system in place in the world today. (IEEE at 50)

Note that while national borders are somewhat transparent when it comes to actual standards development work, inside the standards system itself, these borders become visible. This can have a positive or negative impact, and caution is required. There are those who view the standards setting process as a way to compete with the rest of the world rather than as a platform to enable competition and innovation. National governments, including the U.S. federal government, must avoid temptations such as using standards themselves as competitive tools or means to erect barriers to trade. (IEEE at 50)

Indiana University

The US needs to encourage a discussion and perhaps negotiations about the proper relationship between standards and national security. We are very concerned about China's information security standards, but their policy is rooted in an exception that is provided for in the WTO TBT Agreement. However, there is no genuine consensus on the meaning of "national security" and how broadly the exception can be applied. (Professor Scott Kennedy at 52)

National Marine Manufacturers Association

[M]aintenance of international standards and the need for U.S. representation at these tables is mandatory if the U.S. is to both represent and fight for U.S. interests. However, the costs of this involvement, both in time and money, is increasing to the point where the U.S. industry is not able to adequately fund U.S. involvement in the international standards process. It is in this area that the government can play a much larger role and help to financially assist U.S. industry experts in international standards work. (NMMA at 68)

Standards Education

In 2008, the Center conducted a global survey on the issue: *Do Standards Education Programs Have a Strategic Value?* The survey confirmed that standards education programs do in fact have strategic value.⁹ To gain a more complete understanding of the strategic value of standards education programs, interested parties are invited to review 2009 survey responses to the question

⁹ See global survey at http://www.ansi.org/news_publications/print_article.aspx?articleid=1947

on standards education, the Center's 2008 global survey report, and standards education workshops held by the U.S. National Institute of Standards and Technology.¹⁰

2009 survey responses were virtually unanimous in their view that standards education programs are necessary and need to be broadly supported. For example, survey respondents made the following statements:

Aerospace Industries Association

The Strategic Standardization Forum for Aerospace endorses the position that the United States should increase its support for standards education. Standards, like any other tool, are most effective in the hands of those trained in their development and use. (AIA/SSFA at 19)

Alliance for Telecommunications Industry Solutions

ATIS believes that additional standards educational support would be beneficial to U.S. businesses and consumers and would enhance the nation's competitive position in the global marketplace. Standards are ubiquitous worldwide. Such educational support could provide the incentives, either through course curricula and/or materials development, grants, etc., necessary to prepare the next generation workforce with the underpinnings of how products and services can interoperate and be interchangeable. Such support should be introduced, at a minimum, at the post-secondary level in various courses of study. While engineering typically is considered the academic focus of standards education, other disciplines have an effect upon, or are affected by, the standards development process. These would include business, law, medicine, and environmental studies. (ATIS at 22)

American National Standards Institute

Yes, the United States should increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace. ANSI endorses Strategic Initiative 10 of the United States Standards Strategy (which provides: "Establish standards education as a high priority within the United States private, public and academic sectors"). (ANSI at 27)

American Society of Mechanical Engineers

ASME believes there should be a renewed focus on standards education. With Globalization and rapidly developing technologies, engineering and technical education should include a standards component that may include education about the standards development process (including WTO/TBT principles), the role of standards in regulation and application of specific standards related technical content as may be appropriate based on a student's field of study. . . . Promotion of standards education can result in a larger pool of talent from which participants may be drawn to engage in future standards

¹⁰ See 2009 NIST 2009 workshop at <http://ts.nist.gov/Standards/Promoting-Education-About-Standardization.cfm> ; see 2008 workshop at <http://ts.nist.gov/Standards/ICES-Workshop-Presentations.cfm>

writing activities. This can help ensure the longevity of the private voluntary technical consensus standards development process. . . . The U.S. government can increase its support of standards education and may wish to consider grants to standards development organizations to create specific course content for universities and colleges. Schools may also be given incentives to introduce standards related courses into their curricula. (ASME at 32)

ASTM International

Yes, the United States should increase its support for U.S. standards education programs at the University level. Globalization in the marketplace and rapid changes in technology in the 21st century demand that engineers acquire the skills necessary to be immediately effective upon graduation. In addition to the math and science skills important in engineering curriculum, today's engineers must acquire knowledge of standards and their role in defining specific procedures, rules and guidelines. Two other key components for students to understand are the processes by which standards are developed and the regulatory policies and agreements that have been written surrounding standards. (ASTM at 34)

Understanding the challenge that the authors of engineering curriculum are already confronted with to fulfill ABET requirements within the context of a four year degree program, the United States should support the development of smaller modular instructional materials for engineering faculty that effectively and naturally integrate broader standards educational materials into the existing engineering curriculum. Development of the proposed modules in specific topic areas would require input from the private sector in a given field of study after initial work is done to insure that the topics selected are relevant to the needs of the academic community. Ideally, the content would also include case study material related to the selected topics. (ASTM at 35)

BICSI

Yes, but the term standards education program needs to be expanded. Within BICSI, we provide two types of education: education on a specific topic or standard, and education that is more trade related. While the former is clearly a standard program, the latter teaches best methods and practice to a wide range of standards. While neither classes is suited to teach the "do's and don'ts" of standards development, both expose participants that standards abound. . . . However, the question that also needs to be asked is "At what level do we start providing standards education". From my own observation, standards education traditionally either starts in the working world, at the point that you first knowingly encounter a standard, or within a trade or technical school, which teaches you the knowledge to perform the specifics of a job. The introduction point seems about right, as providing it earlier would not allow the significance of a standard to be matched with a person's experience. This does not mean though that improvements are not necessary; rather, trade technical schools should provide a little more basics in how a standards is developed, key SDOs in the trade, etc., where as post-secondary education should provide

standards education in its applicable classes and major courses of study, especially those of a technical nature (engineering being the largest focal area). (BICSI at 37-38)

IEEE

IEEE-SA does not believe that the purpose of standards education—or standards development in general— should be to maintain or enhance a nation’s competitive position in the global marketplace. IEEE is an international organization with a global membership; close to 50 percent of our membership resides outside the United States. Our policies, including those regarding standards education, reflect that fact. Optimally, national borders should be as transparent as possible in standards development and in standards education. In a time of increasing globalization all students and professionals, worldwide, need to remain technically competent and eager to drive innovation through fair competition. (IEEE at 50)

Information Technology Industry Council

Standards education programs are essential for the U.S. to maintain – even enhance – its competitive position in the global marketplace. ITI’s recommendations for increased standards education focus on both national and international fora. Additionally, standards education should be not be limited solely to technical fields, but rather, should occur in all sectors – private, public and academic – and across multiple academic disciplines. . . . In our view, standards education is an opportunity for increased partnership among industry, academia and government, and should help build awareness of the role and importance of standards, including how the U.S. standards system facilitates trade and innovation in a timely manner. Clearly, standards benefit all sectors of the economy. Accordingly, standards education needs to be viewed holistically. (ITI at 54)

Society of Cable Telecommunications Engineers

Given the competitive nature of global industry, I think it is essential that there should be more education on standardization in the US. I think the core of this should be at the undergraduate level in engineering, business, and even political science; although the topic treatment would clearly be different. I think that in the past, we have wasted some of our valuable resource by trying to describe exactly how particular systems works – that, in my opinion, can be left as job training. (Society of Cable Telecommunications Engineers at 70)

The Center believes there has been important progress towards achieving standards education goals set forth in the United States Standards Strategy (Section 10); however, much work remains to be done in order to effectively educate and train the next generation of United States standards experts who will represent the United States in development of global private-sector technology standards. The Center notes with interest that several countries in Asia and Europe have made significant progress in standards education for the purpose of training the next generation of

standards experts that will represent their respective countries in development of global private-sector technology standards.

Some survey responses provide a detailed review of current standards education programs being administered by an individual organization. Please see individual survey responses for detail of specific standards education programs.

Survey Responses

Aerospace Industries Association/Strategic Standardization Forum for Aerospace

The Strategic Standardization Forum for Aerospace (SSFA) welcomes the opportunity to respond to the two national survey questions below and hopes that the views of this critical industry are taken into consideration and found to be useful by those conducting and using this survey. The SSFA would begin by endorsing the response to this survey provided by The American National Standards Institute. The ANSI response was thorough and articulated views shared by the US aerospace industry. The SSFA would then like to offer some additional information, clarification, and views to provide input as it relates to this large and nationally important industry sector.

The Strategic Standardization Forum for Aerospace was chartered in 2004 by the CEO's of the major US aerospace companies sitting on the Board of Governors at the industry's trade association, the Aerospace Industries Association. The SSFA is the recognized forum where the aerospace industry, in partnership with government, standards developers and other relevant stakeholders, comes together in a collaborative engagement to address standards issues. As such, the SSFA is the one source for pulling together a consensus industry position on standards issues impacting the aerospace industry.

The SSFA would welcome the opportunity to discuss these issues and others with the Center for Global Standards Analysis, the American National Standards Institute, or any government entity contemplating recommendations or seeking input on policies or legislation related to standards.

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

- The US aerospace industry's standards are the result of a successful industry-led, government supported partnership
- The US aerospace industry successfully uses and leverages the flexibility offered by the current standards system and continues to assert the selection of standards based on technical merit and not on the organization or business model used to develop the standard
- The US aerospace industry strongly advocates the position that different industry sectors, and even different companies, may require different standards and standards setting models and that no "one size" fits all

- While continuous process improvement is always welcomed, the current standards system has been extremely successful in supporting the global growth of the US aerospace industry

There is no need to change policies related to the current industry-led and government-supported standardization system. The US aerospace industry is over a century old, as are many of the standards developing organizations supporting aerospace, and the current standards system not only works well, but is critical to supporting and maintaining the certification and acceptance of our products. As shown in the examples below, the current standards system, as it supports the aerospace industry, is built upon a successful public-private partnership. The US aerospace industry does not endorse the need for any changes to current US policies related to standards development nor do we think that an increase in government intervention or oversight would add value or result in a stronger system.

Aerospace Standardization: Industry-Led, Government Supported

Few industries so completely encompass the principle of industry-led – government supported than aerospace. And probably no industry is more standards intensive than aerospace, using tens of thousands of standards developed by over a hundred and fifty different standards developing organizations. The aerospace industry has a long history of cooperating with government agencies to ensure that the voluntary consensus standards support not only the military needs for defense and security but the civil needs for safety of passenger flight. The aerospace industry's products and services constitute the single largest source of export revenue in the US and this commerce is based on the current successful standards system.

The US aerospace industry welcomed and supports the National Technology Transfer and Advancement Act of 1995, Public Law 104-113. Following the NTTAA, the Department of Defense transitioned thousands of military specifications and standards to voluntary consensus standards bodies such as SAE International, ASTM International and AIA to be maintained as industry standards. And DoD personnel work in close collaboration with industry in these organizations and others to maintain the huge number of standards vital to the aerospace industry.

Enactment of the NTTAA through OMB Circular A-119: *Federal Participation in the Development and Use of Voluntary Consensus Standards in Conformity Assessment Activities* has served the aerospace industry and its government partners well. Regulatory bodies such as the Federal Aviation Administration and government agencies such as the Department of Defense and NASA routinely bring standards development projects to industry standards organizations, confident that industry will serve the needs of all stakeholders. OMB Circular A-119 has been extremely successful and is in no need of any changes. If the industry had one recommendation related to government participation in standards development, it is to encourage more participation by government personnel and earlier communication of standards needs. This would ensure that the public sector needs are met in a timely manner and in close collaboration with the private sector.

The Value of the Current System's Flexibility

The current standards system is one that is flexible and robust and the SSFA rejects the notion that the US standards system is too complex and too confusing. The variety of standards developing organizations and business models for standards development ensures that the needs of all industry sectors, technologies, and societies are addressed. Aerospace industry strongly supports the concepts of direct participation by technical experts in development and approval of standards, and the specialization allowed for by having numerous different organizations developing standards with the opportunity for users to select the standard that best meets their needs and applies to their circumstances. The aerospace industry also strongly supports the concept of multiple paths leading to global or "international" standards based on technical excellence, market acceptability, and global acceptance. These positions have been codified and endorsed by the US aerospace industry, the key standards organizations supporting aerospace, and the aerospace government stakeholders (DoD, NASA, FAA) in a position statement. This Strategic Standardization for Aerospace's Position Paper outlines the industry's practice of selecting standards based on suitability for use and not on the business model used to create the standards. This position has also been promoted into international arenas such as NATO. This paper is available at the SSFA's website at <http://www2.aiaa-aerospace.org/ssfa/pubs.cfm>. And while the aerospace industry strives constantly, in partnership with government organizations and standards developers, to improve the processes and products supporting aerospace standardization, this is not at the expense of the value realized through the current system's flexibility. No changes to the current policies nor the legal framework surrounding standardization are needed to support continuous improvement.

One Size Does Not Fit All

Different industry sectors have different business models, production processes, and product lifecycles; and therefore different standards needs. Some industries have product development times of less than 18 months and product life-cycles of three years or less. Aerospace can have product development times of 10 years and our products can operate for more than 50 years. Also different industries have different regulatory, security and certification requirements. These differences may require different standardization models. The aerospace industry, as are other industries, is supported by a suite of thousands of standards, each developed or chosen based on technical merit and business needs. What the aerospace industry cannot tolerate is one industry sector driving changes to the standards systems and policies that is in conflict with the current system and policies used to produce and operate our products. The risk to public safety and the quality of our products is too great to allow our industry's standards to suffer collateral damage or be held hostage by another industry's attempts to change the standards system to suit their own business models. The current system today provides the kind of flexibility needed to accommodate all industries, technologies, and standards strategies. No one industry, government or group should have undue influence in changing the current successful system without taking into account the needs of all other stakeholders. And while government support of standardization is welcomed, standards policies should not be included in the general legal framework as this could jeopardize the success and coherence of the current standardization system.

Globalization and Innovation

The aerospace industry has long been global. Our products fly from one part of the globe to another, or even orbit the entire globe multiple times a day. And the huge aerospace supply chain is extensively international. So while globalization may be new for some industries, it's been a way of life for aerospace for a long time. And the current standards system has always facilitated the global development, sale and operation of our products. No changes to current standards policies are necessary for the aerospace industry to function more globally. However, the industry would welcome US government support to help encourage those regions or nations beginning to develop an aerospace capability to utilize the existing standards infrastructure rather than creating new systems. Creating new or alternative standards systems would only fracture the standards structure supporting the certification of US aerospace products and decrease the efficiency and quality of aerospace standardization.

Standards play an important part in technical innovation related to aerospace. Standards function as building blocks of tried and true technical solutions which can be combined and linked together in new ways, freeing the innovator from starting back at square one. Rather than stifling innovation, standards allow leapfrogging of technical solutions which are based on well defined and operating current technology. Mandating standards policies based on one business model of how a standard should be developed or on what a standard may contain or even on which intellectual property policy may be used would ultimately inhibit innovation by taking away the flexibility of choosing a standards system or a particular standard based on suitability for use.

The success of the current US standards system and its multiple approaches which support the diverse needs of many different industry sectors can not be improved by the application of a one size fits all model.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

- The US aerospace industry encourages incorporating standards education into the engineering and business curricula
- The US aerospace industry supports fostering industry awareness of standards and the sharing of best practices regarding training in the development and use of standards and recommends modularization of standards training to allow for customization based on industry sector and individual company needs
- The US aerospace industry encourages increased outreach to the rest of the world promoting the value of the US standards system and support the increased availability of on-line training and e-learning tools

The Strategic Standardization Forum for Aerospace endorses the position that the United States should increase its support for standards education. Standards, like any other tool, are most effective in the hands of those trained in their development and use. The SSFA would offer the following specific recommendations:

- Encourage industry, academia, standards developers and government in working together to ensure that technical, engineering, and business graduates from colleges and universities have a working knowledge of standards: what they are, how to find them, how they're developed, and how to use them.
 - Foster industry's awareness that even if a new hire has familiarity with standards, additional training is needed to learn the specifics related to the standards used by that company and that industry. The SSFA is working to share best practices in company standards training and encourages other industries and companies to do the same.
 - Develop new or significantly enhance existing standards education programs that allow for customization by individual industry sectors. How aerospace uses standards and the kinds of standards important to the aerospace industry differs from the standards needs of other industries. Generic standards training, while useful, doesn't get to the specifics necessary for an individual industry or a company. Modularized training would help facilitate appropriate customization of standards training.
 - Help promote the success of the US Standards system – the value of the private-led, public supported process – to the rest of the world. Many of the major standards developers which are key players in the US standards system are also important developers of globally recognized, accepted and used standards. Standards developed by US domiciled standards organizations which adhere to the basic tenants of the voluntary consensus standards system (openness, transparency, due process, right to appeal, etc.), are every bit as valid as developers of global standards as those organizations domiciled in Geneva, Switzerland or elsewhere. US standards education and advocacy needs to promote the value of multiple paths to global standardization.
 - Facilitate and encourage the creation of standards education programs that utilize internet technology and support e-learning. Support the creation of standards training that supports information sharing and learning not just to US students, but of students around the world. This needs to include an enhanced sensitivity to how the training would be viewed and understood given cultural, language, and other differences.
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Alliance for Telecommunications Industry Solutions

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

The Alliance for Telecommunications Industry Solutions (ATIS) strongly supports the existing policies surrounding the development of private-sector technology standards. These policies promote the timely development of innovative industry specifications with appropriate input from all stakeholders. ATIS believes that any significant changes to these policies could disrupt the standards development process.

ATIS is a technical planning and standards development organization that develops and promotes technical and operational standards for communications and related information technologies worldwide using a pragmatic, flexible, and open approach. ATIS' membership spans all segments of the ICT community including local exchange carriers, interexchange carriers, wireless equipment manufacturers, competitive local exchange carriers, data local exchange carriers, wireless providers, providers of commercial mobile radio services, broadband providers, software developers, consumer electronics vendors, providers of multimedia services, digital rights management companies, central authentication service companies and internet service providers.

Industry professionals representing more than 250 organizations, including key governmental agencies, actively participate in ATIS' open industry committees and forums. ATIS' forums and committees, listed below, progress important industry work. The successful completion of this work is predicated on the current U.S. policies pertaining to standards development.

One of the cornerstones of these policies is the well-established policy that the government should use industry-developed standards. This principle, codified in the National Technology Transfer and Advancement Act of 1995, Public Law 104-113 (NTTAA), directs federal government agencies to use, wherever feasible, standards developed and/or adopted by private, voluntary consensus standards bodies in lieu of developing specific governmental standards.

There are many of examples of ATIS' industry standards being used or referenced by the government. For instance, the Federal Communications Commission (FCC) requires the North American Numbering Pooling Administrator to comply with the guidelines developed by the ATIS Industry Numbering Committee (INC) Guidelines (47 CFR §52.13(b)(3)). In developing rules pertaining to the exchange of customer information between service providers, the Commission acknowledges the successful work of the ATIS Ordering and Billing Forum (OBF) in developing Customer Account Record Exchange (CARE) guidelines and encourages providers to use these guidelines and to work with the OBF to further develop and refine them. (*Report and Order and Further Notice of Proposed Rulemaking*, CG Docket No. 02-386, at ¶59 (rel. Feb. 25, 2005)). The Communications Assistance for Law Enforcement Act, Public Law 103-414, also acknowledges industry standards work by establishing that service providers may rely on industry-developed standards when determining compliance with CALEA. One such "safe harbor" standard is ATIS-

1000678.2006, Lawfully Authorized Electronic Surveillance (LAES) for Voice over Packet Technologies in Wireline Telecommunications Networks (version 2).

Another key element of the existing U.S. policy is the participation by governmental officials in industry-led standard efforts. Such participation is encouraged by the NTTAA as well as by the Office of Management and Budget (OMB) Circular A-119, Federal Participation in the Development and Use of Voluntary Consensus Standards in Conformity Assessment Activities. Circular A-119 encourages the government to work with industry to develop standards and promotes close interaction and cooperation between the public and private sectors in the development of standards.

ATIS' success in developing effective and implementable standards is due, in part, to the participation of both private sector and governmental stakeholders in ATIS forums and committees. The National Communication System, Department of Defense, Federal Bureau of Investigation, Federal Communications Commission, and the Department of Commerce through its National Institute of Standards and Technology and National Telecommunications and Information Administration, are all active members of ATIS and participate in ATIS standards development activities.

ATIS does not believe that globalization warrants a change to the existing policies surrounding the development of private-sector technology standards. In fact, these policies have allowed ATIS to become a leader in global standardization efforts surrounding issues such as IP-based television (IPTV) and next generation networks. ATIS is also a significant contributor to the International Telecommunications Union and the single largest contributor, through the U.S. State Department, to the ITU-T.

Finally, as an accredited member of the American National Standards Institute, ATIS supports the comments made by ANSI to this survey "that public policy should build upon the demonstrated successes in this area and continue to encourage government, consumers, industry, and voluntary standards developers to rely upon the public-private partnership model to explore consensus-based solutions to key national priorities." ATIS supports ANSI's suggestions that: (1) the government should explore new ways to more expeditiously advise SDOs of governmental needs for new or revised regulations and standards at the beginning of the regulatory process and in time to update standards to meet these government needs before final regulations are promulgated; and (2) the government should explore whether the current reporting requirements related to standards and other appropriate subjects meet the needs of public and private users and consider whether current web-based reporting requirements could or should be modified accordingly.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

ATIS believes that additional standards educational support would be beneficial to U.S. businesses and consumers and would enhance the nation's competitive position in the global marketplace. Standards are ubiquitous worldwide. Such educational support could provide the incentives, either through course curricula and/or materials development, grants, etc., necessary to prepare the next generation workforce with the underpinnings of how products and services can interoperate and be interchangeable. Such support should be introduced, at a minimum, at the post-secondary level in various courses of study. While engineering typically is considered the academic focus of standards education, other disciplines have an effect upon, or are affected by, the standards development process. These would include business, law, medicine, and environmental studies.

ATIS recommends the following in order to provide increased standards education in the private, public, and/or academic sectors:

- Through existing U.S. federal departments and agencies, especially the Department of Commerce and the National Institute of Standards and Technology, federal outreach programs detailing the necessity and importance of standards across all commercial fields should be undertaken. This could be done through grant programs provided to standards developing organizations, through designated programs developed with the departments/agencies, or through a combination of private and public sector partnerships.
- Academic institutions, especially those providing programs in engineering, global business administration, and intellectual property rights should be encouraged to significantly expose their students to the importance that standards play in the development of products, strategic business considerations and international commerce decision-making, and the protection of intellectual property found within domestic and international standards.
- Encourage the development and dissemination of course curriculums, as early as the secondary school level, detailing the fundamentals of domestic and international standardization, as well as showing the impact of standards on the environment, health, safety, sustainability, international trade, and public policy.
- Provide private sector entities the incentive, possibly through tax credits, to have their workforce take standards-oriented training courses that would not only teach the fundamentals of standards and standardization but the strategic imperatives standards can play in a global economy.

ATIS has initiated a number of activities to bring its communications standards work to a broader audience than to just its own member companies and their employees. These include:

- The creation, programming, and sponsorship of ATIS Technology Conferences either as stand-alone programs or components to major communications conferences and expositions. Conferences in the past have featured new and innovative technologies and the standards necessary to make such innovations interoperable and interchangeable within the communications infrastructure. Such conferences also have included the business requirements and models required with the implementation of the standards underpinning the technologies in question.
- The provisioning of free webinars open to the general public on a host of new communications technologies and the standards associated with these technologies. Examples of ATIS webinars that have been held over the past two years include:

- ATIS Green Webinar: Wireless Network Efficiency
 - ATIS LTE Webinar: Enabling Societal and Personal Communications for a Changing World
 - ATIS Service Oriented Networks Webinar: Where Web 2.0 Meets Telco 2.0
 - ATIS Home Networking Webinar: Achieving End-to-End Standardization in the Home Network-Is it Possible?
 - ATIS-3GPP LTE Webinar: Setting the Standard for Mobile Broadband at the Global Level
 - ATIS IPTV Webinar: Importance of Quality of Experience (QoE) Monitoring in IPTV: Why Video Content Integrity is Critical to QoE
 - ATIS IPTV Webinar: Digital Rights Management and its Impact on IPTV Service Quality - Security and its Impact on Quality of Experience Monitoring
- ATIS' participation in the dissemination of standards to colleges and universities through the Information Handling Services (IHS) University Outreach Program. Here ATIS identifies those institutions wherein communications engineering is a major course of study and standards are provided at significantly reduced costs. ATIS is also partnering with the Standards Engineering Society (SES) to provide a sample of communications standards in a collection of various standards to initiate students in the use and utility of such standards.
 - ATIS seeks opportunities to provide ATIS subject matter experts in communications standards and standardization on the programs of various organizations seeking to address new communications technologies and applications, especially with a view towards the business and technical considerations of such technologies.
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American National Standards Institute¹¹

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

No change to the current private sector-led and public sector-supported standardization system is warranted. As shown below, the current system works well and has been adapted to the integrated global economy through the United States Standards Strategy. Indeed, the U.S. government recently endorsed the current standardization system and stated that it does not endorse further government intervention.

¹¹ The response from the American National Standards Institute is supported by several organizations that responded to the survey.

A. The Current Private Sector-Led Approach Is Working Well

By way of introduction, ANSI serves as the coordinator of this nation's private-sector led and public-sector supported standardization system and oversees the creation, promulgation and use of tens of thousands of standards, norms, guidelines, and conformance activities that directly impact businesses and consumers in nearly every industry sector. ANSI and its members cooperate with government agencies at the federal, state and local levels to achieve optimum compatibility between government laws and regulations and the voluntary standards of industry and commerce, as well as ensuring that voluntary consensus standards provide for government needs in their procurement of goods and services.

The success of the current private sector-led U.S. standardization system is evidenced by the National Technology Transfer and Advancement Act of 1995, Public Law 104-113 (the "NTTAA"). The NTTAA directs federal government agencies to use, wherever feasible, standards and conformity assessment solutions developed or adopted by private, voluntary consensus standards bodies in lieu of developing government-unique standards or regulations. The voluntary consensus standards are to be used for both agency regulatory purposes as well as in their procurement activities.

The NTTAA was the logical consequence of the Clinton Administration's push to eliminate the tremendous waste caused by the use of unique government standards by the military and elsewhere. The differences in the public and private specifications led in too many cases to the Federal government having to procure custom products when functionally similar products were readily available in the commercial marketplace. This led to reform by the incoming Clinton Administration and their strong support for passage and implementation of PL 104-113 and the replacement of thousands of uniquely public sector standards throughout the government with ones developed by the private sector.

Almost immediately after enactment of PL 104-113, the Clinton Administration Office of Management and Budget ("OMB") moved aggressively to implement the NTTAA through a major update of OMB Circular A-119: *Federal Participation in the Development and Use of Voluntary Consensus Standards in Conformity Assessment Activities*. The OMB process rigorously pushed for a national consensus through extensive public comment both in writing and in public hearings. This process went into much greater detail than was possible in the statute and led to a document laying out the parameters of public/private cooperation that has stood the test of time. OMB Circular A-119 confirms that close interaction and cooperation between the public and private sectors are critical to developing and using standards that serve national needs and support innovation and competitiveness and allowed for continuation of the extensive participation of all interested parties in standards development, a factor often credited with giving the United States the most objective and rigorous standards in the world. "Voluntary consensus standards bodies" are defined in the Circular broadly so as to include both ANSI-accredited Standards Developing Organizations ("SDOs") and a wide range of consortia. In accordance with the tenets of the United States Standards Strategy (see below), ANSI recognizes a "multiple path" approach to standardization and continues to reach out to non-ANSI-accredited organizations to explore areas for collaboration in serving U.S. needs.

The NTTAA also encourages the agencies to be active participants in the standards development process. The NTTAA directs the National Institute of Standards and Technology (“NIST”) to “bring together federal agencies as well as state and local governments to achieve greater reliance on voluntary standards and decreased dependence on in-house standards.”

Since the NTTAA became law in 1995, the U.S. federal government has saved millions of dollars by using consensus standards for procurement purposes and mitigating overlap and conflict in regulations and industry benefits by being able to manufacture one product both for public and private sector users. During the last decade, great progress has been made in the cooperative standardization efforts of industry and government, including significant accomplishments in such critical areas as health and safety, security and defense, protection of the environment and technological advancements.

It is ANSI’s view that public policy should build upon the demonstrated successes in this area and continue to encourage government, consumers, industry, and voluntary standards developers to rely upon the public-private partnership model to explore consensus-based solutions to key national priorities.

The key to a successful partnership is active participation, which requires support and resources from government policy makers at all levels.

Under the current private sector-led approach, the federal government is already a key player in the U.S. standardization system. The thousands of agency representatives who participate in the standards development process are instrumental in ensuring agency compliance with the NTTAA and OMB Circular A-119.

In ANSI’s view, the current private sector-led and public sector-supported standardization system works exceptionally well and the continued strength of the U.S. standardization system depends upon the ongoing effective cooperation of government and industry. There is no reason to alter in any way the current balance between private and public sectors in developing standards.

The impact of Globalization does not dictate a different approach, it shows even more clearly that the current system is working. Every year many U.S. national standards are adopted as International Standards. Every year more and more overseas participants join U.S. standards developing committees and more and more foreign governments enter cooperative agreements with U.S. standards developing organizations. Indeed, the framework for U.S. participation in international standards was agreed to by all interested parties in 2005, when ANSI, working in conjunction with stakeholders, in government, industry standards developing organizations, consortia, consumer groups and academia, developed the United States Standards Strategy (“USSS”) which reflects a commitment to a sector-based approach to voluntary standardization activities and a recognition of the need for standards designed to meet stakeholder needs irrespective of national borders. The USSS was designed to meet the need for a statement of purpose and ideals and to provide a vision for the future of the U.S. standards system in today’s globally competitive economy. The USSS expressly recognizes that “global standardization

goals are achieved in the United States through sector-specific activities” and a “market-driven, private sector-led approach.”

B. The U.S. Government Supports the Current Private Sector-Led Approach to Standardization Which Provides Unique Advantages

The U.S. government recently endorsed the current private sector-led U.S. standards system in a presentation by the United States Patent and Trademark Office (“USPTO”) to the World Intellectual Property Organization (“WIPO”) Standing Committee on Law and Patents (“SCP”) meeting on March 25, 2009. In that presentation, the U.S. government took a firm stand that “there is NOT a crisis, as claimed by some, in standard setting” in this country. Specifically, the presentation stated:

In [the U.S. government’s] view, the standard setting process should be voluntary and market-driven. Unnecessary government intervention can impair innovation, standards development, industry competitiveness, and consumer choice....The U.S. government recognizes its responsibility to the broader public interest by providing financial support for, and promoting the principles of, our standards setting system globally. U.S. industry competitiveness depends on standardization, particularly in sectors that are technology driven. The United States doesn’t encourage government intervention. The issues have long been discussed and are rejected because they hinder innovation, standards development, U.S. industries’ competitive advantage and attendant benefits to consumers.¹²
(Emphasis added.)

As detailed in part 2(d) below, the U.S. government also encourages and endorses the use of “Open Standards” as “traditionally defined,” that is those developed through an ANSI-like open and collaborative process.

C. The Relationship Between the Voluntary Consensus Standards Process and Obama Administration Initiatives

While we strongly feel that the basic U.S. approach to standards should not be changed, we are pleased with the new administration’s promise for openness in government and increased cooperation with the private sector and look forward to exploring ways that our existing public/private partnership in standards can be made stronger. In this regard, we have two suggestions. First, standards development, since the development of the Internet and related software improvements, went through a revolution. By using the Internet extensively in standards development, many Standards Development Organizations are able to develop standards in a fraction of the time it took just a few years ago. We feel that finally the true promise of PL 104-113 can be harnessed by exploring new ways in which SDOs can be advised of government needs for new or revised regulation at the beginning of the regulatory process and in time to update standards to meet these government needs before final regulations are

¹² See United States Statement to WIPO on definition of “Open Standards”, http://web.ansi.org/news_publications/other_documents/other_doc.aspx?menuid=7

promulgated. We feel that such an arrangement could benefit the government and the private sector with a more precise match between standards and regulation. We would suggest that this opportunity is already within the scope of PL 104-113. We also would like to suggest that government explore whether the current reporting requirements related to standards and other appropriate subjects meet the needs of public and private users and consider whether current web-based reporting requirements could or should be modified accordingly.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization’s specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

A. The U.S. Should Increase Support for U.S. Standards Education Programs

Yes, the United States should increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace. ANSI endorses Strategic Initiative 10 of the United States Standards Strategy (which provides: “Establish standards education as a high priority within the United States private, public and academic sectors.”)

B. ANSI’s Recommendations for Increased Standards Education Support

ANSI’s specific recommendations for increased standards education support in the private, public and academic sectors is set forth in detail under the USSS, Strategic Initiative 10 as follows:

- Develop new or significantly enhance existing standards education programs that address the significance and value of standards to the well-being of the United States and global economies.
- Develop or significantly enhance standards education programs that address the needs of specific groups within the United States. These programs must reflect the multidisciplinary environment in which standards development takes place and address national and international standards development procedures; the relationship between private and public sector standards; the environment, health, safety, sustainability, international trade, public policy, competition, legal, economic benefits, and strategic considerations; and how to balance the interests of stakeholders.
- Develop a national database of standardization case histories. The database should be jointly managed by the American National Standards Institute and the U.S. Department of Commerce. The database is intended to support the overall objective of enhancing existing standards education programs that address the value of standards in this country and abroad.

- Encourage universities and colleges within the United States to create standardization education programs in fields of study such as engineering, science, medicine, technology, government and public policy, business, economics and law.
- Facilitate and enhance the creation of a communications network for standardization education programs among all interested parties in the private, public and academic sectors. Utilize Internet technology to the fullest extent possible to facilitate the development of e-learning and standardization education programs.

C. ANSI's Existing Standards Education Program

ANSI, through its Committee on Education (“COE”), has implemented several recent or ongoing initiatives dedicated to the fulfillment of Strategic Initiative 10. Specifically, ANSI has:

1. Re-launched ANSI’s www.standardslearn.org which is a free and publicly-available resource providing ANSI-developed educational content to a broad audience.
2. Developed a series of case studies on the technological and economic impact of standards which are freely available via www.standardslearn.org.
3. Launched the University Outreach Program introducing globally-recognized and adopted standards into universities to incorporate information about standards and conformity assessment, as well as knowledge of the appropriate standards, into their unique curricula.
4. Sponsored (along with NIST, ICES and ASTM International) an education workshop on *Global Perspectives and Strategies for Education about Standardization*.
5. Supported a NIST workshop on *Promoting Education about Standardization in North America*.
6. Supported an International Standardization Case Study Competition, the purpose of which is to: (a) promote education about standardization among universities; (b) provide an opportunity to make students aware of the issues surrounding standardization from corporate strategy, industry, regional, and international perspectives.
7. Created a forum for discussion among academics and practitioners that builds a “community of learners.”

D. Education About the Confusion Between “Open Standards” and “Open Source”

In addition to these educational programs implemented through ANSI’s COE, ANSI recommends broad-based educational outreach to all industry sectors related to the often misused and misunderstood definition of “Open Standards.” That term is often mistakenly confused with one method of possibly implementing a standard via “Open Source” Software. Open Source generally refers to principles and practices commonly applied to the collaborative development of source code for software that is made available for public use.

In order to maintain ANSI accreditation, standards developers are required to consistently adhere to a set of requirements or procedures known as the “*ANSI Essential Requirements*,” which govern the consensus development process. Due process is the key to ensuring that American National Standards (“ANS”) are developed in an environment that is equitable, accessible and responsive to the requirements of various stakeholders. The open and fair ANSI process ensures that all interested and affected parties have an opportunity to participate in a standard’s development. It also serves and protects the public interest since standards developers accredited by ANSI must meet the Institute’s requirements for openness, balance, consensus and other due process safeguards.

That is why American National Standards are usually referred to as “Open Standards.” In this sense, “open” refers to a process used by an entity or organization for developing and approving a standard. The Institute’s definition of openness has many elements, but basically refers to a collaborative, balanced and consensus-based approval process. The content of these standards may relate to products, processes, services, systems or personnel.

The term “Open Standard” has been used, incorrectly in ANSI’s view by some, to describe a standard that may be copied, used and distributed for no fee and/or whose embedded technology is available on a royalty-free basis. This definition has created some confusion among standards developers and users because it is contrary to the definition of “open” and “openness” long held by ANSI and many other recognized standards bodies who understand the term to describe a collaborative, balanced and consensus-based approval process for the promulgation of domestic or international standards. These same features are central to the policies of well-recognized regional and international standards bodies, such as the ITU, ISO, IEC and ETSI, as well as to Annex 4 of the Second Triennial Review of the WTO/TBT Agreement.

By using the term “Open Standard” to define a standard whose sole quality is that it is unconditionally and freely available to those who wish to implement it is misleading for two reasons. First, it ignores the fact that holders of embedded intellectual property have the right to decide how they will license such property. The terms and conditions used in the development of “Open Standards” should balance the interests of those who will implement the standard with the interests and voluntary cooperation of those who own the IP rights that are essential to implementation of the standard. This is the balance provided under the ANSI Patent Policy which governs all American National Standards, and a similar requirement is expressed in OMB A-119 and some federal agencies’ patent policies (*e.g.*, the Federal Communications Commission). Such terms and conditions should readily promote, and not unreasonably burden, accessibility to the standard for implementers. To achieve such balance, the payment of reasonable license fees and/or reasonable and nondiscriminatory license terms may be required by the IP rights holders.

Second, an Open Standard may involve the payment of a fee to obtain a copy of the standard. Such fees are usually used to offset the costs associated with managing open standards development processes.

To educate the standardization community about the appropriate use of the term “open” when used to describe a standards process, ANSI has formulated a “critical issues paper” which it posts

to its Website and circulates to third parties when relevant, including the European Commission and the Government of India, last November.¹³

It is noteworthy that the U.S. government has recently endorsed ANSI's definition of "Open Standards" in the USPTO's presentation on March 25, 2009 to WIPO:

The United States supports and strongly encourages the use of open standards as traditionally defined, that is, those developed through an open, collaborative process whether or not intellectual property is involved.... Open standards systems offer a balance of private and public interests that can protect IP with fairness, disclosure policies and reasonable non-discriminatory licensing. When developed by broadly accepted bodies or organizations, even voluntary standards can become widely adopted. Because of these benefits, use of open standards in the traditional sense is strongly encouraged whenever practical.¹⁴ (Emphasis added)

ANSI-ASQ NATIONAL ACCREDITATION BOARD

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

The ANSI-ASQ National Accreditation Board believes no change to the current private sector-led and public sector-supported standardization system is warranted. We support the response submitted by the American National Standards Institute (ANSI), one of our parent companies, which is attached for your reference.

The ANSI-ASQ National Accreditation Board functions under the ANAB brand as the only internationally recognized U.S. accreditation body for certification bodies (based in the United States and elsewhere) that audit and issue certificates of compliance to international management systems standards. Under the ACLASS brand, we also accredit testing and calibration laboratories, inspection bodies, reference material producers, and proficiency testing providers. The success of the system of third-party accredited certification in which we, our accredited customers, and their clients participate facilitates competitiveness and global trade; this provides evidence of the effectiveness of the current U.S. policies for development of private-sector standards.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education

¹³ See http://www.ansi.org/standards_activities/international_programs/critical_issues.aspx?menuid=3

¹⁴ See United States Statement to WIPO on definition of "Open Standards", http://web.ansi.org/news_publications/other_documents/other_doc.aspx?menuid=7

programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

The ANSI-ASQ National Accreditation Board believes the United States should increase its support for U.S. standards education programs to maintain or enhance its competitive position in the global marketplace. We fully endorse the response submitted by ANSI (attached).

In addition, we recommend that standards education focus not only on standards and standards development but also specifically foster knowledge and understanding of conformance, self-declaration, certification, and accreditation as they relate to international, national, and industry-sector standards. Third-party accredited conformity assessment activities are not widely understood but can and do play a significant role in facilitating global trade. The cooperation among national accreditation bodies through organizations such as the International Accreditation Forum (IAF) and the International Laboratory Accreditation Cooperation (ILAC) helps ensure that U.S. companies are able to compete on a level playing field.

Standards education should convey the potential value of implementation of standards and the potential to enhance the success of an individual business. In addition, there is much work to be done in education with regard to the broader implications when standards are considered within the full context of global conformity assessment activities.

American Society of Mechanical Engineers

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

ASME believes that the impact of Globalization reinforces the need to maintain the current U.S. policy which encourages robust and diverse intellectual input in standards development. The current system supports the ability of U.S. based standards development organizations to remain inclusive and better meet principles and criteria established by the World Trade Organization (WTO) Technical Barriers to Trade Agreement (TBT).

ASME standards are used as a means of meeting regulatory requirements in more than 100 countries. Availability of privately developed voluntary consensus technical standards to be considered for government regulation (and considered in contractual obligations) gives the U.S. and other governments important flexibility in utilizing the best and most applicable standards, and therefore the widest technical expertise available, in making decisions regarding the safety of

the public. More than 4000 active volunteers are involved in developing and maintaining more than 500 ASME standards. Included are technical experts from industry (manufacturers and users), academia and government; U.S. government regulatory authorities are represented in the ASME standards committee structure. Approximately 10% of ASME volunteers are from outside the United States representing more than 45 countries, included are technical experts from foreign standards development organizations and regulatory agencies. ASME has demonstrated profound respect for relevant technical expertise, wherever that may be found, in its standards development activities.

The Office of Management and Budget (OMB) Circular A – 119 and the National Technology Transfer and Advancement Act of 1995 have demonstrated how the process of creating regulation can be optimized through the use of private sector voluntary standards. The Department of Defense, the U.S. Postal Service, the U.S. Coast Guard, NASA and the Nuclear Regulatory Commission routinely use ASME standards. Similarly, government regulators overseas have and continue to reference or otherwise adopt ASME standards.

From the perspective of commerce and trade, global acceptance of ASME standards positively impacts opportunities for U.S. industry overseas. Successful joint efforts have projected a positive image of the public private partnership that exists between ASME and U.S. government agencies to standards development organizations, regulatory agencies and industry around the world. This includes U.S. Department of Commerce, National Institute of Standards and Technology (NIST) Standards in Trade Workshops (SIT), the International Trade Administration (ITA) Market Development Cooperator Program (MDCP) and other efforts including interaction with Standards Attachés and Department of State, U.S. Embassy staff overseas. ASME has also worked with the Department of Energy and the Department of Homeland Security.

ASME is a financially self sufficient not-for-profit professional organization that has been developing standards for 125 years. Burdens to the government relieved by the standards development activities of ASME and similar organizations may be immeasurable.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

ASME believes there should be a renewed focus on standards education. With Globalization and rapidly developing technologies, engineering and technical education should include a standards component that may include education about the standards development process (including WTO/TBT principles), the role of standards in regulation and application of specific standards related technical content as may be appropriate based on a student's field of study.

ASME is actively engaged in the introduction of standards education at the university level to the limited extent that resources permit. ASME Nuclear Codes and Standards has been meeting at universities (Pittsburgh, Colorado, Georgia Institute of Technology) and university consortia (SUNRISE [Southeast Universities Nuclear Reactors Institute for Science and Education] and

Big 12 Nuclear Engineering Program) to encourage the incorporation of codes and standards into curricula. The University of Pittsburgh has included a class – “Introduction to Nuclear Codes & Standards and Regulatory Endorsement” as part of its *Integrated Nuclear Systems & Components* engineering graduate class. ASME also conducts post-college training courses on the application of its standards supported by fees charged to the students and/or their employers.

Promotion of standards education can result in a larger pool of talent from which participants may be drawn to engage in future standards writing activities. This can help ensure the longevity of the private voluntary technical consensus standards development process.

The U.S. government can increase its support of standards education and may wish to consider grants to standards development organizations to create specific course content for universities and colleges. Schools may also be given incentives to introduce standards related courses into their curricula.

ASTM International

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

A1.) ASTM International finds that current United States policies for the development and use of private sector technology standards continue to be extremely effective policies that benefit the Federal government and the regulated community alike. Such policies include reliance on the Office of Management and Budget (OMB) Circular A-119 - which implements Section 12(d) of P.L. 104-113, the National Technology Transfer and Advancement Act of 1995 – to utilize voluntary consensus standards for regulatory purposes; and the global commitment to base technical regulations on international standards that meet World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement principles. These policies have led to an increased use of voluntary standards in the U.S. and elsewhere, and have made government regulation and procurement more efficient and more globally relevant.

Taking a national view, existing U.S. policies affirm and ensure that the nation has a decentralized system of standardization driven by the needs of stakeholders. The costs to the Federal government of developing its own standards continue to be reduced or eliminated. Consumers incur economic benefits on a daily basis through reduced costs of most goods that are purchased. But most importantly, existing policies encourage stakeholders – technical experts, consumer advocates and regulators alike - to engage directly under an open, transparent and balanced process in the development voluntary consensus standards that can be utilized to meet regulatory objectives, promote safety and the environment, or to improve the overall quality of life. One way to quantify the success of such policies is the extent to which voluntary consensus standards are accepted and utilized by U.S. agencies to meet regulatory and procurement needs.

According to the National Institute of Standards and Technology (NIST) Standards Incorporated by Reference Database, 2,500 standards from ASTM International have been incorporated by reference in the U.S. Code of Federal Regulations.

Globally, the U.S. government's policy of basing technical regulations on international standards that meet WTO TBT Agreement principles allows greater flexibility for industry and regulators to choose international standards from a broad array of sources based on factors such as technical quality, market relevance, and suitability to the task at hand. Promoting such policies as the U.S. government pursues regional or international harmonization of technical regulations or trade agreements directly benefits the competitiveness of U.S. industry since trade associations and companies of all sizes utilize ASTM standards to accomplish their business objectives, gain access to global markets, or to demonstrate regulatory compliance. In reviewing the extent to which ASTM standards are accepted and used worldwide as international standards, it is important to note that over 4000 ASTM standards are accepted and used by regulation or adoption in 73 countries around the world. And today, nearly 50 percent of the global distribution of ASTM standards takes place outside of the U.S.

In summary, existing U.S. policies promote public-private sector standards development efforts that reduce the cost and improve the management and effectiveness of government, while reducing global technical barriers to trade. While ASTM and other standards developers have demonstrated great success in working cooperatively with governments, consumers, industry and other stakeholders to craft voluntary consensus standards that meet current regulatory needs in the U.S. and elsewhere, it is vital to the competitiveness of U.S. industry and the safety of the public that the U.S. government continue to promote the globally agreed upon policy of basing technical regulations on international standards that meet WTO TBT Agreement principles. For additional information, please see "The U.S. Standards Strategy", a statement of policy supported by ASTM International and a broad consensus of interested parties including other standards development organizations, corporations, government agencies, and academic representatives.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

A2.) Yes, the United States should increase its support for U.S. standards education programs at the University level. Globalization in the marketplace and rapid changes in technology in the 21st century demand that engineers acquire the skills necessary to be immediately effective upon graduation. In addition to the math and science skills important in engineering curriculum, today's engineers must acquire knowledge of standards and their role in defining specific procedures, rules and guidelines. Two other key components for students to understand are the processes by which standards are developed and the regulatory policies and agreements that have been written surrounding standards.

B2.) The U.S. Standards Strategy, first developed in 2000, outlines a set of strategic objectives that is based on the sectoral, multiple path approach to standardization. ASTM International supports the Strategy's Objective #10 which focuses on standards education and states: "Establish standards education as a high priority with the United States private, public and academic sectors."

In the academic sector, the Accreditation Board for Engineering and Technology's (ABET) criteria for engineering curriculum now requires that faculty must ensure that their programs incorporate appropriate engineering standards. More emphasis needs to be given to teaching about standards and standardization at the university level by strengthening this criterion.

The World Trade Organization (WTO) supports the idea that effective and valued international standardization can be better accomplished by supporting sector-driven standards and the observance of basic principles of standards development. In the public sector, the United States government should encourage standards education programs that support the same philosophy as that of the WTO. Language developed for standards education ought to be performance-based, grounded in the principles of the TBT Agreement, and not prescriptive or based on a member-body orientation only. A multiple path philosophy approach is necessary because no single standards developer is able to satisfy the standards needs of every industry.

Understanding the challenge that the authors of engineering curriculum are already confronted with to fulfill ABET requirements within the context of a four year degree program, the United States should support the development of smaller modular instructional materials for engineering faculty that effectively and naturally integrate broader standards educational materials into the existing engineering curriculum. Development of the proposed modules in specific topic areas would require input from the private sector in a given field of study after initial work is done to insure that the topics selected are relevant to the needs of the academic community. Ideally, the content would also include case study material related to the selected topics.

Standards impact the international business environment and can add measurable value and support to the sound execution of corporate strategies related to international trade. Therefore, in addition to module development for engineering curriculum, the United States should also support the development of modules for business degree programs. Business students can benefit from educational modules that introduce them to the necessity of international standards for trade. C2.) ASTM International offers a wide variety of tools and information to assist educators in teaching their students about standards. ASTM International is making these resources available through:

- Affordable academic-oriented products, enabling professors to integrate ASTM standards into their course materials
- Online learning materials and other educational information at ASTM Campus, a focused area of the ASTM website for professors and students
- College and university campus visits and guest lectures by ASTM members and staff

- Continued student membership opportunities in ASTM International

To recognize achievement and scholarly work, numerous ASTM technical committees have awards specifically directed at recognizing the accomplishments of students. Through paper competitions and other contests, students can win valuable scholarships to use toward their continuing education.

In 2008, ASTM's Board of Directors unanimously approved funding for a new ASTM International graduate scholarship. A \$10,000 scholarship will be presented each year, beginning in 2009, to as many as four graduate students enrolled in masters or doctoral programs in accredited institutions who have demonstrated high levels of interest or involvement with ASTM standards.

In 2009, ASTM launched its Year of the Professor campaign aimed at promoting the value of standards education at colleges and universities worldwide. As part of the initiative, ASTM established the Professor of the Year Award to recognize a university-level educator for exemplary use of standards in their curriculum or classroom setting with a cash award of \$2,000 to the winning educator and their respective university.

To meet the challenges of their future careers, students need all the knowledge and skills they can garner –including an education in standards. Students who learn about the process of developing standards are more likely to participate in their development and add value for future employers. Without active engineers in the standards development process, society as a whole suffers. ASTM International is committed to providing university level educators and students with the tools they need to develop a foundation in the critical discipline of standardization and looks forward to improving these efforts with the support of its public, private and academic partners.

BICSI¹⁵

I was recently forwarded your survey by several of my colleagues here within BICSI, a professional association serving the Information Transport System industry. While my tenure at BICSI has been little more than two weeks as Standards Director, my previous eleven years has been spent within another standards organization which served the semiconductor equipment and materials industries. In regards to your two questions, paraphrased very loosely below, I have attached or comments on each.

Is there a need to change current United States policies for development of private sector technology standards?

¹⁵ See <http://www.bicsi.org/standards/standards.aspx>

At this time, I do not believe there needs to be a change, as the current private sector approach works on a number of levels. By utilizing the private sector, areas of need that are identified can be worked upon in a much faster pace, and in parallel, without taxing the resources of the government, which already has priorities of a number of other areas. The government also aids in standards development, where it feels needed, through direct and indirect methods. I myself have personally worked with members of NIST within Standards, as well as with individuals from various national laboratories, funded greatly by the government.

Utilization of the public sector also helps with adoption, in that the volunteers, developers, and other related people all have some degree of vested interest with the standard and its use. By bringing more government regulation/oversight in, it is possible that people's bias towards government, right or wrong, could hamper efforts to develop and/or adopt. IN addition, as many standards development organizations (SDOs) have an international reach, a larger presence by government may end that international cooperation, thus potentially placing US companies at a disadvantage as they have to either comply with potentially two or more diverging standards for international transactions, or choosing not to be part of the growing international market. True, business will always overcome obstacles, but we should not be the ones creating them for our own enterprises.

Where government policy change would be appreciated, though, is in an SDOs ability to raise funding versus the risks of anti-trust violations. Within open standards development, few contributions, if any, and far as monies are concerned, are ever received. This places an SDO in an interesting position of trying to raise funds for operation and outreach, while providing service to the industry. As SDOs are not considered charities, and as an SDO cannot provide services specific to one company over all others (caused the perception of being partial to one company), there is little to no incentive for outside donation. This leaves the SDO to contemplate other areas for funding, such as education, membership, etc., but for many SDOs these are not their strengths. It could be said that allowing SDOs incapable of funding themselves in the mid to long term to fold is a good thing, but the question that is not easily answered is, is it a good thing for us and the country.

With today's economic news, this has brought the question of funding to the forefront, as SDOs (start-up or otherwise) need to run near or at break even. Gone are the days in most associations that could run a SDO as a needed industry service without significant standards revenue balancing the ledger. For myself, funding is a key area within my program, as there are several significant topics that require support with direct connections to industry and government needs (bringing the digital age to healthcare providers for example), but with little current resources to ensure an aggressive development schedule can be met.

Should the United States increase its support for U.S. standards education programs?

Yes, but the term standards education program needs to be expanded. Within BICSI, we provide two types of education: education on a specific topic or standard, and education that is more trade related. While the former is clearly a standard program, the latter teaches best methods and

practice to a wide range of standards. While neither classes is suited to teach the “do’s and don’ts” of standards development, both expose participants that standards abound.

So, specifically, what can the US government do? For us, we have found that the recent stimulus package was quite generous in provided funding for education in trades, something we do. However, what we have found is that there is no one methodology for having a program certified to meet stimulus package requirements. Instead, we are currently having to work with the governments of all 50 states to illustrate how we meet the federal criteria, in addition to varying state policies. This environment is not conducive to providing a uniform, industry recognized, training approach, regardless of topic. To grow standards education specifically, this barrier needs to be breached; otherwise, one needs to go state by state, and probably institution by institution to advocate/lobby for standards curricula, where applicable, to be introduced.

However, the question that also needs to be asked is “At what level do we start providing standards education”. From my own observation, standards education traditionally either starts in the working world, at the point that you first knowingly encounter a standard, or within a trade or technical school, which teaches you the knowledge to perform the specifics of a job. The introduction point seems about right, as providing it earlier would not allow the significance of a standard to be matched with a person’s experience. This does not mean though that improvements are not necessary; rather, trade technical schools should provide a little more basics in how a standards is developed, key SDOs in the trade, etc., where as post-secondary education should provide standards education in its applicable classes and major courses of study, especially those of a technical nature (engineering being the largest focal area).

The other area the government can help, on some level, is an indirect topic, but very important to standards education is copyright. Copyright law itself is a very murky and not discrete. However, the basic tenet is fairly straightforward – Do not copy without permission. In the Standards world, where funding and revenues are watched closer than ever, it is unknown how much lost revenue there is due to copies of standards are being circulated between people, within companies, and between two parties doing business. SDOs have little resources, let alone time, to pursue their legal rights for compensation/damages against those (and there are many) who break copyright, and so become reliant on people to do the right thing when it comes to revenue. The sad truth is that many people believe “free to use” equals “available for free”.

GE Consumer and Industrial Lighting

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global

marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

In short, GE fully supports the comments submitted by the American National Standards Institute (ANSI) on May 29, 2009. To the first question, we consider the current private sector-led and public sector-supported standardization system to be very responsive to the needs of our nation within the global economy where standardization development is vital. Hence, GE does not support any changes to this standardization system.

To the second question, GE agrees with increased U.S. support for standards education programs in private, public and academic sectors. Indeed, GE supports the twelve initiatives of the United States Standards Strategy (USSS) as approved by the ANSI Board of Directors on December 8, 2005. The ANSI comments are attached to this email for reference.

As the largest U.S. supplier of lighting products, GE Lighting & Industrial plays a leadership role with the American National Standards Lighting Group (ANSLG) in the development of U.S. Standards for our industry. GE Lighting & Industrial is a unit of Louisville-based GE Consumer & Industrial. From its Cleveland headquarters and more than 100 locations worldwide, over 30,000 GE Lighting & Industrial employees fulfill customers' most basic and business critical needs with purposeful innovation, energy efficient lighting solutions and advanced electrical distribution and control products.

GTW Associates

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

1) Public and Private sector standards cooperation and coordination at national policy levels and representation at international policy fora is key to maintaining strong competitive standards positions in the global market. This has not always been the case. Fortunately this is the generally the situation today. GTW Associates endorses the comments to National Survey Question 1 by the American National Standards Institute (ANSI):

In ANSI's view, the current private sector-led and public sector-supported standardization system works exceptionally well and the continued strength of the U.S. standardization system depends upon the ongoing effective cooperation of government

and industry. There is no reason to alter in any way the current balance between private and public sectors in developing standards.¹⁶

Consider for comparison with today the situation 17 years ago. A report by the Congressional Office of Technology Assessment *OTA-TCT-512 Global Standards: Building Blocks for the Future March 1992* describes on page 33 a proposal by the National Institute of Standards and Technology (NIST) for a Standards Council of the United States of America (SCUSA).¹⁷ SCUSA would have had government perform many of the national standards policy coordination operations and representation functions to international standards organizations played then and now by the private sector. As Vice President of the American National Standards Institute at the time of the NIST SCUSA proposal, I can attest that this was a low point in cooperation between the public and private sector national standards policy leadership. This is reflected in the notation in the OTA report on page 33:

Nor would the private sector be likely to support such a role for NIST, judging from the recent NIST hearing on the Standards Council of the United States of America (SCUSA) proposal

Consider also for comparison with today text in the 1983 Federal Trade Commission (FTC) “Standards and Certification” which describes a situation nearly 30 years ago in its summary:

In December, 1978, the Federal Trade Commission initiated a rulemaking proceeding to examine the extent of possible Federal Trade Commission Action violation (unfair methods of competition and unfair or deception acts or practices) in standards development and certification. ... To remedy these practices, staff recommends case-by case enforcement of Section 5 of the FTC Act coupled with an unfair methods of competition rule under 6(g) of that Act.¹⁸

FTC in the late 1970s and early 1980s proposed process regulations of voluntary standards setting. Threats of government oversight regulation during this time frame similarly were not conducive to close public and private sector cooperation.

These factors from the past are evidence that the present level of public and private policy cooperation is indeed historically-speaking relatively good. The current positive cooperation well deserves ANSI and others’ accolades.

GTW observes that even good cooperation can be made even better. With respect to the Obama administrations regulatory policies GTW Associates commented to the Office of Management and Budget March 9, 2009:

¹⁶ ANSI RESPONSE TO NATIONAL SURVEY QUESTIONS ON U.S. STANDARDS POLICIES at <http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/Critical%20Issues/Survey-US%20Standards%20Policies/ANSI-response-05-27-09.doc>

¹⁷ Global Standards Building Blocks for the Future 1992 Office of Technology Assessment at <http://www.gtwassociates.com/answers/OTA9220.pdf>

¹⁸ Federal Trade Commission Standards and Certification Final Staff Report April 1983 Bureau of Consumer Protection available at <http://www.gtwassociates.com/answers/FTCproposedregstandards.pdf>

Various US regulatory policy documents have in the past recognized the contributions of standards. Yet the potential of the voluntary standards community to assist in achieving the goals of the new administration deserves increased attention at the highest levels of the new administration. The positive contributions of standards and the significant potential of standards to achieve administration goals deserve recognition in any revisions to President Clinton's Executive Order 12,866 Regulatory Planning and Review.¹⁹

2) Consider three features of a standards development process: 1) Low Cost; 2) Fast Completion; 3) High Quality. Only two may apply for a given standards project (See Interdependence of Standards Characteristics for elaboration)²⁰

An enormous strength of United States "policies" (in this context "practices") for development of private-sector technology standards is the bottoms up diversified nature of our distributed system ... where different technology and product sectors, different geographies, different business models compete for the scarce resources of a standards development process in anticipation of the reward of the output of the private sector standard whether it be a network effect, a public safety or environmental benefit or consumer good or energy goal. US "policies" such as the National Technology Transfer and Advancement Act of 1995, Public Law 104-113 (the "NTTAA") and OMB Circular A-119: *Federal Participation in the Development and Use of Voluntary Consensus Standards in Conformity Assessment Activities*, encourage and facilitate the growth of standards activities responsive to both private and public sector drivers.²¹ These public policies work well with the bottoms up diversified nature of our distributed system and marketplace.

In our distributed sector-oriented model, the US government can in the future contribute its priorities and forecast success using the three interdependence factors discussed above. If the government believes a standard is needed quickly in any particular sector (perhaps as NIST Acting Director Patrick Gallagher recently shared at an ANSI Washington Caucus) for smart grid, cyber security, health IT, food safety or toy safety then the dependent variables are resources and quality. If standards' quality is to be high then it follows that both adequate public and private sector resources are required. Resources in this regard are the combined value of project budgets, salaries, travel, others' contributions, and lost opportunity costs of the efforts devoted to the task of developing and completing the standard not devoted to other opportunities and projects.

¹⁹ March 2009 Comments of George Willingmyre to Office of Management and Budget on 12866 http://www.reginfo.gov/public/jsp/EO/fedRegReview/GTW_Associates_comments.pdf

²⁰ Interdependence of Standards Development Characteristics at <http://www.gtwassociates.com/answers/Interdependence.htm>

²¹ See P.L. 104-113, National Technology Transfer and Advancement Act of 1995 (enacted Mar. 7, 1996), reproduced at: http://www.nist.gov/director/ocla/Public_Laws/PL104-113.pdf; Circular No. A-119 Revised - Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities (Accompanying Federal Register Materials - 2/10/98), Office of Management and Budget, EOP, accessible at: <http://www.whitehouse.gov/omb/rewrite/circulars/a119/a119.html>

3) The United States should continue strategic activities to promote and support the US standards system at international fora such as the March 2009 Standing Committee on the Law of Patents (SCP) of the World Intellectual Property Organization (WIPO)

GTW Associates participated as a consultant for the US Chamber of Commerce in the March meeting of the Standing Committee on the Law of Patents of the World Intellectual Property Organization.²² In comments to the National Survey, the American National Standards Institute (ANSI) applauded the statement made at this meeting by the government of the United States at this meeting:

In [the U.S. government's] view, the standard setting process should be voluntary and market-driven. Unnecessary government intervention can impair innovation, standards development, industry competitiveness, and consumer choice....The U.S. government recognizes its responsibility to the broader public interest by providing financial support for, and promoting the principles of, our standards setting system globally. U.S. industry competitiveness depends on standardization, particularly in sectors that are technology driven. The United States doesn't encourage government intervention. The issues have long been discussed and are rejected because they hinder innovation, standards development, U.S. industries' competitive advantage and attendant benefits to consumers.²³

Not only was the intervention of the US government a helpful statement of support about the standards system in the United States (self standing on its own), it was a decisive contribution to the positive strategic outcome of the meeting. The debate concerned what role WIPO might play in the controversial matter of patents and standards setting. The outcome of the meeting was that at the present time the World Intellectual Property Organization should not undertake a significant new role for itself with regard to patents and standards setting.²⁴ The US government intervention was a major helpful contribution to this decision at the meeting. Similar to the US government position at this meeting, GTW Associates had suggested WIPO not to begin new work in this area but instead to work with the many international fora with extensive experience in this area²⁵. The US intervention²⁶ is an example of the type of US government action described as necessary and appropriate in comments on the National Survey by the Institute for Trade, Standards and Sustainable Development (ITSSD):²⁷

²² The World Intellectual Property Rights Organization Standing Committee on the Law of Patents (SCP) discussed a paper on patents and standards during meetings March 23-27, 2009 Background and Impressions <http://www.gtwassociates.com/alerts/WIPOSdetail.html#Discussions>

²³ USG intervention at SCP WIPO March 25, 2009 <http://www.gtwassociates.com/alerts/PTOtoWIPO.pdf>

²⁴ The World Intellectual Property Rights Organization Standing Committee on the Law of Patents (SCP) discussed a paper on patents and standards during meetings March 23-27, 2009 Background and Impressions <http://www.gtwassociates.com/alerts/WIPOSdetail.html#Discussions>

²⁵ Comments on Standards and Patents paper at WIPO
<http://www.gtwassociates.com/alerts/deliverednotesstandardsatWIPO.pdf>

²⁶ ITSSD RESPONSE TO NATIONAL SURVEY QUESTIONS ON U.S. STANDARDS POLICIES

²⁷ USG intervention at SCP WIPO March 25, 2009
<http://www.gtwassociates.com/alerts/PTOtoWIPO.pdf>

government promotion and support internationally of the current U.S. standards development model would go a long way toward countering increasing foreign government and intergovernmental organization intervention in, and efforts to redefine the parameters and terms of, the hi-technology standardization process, technology standards development, the internal governance of standard-setting organizations, and free technology markets.²⁸

2) Accreditation Reciprocity should be factored into conformity assessment considerations for US new standards requirements' acceptance and technical regulation conformity assessments

More and more conformity assessment provisions around the world for acceptance of testing results for standards requirements as well as technical regulations include accreditation of laboratory credentials or certification entity capabilities often according to international criteria.

Where one country exercises national treatment with respect to accreditation of a laboratory or certification entity where that entity originates from another country but that second country does not allow reciprocal accreditation of a laboratory or certification where that entity originates from the first country, then the laboratories and certification entities from the first country are at a competitive disadvantage to the laboratories or certification entities of the second country.

GTW recommends that the Administration and Congress contemplate how TITLE 19 CHAPTER 13 SUBCHAPTER II Part A § 2532 (*See* 19 USC § 2532). Federal standards-related activities or new legislation or guidance might be created so as to encourage US regulators to contemplate the role of reciprocity when accreditation of laboratories or certification agencies is part of their conformity assessment activities.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

My directly personal professional experience within an industry trade association, within the American National Standards Institute and as a global trade policy consultant is that the gap between available information and knowledge about standards and the persons and organizations who seek the information (not to speak even of those who *should* be seeking the information but *do not even know* they should be seeking the information) is huge.

While this is good news business opportunity for consultants such as GTW Associates it is a disheartening and regrettable commentary on a 30 year window. Yes GTW Associates currently offers standards education services. GTW Associates supported the Royal Embassy of Thailand in Washington and the Thailand Industrial Standards Institute prepared manuals on the United States Standards and Technical Regulatory Systems. In 2007 and 2008 GTW Associates organized four bilateral trade promoting workshops in Bangkok including standards and

²⁸ ITSSD RESPONSE TO NATIONAL SURVEY QUESTIONS ON U.S. STANDARDS POLICIES

regulatory presentations from US agencies FCC, OSHA, NHTSA, FTC, CPSC, EPA, FDA, NIST, DOC and Trade Associations EIA, INCITS, RMA, TMA, and ITIC and numerous companies, laboratories and accreditation bodies. GTW Associates prepared a Guide to the US/EU Mutual Recognition Agreement for the European Commission.

Michele K. Herman²⁹

This letter is in response to the survey circulated by the Center for Global Standards Analysis. I am an attorney at Woodcock Washburn LLP and I represent a number of standards setting organizations (SSOs) as well as clients who participate as members in SSOs in connection with the development of technical standards. My practice has focused on standards setting issues for more than ten years. I am also an adjunct professor at Seattle University School of Law where I teach a class on standards and opens source software. I have held or currently hold leadership positions in standards committees in the American Bar Association, American Intellectual Property Law Association, and the Intellectual Property Owners Association.

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

The Federal government's support for private sector development of voluntary consensus standards has been fundamental to the explosive growth of innovative technologies over the past decade in the U.S. and has enabled global cooperation on innovative technical solutions to be developed and deployed worldwide. Given the current global economic situation it may be more important now than ever to promote innovation as a means to stimulate the economy, create jobs and reduce costs in many crucial areas such as healthcare and energy. For these reasons, the Federal government should continue or even increase its support for private sector development of voluntary consensus standards.

The National Technology Transfer and Advancement Act (NTTAA) states that "all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies." The NTTAA directs NIST to bring together federal agencies as well as state and local governments to achieve greater reliance on voluntary standards and decreased

²⁹ Woodcock Washburn is a national law firm specializing in intellectual property law. Since being founded in 1946, the Firm has provided personal legal service and advice to clients across a wide range of industries and technologies. In addition to providing counseling and advice to clients concerning standards setting issues, the Firm's attorneys concentrate on intellectual property litigation, patent prosecution and interferences, trademark and copyrights, technology licensing, open source software, and intellectual property strategy development and counseling. This response, however, should not be construed as the position of the Firm or any of its attorneys or clients. This response is based on my personal views as a longstanding practitioner in the relevant field.

dependence on standards developed and mandated by government agencies. The Office of Management and Budget (OMB) Circular A-119 was revised in February of 1998 “in order to make the terminology of the Circular consistent with the National Technology Transfer and Advancement Act of 1995, to issue guidance to the agencies on making their reports to OMB, to direct the Secretary of Commerce to issue policy guidance for conformity assessment, and to make changes for clarity.” The Circular defines voluntary consensus standards as:

standards developed or adopted by voluntary consensus standards bodies, both domestic and international. These standards include provisions requiring that owners of relevant intellectual property have agreed to make that intellectual property available on a non-discriminatory, royalty-free or reasonable royalty basis to all interested parties.

Voluntary consensus standards bodies according to the Circular:

are domestic or international organizations which plan, develop, establish, or coordinate voluntary consensus standards using agreed-upon procedures. ... A voluntary consensus standards body is defined by the following attributes:

- (i) Openness.
- (ii) Balance of interest.
- (iii) Due process.
- (vi) An appeals process.
- (v) Consensus, which is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments.

The American National Standards Institute (ANSI) accredits standards development organizations that meet these same requirements. While ANSI- accredited organizations develop or approve many of the of voluntary consensus standards in the US today, increasingly many other non-accredited SSOs such as consortia and trade associations (“Consortia”) develop voluntary consensus-based standards. Such Consortia in many cases meet the OMB requirements for a voluntary consensus standards body and include policies that ensure owners of intellectual property rights needed to practice the standard have agreed to license such intellectual property under terms that are non-discriminatory, and on a royalty free or reasonable royalty basis to all interested parties.

The Federal government’s reliance on and support for voluntary consensus standards has in large part fostered a wave of innovation over the last decade. We can purchase and pay for goods and services on-line at any time, from any place, and from any device that has an internet connection. We can use our camera phones to take pictures while on vacation and send them in essentially real-time to family and friends anywhere in the world. Many of us have GPS devices that provide on-the-spot turn-by-turn directions to our desired destination. Voluntary consensus based standards are the foundation to these everyday experiences that were unheard of or unavailable to most Americans a decade ago. In addition to the importance of such voluntary

consensus standards to the private sector, similar scenarios built on the same voluntary consensus standards are used by government employees and the US military in carrying out their missions.

The goals and objectives of each standard development effort are often quite different as are the relevant stakeholders, the technology involved, the timetable for development, and the expected life expectancy of the standard. Moreover, standards are often designed to supplement or work with other related standards. This is especially true as the lines between industry sectors and even software, hardware, and services blur as a consequence of technical convergence. As a result of these factors, each SSO will have a different structure, policies, procedures, standards development processes, and intellectual property policies. While many of them will meet the requirements in the Circular for voluntary consensus standards bodies, these SSOs may vary greatly from one to the next. This diversity, in turn, enables the private sector to be sufficiently agile and efficient when responding to both public and private market needs. Government oversight that would restrict such diversity or limit the flexibility built into our current standards ecosystem would not be helpful.

Today more than ever the private sector continues to innovate relying on voluntary consensus standards to fuel the development of new user scenarios like the ones mentioned above. The flexibility that the private sector has to utilize existing SSOs or form new SSOs tailored to their objectives also encourages the private sector to develop new innovative technology where demand may be more speculative at the outset. The current ecosystem for standards development is therefore a substantial driver for innovation that results in more user choice and competition. The government's requirement that Federal agencies rely on voluntary consensus standards and the current standardization system that produces them is, in my view, a significant factor in achieving these benefits.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

In my view, the public and private sectors need more than ever to team up to provide education specifically targeting standards implementation and better conformance and testing practices. Standards are only useful if they actually work in practice. For interoperability standards, this means that products and services that implement the same standards should work well together out-of-the-box. The implementation of standards, however, has become an increasingly complex task especially for ICT standards which are used in all industry sectors including the public sector.

Education to encourage and help standards developers produce effective conformance tests and programs, as well as appropriate conformance criteria for each standard is particularly needed. Standards implementation and conformance is complex especially for interoperability standards for a host of reasons. The specifications for such standards are often hundreds if not thousands of pages with equally as many technical requirements. Conformance tests are not

developed for many standards given the rapid pace of standards development to meet ever-shorter product life cycles. A substantial number of these standards do not even offer clear conformance criteria. Consequently, not only are requirements subject to different interpretations by implementers but different subsets of those requirements may be implemented where both practices result in non-conforming products that do not interoperate. Standards are not likely to be effective if those products implementing them do not conform and do not interoperate. It would be helpful to provide standards developers the appropriate conformance tools and educate product developers regarding the importance of conformance and the use of such tools.

Standards are often built on other standards and may be interdependent. Thus care must be taken when implementing one standard to avoid “breaking” an implementation of another standard. Moreover, because products are quite frequently introduced before a standard is finalized such products may not be conformant with the final standard and may still be on the market after the final standard is adopted. Product developers strive to update and replace their products once the standard is defined but there is almost always some lag period where early partial implementations must co-exist with later conformant implementations. Similarly, standards evolve over time. Products implementing new versions of a standard should be able to be introduced into the marketplace in a way that enables them to seamlessly co-exist with products based on earlier versions of the same standard. Education concerning best practices for handling such situations would be useful.

Further, interoperable products may not always conform to the standard and conversely conformant products may not always interoperate. For example, an early implementation, albeit not a conforming one, may become the reference implementation against which other implementations are tested for interoperability. Alternatively a conforming implementation may fail to interoperate with another conforming implementation due to ambiguities, errors or omissions in conformance tests or criteria. For these reasons, I also recommend that a greater educational focus be placed on the development and implementation of effective interoperability and conformance testing programs

In sum, I believe the government’s support for voluntary consensus standards should remain strong or even increase to enable continued private sector innovation utilizing the existing built-in flexibility of our current voluntary consensus based standards system. The government, however, could partner with the private sector to increase education and training related to the implementation of standards to improve standards conformance and interoperability so that our standards system can be even more successful.

IAECT³⁰

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

IACET has a rich history of promoting educational quality. Created in 1968, IACET's Criteria and Guidelines for Quality Continuing Education and Training Programs are the standards by which hundreds of organizations measure their educational offerings. Based on the original Criteria and Guidelines, IACET's newly-approved ANSI/IACET 1-2007 Standard address processes for designing, developing, and delivering continuing education and training, not the content of individual programs, which means that our Standard applies across all disciplines. Through an emphasis on the educational processes, the Standard ensures clear program development and valuable learning outcomes. Because our organization addresses processes and procedures of organizations in delivering CET, we do not believe a need for a change to the current private sector-led and public sector-supported standardization system is warranted. The current system works well and has been adapted to the integrated global economy through the United States Standards Strategy. The U.S. government recently endorsed the current standardization system and stated that it does not endorse further government intervention.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

IACET is recognized as an ANSI Standards Developing Organization (SDO) and agrees with ANSI's position on the matter that the United States should increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace. IACET's current Standard for Continuing Education and Training evaluates programs on the following ten (10) areas; the CET organization, responsibility and control, the learning environment and support systems, learning event planning, learning outcomes, planning and instructional personnel, content and instructional methods, assessment of learning outcomes, system for awarding CEUs and maintaining learner records and program evaluation. IACET's specific recommendations for increased standards education support in the private, public and academic sectors include:

- Develop new or significantly enhance existing standards education programs that address the significance and value of standards to the well-being of the United States and global economies.

³⁰ Illinois Association for Education Communication and Technology, <http://www.iaect.org>

- Develop or significantly enhance standards education programs that address the needs of specific groups within the United States. These programs must reflect the multidisciplinary environment in which standards development takes place and address national and international standards development procedures; the relationship between private and public sector standards; the environment, health, safety, sustainability, international trade, public policy, competition, legal, economic benefits, and strategic considerations; and how to balance the interests of stakeholders.
- Develop a national database of standardization case histories. The database should be jointly managed by the American National Standards Institute and the U.S. Department of Commerce.³¹
- Encourage universities and colleges within the United States to create standardization education programs in fields of study such as engineering, science, medicine, technology, government and public policy, business, economics and law.

Facilitate and enhance the creation of a communications network for standardization education programs among all interested parties in the private, public and academic sectors. Utilize Internet technology to the fullest extent possible to facilitate the development of e-learning and standardization education programs.

IEEE

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

The current U.S. standardization system bears many marks of success. The National Technology Transfer and Advancement Act of 1995, directing federal government agencies to use standards developed by private, voluntary consensus standards bodies instead of developing their own standards or regulations, has borne fruit. Industry and government have formed successful partnerships in the standards arena, and the U.S. federal government has found significant cost savings as a result.

Government can and does provide impetus to standards development. This is appropriate. Generally, regulations in support of consensus standards do accelerate their adoption; the threat of regulation may have the same effect. However, there are also some negatives to greater government participation in the formation of standards. For one thing, regulators are not

conditioned to work with the uncertain schedule of consensus generation and this can lead to frustration on both sides. Laws and regulations without sufficient time for consensus end up being suboptimal or having significant unintended consequences. The IEEE urges a federal policy toward standardization that supports the work of the private sector and respects its expertise and independence.

Globalization is an ongoing phenomenon in standardization. To use IEEE-SA as an example, significant numbers of IEEE standards are now adopted by the big-I international standards developing organizations, ISO, IEC, and ITU. Increasing numbers of non-North American participants work in IEEE standards developing committees and serve on our governance bodies. And the IEEE-SA continues to enter into cooperative agreements with international, regional, and national standards bodies (e.g., ISO, IEC, ITU, CEN, CENELEC, etc.).

However, the current structure built to address globalization in standardization lacks the necessary dimensionality to represent the real environment. Today's standards are developed in global cross-industry/government/academic/standards community collaboration. Students and professionals in all geographies need to remain competitive to participate in this environment. Market needs, technical needs, economic needs are not necessarily met—or even reflected—in the standards system in place in the world today.

Note that while national borders are somewhat transparent when it comes to actual standards development work, inside the standards system itself, these borders become visible. This can have a positive or negative impact, and caution is required. There are those who view the standards setting process as a way to compete with the rest of the world rather than as a platform to enable competition and innovation. National governments, including the U.S. federal government, must avoid temptations such as using standards themselves as competitive tools or means to erect barriers to trade.

All would benefit from continued innovation in the global standards structure so that it can become more streamlined, more effective, and more reflective of the environment in which standards developers actually operate. To that end, the IEEE Standards Association actively works in support of the WTO guidelines that define the key principles of international standardization, including but not limited to transparency of process and market relevance of work product.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

IEEE-SA does not believe that the purpose of standards education—or standards development in general— should be to maintain or enhance a nation's competitive position in the global marketplace. IEEE is an international organization with a global membership; close to 50 percent of our membership resides outside the United States. Our policies, including those regarding standards education, reflect that fact. Optimally, national borders should be as transparent as possible in standards development and in standards education. In a time of increasing globalization

all students and professionals, worldwide, need to remain technically competent and eager to drive innovation through fair competition.

IEEE-SA's goals for increased standards education support standards education in the private, public, and academic sectors. The IEEE-SA Standard Education Committee (SEC) was chartered in 2006. The mission of this nascent program is to:

- Promote the importance of standards in meeting technical, economic, environmental, and societal challenges.
- Secure and disseminate learning materials on the application of standards in the design and development aspects of educational programs.
- Secure and provide short courses about standards needed in the design and development phases of professional practice.
- Actively promote the integration of standards into academic programs.

The SEC is a joint standing committee of the IEEE Educational Activities Board (IEEE-EAB) and the IEEE-SA. The scope of the SEC is to “secure and disseminate high-quality learning materials, including short courses, about standards that are currently used in the design and development of products, processes, and services.” To that end, the IEEE-EAB/SA SEC has embarked on the following activities:

- **Tutorials:** Free online learning modules providing information about how standards came about, how they are classified, how they impact the future, and how they benefit the economy.
 - **Case illustrations:** Free online modules describing the application of standards to achieve a specific design objective.
 - **Student application papers:** Small grants to help with graduate and capstone design projects with an industry standards component; papers address the way specific standards were applied to a task and how they impacted the design process.
 - **Standards Reference Dictionary:** An alphabetical listing of standards development bodies and other associations that support the teaching of standards to undergraduates.
 - **Glossary:** Explanation of terms and phrases commonly used by standards developers and users.
 - **Speakers bureau:** The Standards Education Speakers Bureau will tap into the expertise of those volunteers within the IEEE standards community, who will share their knowledge to help promote and educate about standards.
 - **IEEE Global Standards Search:** A web portal that will provide users with descriptions of and access to all known credible programs in standards education at the university and post-university (continuing education) levels.
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Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

My own view is that standards policy needs to be coordinated with other policies to increase US competitiveness. On a variety of cross-national innovation indicators, the US is not doing as well as one might expect, and this is hurting our economy. The US government needs to take a more supportive role not only in assisting with standards development but with support R&D, commercialization, and regulatory adjustments that will help the US private sector in global markets.

Although in theory the US standards system is accessible to all stakeholders, in practice it is not. Consumer groups and end-users are rarely participants in standards groups, and it is often difficult for foreign industry to participate in US standards groups or international standards bodies which hold meetings in the United States. For example, Chinese company standards managers are routinely denied visas to attend standards meetings in the US, whereas US company standards managers never have difficulties obtaining visas for China. If the US does not adjust its visa policies, global standards bodies will increasingly hold their meetings outside the US in order to allow for full representation of all stakeholders. That will raise costs to the US, reduce a source of income for the cities which could host such meetings, and reduce US influence in standards bodies.

The US needs to welcome the debate about the appropriate role between standards and intellectual property rights. This is a concern widely raised amongst developing countries, but it should also concern the US government. Over-protection of IPR raises the costs of standardization and is detrimental to the US economy. There needs to be a fairer balance.

The US needs to encourage a discussion and perhaps negotiations about the proper relationship between standards and national security. We are very concerned about China's information security standards, but their policy is rooted in an exception that is provided for in the WTO's TBT Agreement. However, there is no genuine consensus on the meaning of "national security" and how broadly the exception can be applied.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

My sense is the "standards" education is miniscule in the US and everywhere else. Some universities may have classes, but I'm not aware of much else. Standards are viewed by society as

³² This response reflects the views of Professor Scott Kennedy.

a technical issue not relevant to their daily concerns, until they run into a standards problem, such as incompatibility of two technologies. I would welcome greater investment in standards education in the United States and elsewhere, and I'd be willing to be involved in such an effort in China. Beyond that, I'm afraid I don't have specific suggestions on what a curriculum should look like or how exactly it should be implemented.

Information Technology Industry Council

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

ITI does not believe fundamental changes to the standardization system are needed³³. The U.S. ICT industry has experienced continuous growth in productivity and innovation over the past four decades, but the beneficial impact of ICT on virtually all sectors of the U.S. economy and every aspect of society has been even greater. This growth could not have been achieved without the voluntary collaboration of private industry stakeholders in partnership with government in the development of globally relevant ICT standards. Moreover, the rate of ICT growth and innovation requires a system of standardization which utilizes consortia and other standards-setting organizations in addition to the international standards bodies (ISO, IEC and ITU).

Today, ICT is the foundation of a global marketplace, global communities, and global economic interdependence fostered by adoption of global standards.

Global ICT standards share three important characteristics:

- They respond broadly to the needs of global markets.
- They demonstrate relevance through voluntary worldwide adoption and implementation.
- They are products of standardization processes that are consensus-based, transparent, and industry-led with participation open to all materially affected parties.

ITI believes that the basic principles forming the U.S. Standards Strategy remain sound, relevant and essential to both U.S. competitiveness and global cooperation. These principles include:

- Market-led
- Sector-specific
- Voluntary, consensus-based, performance-based

³³ ITI believes the decentralized, voluntary, market-driven standardization system which has brought us to this point is one which can carry us into a globally connected future with equal or increased productivity, capability and competitiveness.

- Balanced, flexible IPR policies
- Government as consumer, partner and participant

The world continues to change, and the best systems evolve organically to meet new requirements. Within the framework of the principles above, the role of government as a partner has become increasingly important to the continued success of ICT industry standards. With this in mind, ITI does not see a need for government oversight over the U.S. standards system.

The government should, however, partner with the industry to ensure market access by:

- 1) Aggressively addressing technical trade barriers that may arise as a result of local or regional standards being adopted/mandated over global equivalents; and
- 2) Increasing participation in the development of technical standards domestically and internationally as an ICT consumer through its technical experts.
- 3) Supporting and promoting global cooperation and harmonization of standard in such areas as public health, safety and the environment.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization’s specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

Standards education programs are essential for the U.S. to maintain – even enhance – its competitive position in the global marketplace. ITI’s recommendations for increased standards education focus on both national and international fora. Additionally, standards education should be not be limited solely to technical fields, but rather, should occur in all sectors – private, public and academic – and across multiple academic disciplines.

In our view, standards education is an opportunity for increased partnership among industry, academia and government, and should help build awareness of the role and importance of standards, including how the U.S. standards system facilitates trade and innovation in a timely manner. Clearly, standards benefit all sectors of the economy. Accordingly, standards education needs to be viewed holistically. With this in mind, we offer the following recommendations:

- 1) Encourage inclusion of standards education in college and university curricula. According to a recent seminar on standards education hosted by the National Institute of Standards and Technology (NIST), of approximately 2,500 universities in the U.S., only five have formalized standards programs.³⁴ Participants from a variety of sectors agreed that education about standards is essential, regardless of whether the instruction is provided as

³⁴ *Promoting Education about Standardization* May 8, 2009. The link is <http://ts.nist.gov/Standards/Promoting-Education-About-Standardization.cfm>

stand-alone courses or is integrated within existing modules. Clearly, more needs to be done in this area.

Curriculum expansion in U.S. engineering schools relies heavily on requirements set by Accreditation Board for Engineering and Technology (ABET). At present, ABET does not include any requirements regarding standardization as part of the university curriculum requirements for engineers. Government, universities, industry stakeholders and other interested parties should offer strong encouragement to ABET to include standards education as part of its requirements in engineering programs. In addition, constructive input could be provided to ABET regarding general areas of focus, such as the characteristics of standards systems and processes; descriptions of the types of standards bodies that exist in the U.S. and globally; and how standards fit into a larger business context.

- 2) Extend standards education across multiple fields and disciplines. Traditionally, standardization has been linked primarily to technical fields. While certainly important, we believe that such a narrow focus may unnecessarily diminish an appreciation and understanding of the critical role standards play in all aspects of the domestic and global economies. Accordingly, we believe that standards educational programs should not only be expanded to relevant technical fields of study, but to other fields as well, such as government and public policy, business, economics and law.

Courses on standards and standardization are necessary to build basic awareness in all fields. While the content of such courses may vary according to discipline, particular emphasis should be given to the significance and value of standards to the well-being of the U.S. and global economies. We also recommend including instruction on the hallmarks of the U.S. standardization system – voluntary, market-driven, de-centralized, and responsive to the fast pace change in information technology. Other areas of emphasis should include the multidisciplinary environment in which standards development takes place; how standards processes and procedures differ for national and international standards development; the relationship between private and public sector standards, as well as the public-private partnership in standards development, including but not limited to such areas as the environment, health, safety, and sustainability; the role of standards in international trade and public policy – including the role of standards as possible technical barriers to trade or contributing to industrial policy, competition, legal, economic benefits, and strategic considerations; and how seeking to balance the interests of stakeholders contributes to the formation of a standard.

- 3) Fund and develop international outreach initiatives to complement domestic educational initiatives. Not too long ago, standardization activities were concentrated at a national or regional level. With the globalization of the economy and, in particular, the advent of the digital age, information and communications technology products have helped blaze the trail for global standardization. Accordingly, we believe that the domestic educational focus should be complemented by the creation of standards education opportunities and resources for non-U.S. government officials, representatives/participants in standards

developing organizations (SDOs), and employees in private industry, such as engineers, especially in emerging economies.

Many U.S. and foreign-based SDOs already provide education to their counterparts in other countries. For example, representatives from member companies of ITI have provided training on standards developed by the U.S. National Body INCITS to the China Electronics Standardization Institute, as well as provided outreach materials to government representatives of the European Union (EU). The American National Standards Institute also engages in outreach efforts for government and industry representatives around the world, highlighting the merits of the U.S. system. At the governmental level, NIST has provided training to representatives of foreign governments through its Standards in Trade Workshops, to help them understand the features and operational aspects of the U.S. standardization system. Unfortunately, budget allotments for such efforts have been shrinking steadily over the past few years.

ITI recognizes that the U.S. government may have limited funding for use in training representatives of other governments. Nevertheless, we strongly encourage Congress and government policy makers to consider increasing funding for the workshops and other, similar initiatives. The EU has provided significant funding for its officials to travel to other countries or to have key officials from other countries to visit Europe. Through these efforts, the EU encourages other countries to model their developing standards systems after the EU's own standards process. More recently, China, as it establishes itself as a global economic leader, has begun to cultivate relationships with other emerging economies and advocating a more centralized, mandatory, top-down standards system which is in contrast to the U.S. standards system which is voluntary and market-driven.

The risk of U.S. *underinvestment* in this area cannot be overstated. We would welcome government assistance to expand our efforts to promote the merits of the U.S. standards system, which helps foster innovation and enables U.S. industries to remain competitive in global markets.

Institute for Trade, Standards and Sustainable Development

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

The key to success in global standards setting is high quality, long term participation in strategic and tactical activities. In cases where positions advanced by any country's or region's (U.S. or otherwise) government and by its private sector are aligned, well founded, well prepared and well delivered, they will have a significant and lasting impact.

The U.S. National Technology Transfer and Advancement Act of 1995, Public Law 104-113 (the "NTTAA") reflects the America's innovative sectoral approach to balancing the respective roles of the public and private sectors in the area of technical standardization.³⁵ The NTTAA clearly favors, where feasible, the use of private sector developed and voluntarily adopted consensus-based standards and conformity assessment procedures for both federal agency regulatory and procurement purposes, over government-created standards or regulations. It also directs the National Institute of Standards and Technology ("NIST") to "bring together federal agencies as well as state and local governments to achieve greater reliance on voluntary standards and decreased dependence on in-house standards."

The NTTAA was implemented via an updated OMB Circular A-119: *Federal Participation in the Development and Use of Voluntary Consensus Standards in Conformity Assessment Activities*, through which the U.S. government proceeded to systematically replace thousands of public sector-created standards with more market-relevant and cost-effective privately-developed standards.³⁶ Pursuant to amended OMB Circular A-119, the U.S. government also enshrined as federal public policy a participatory process of national consensus that called for extensive written public comments as well as open and inclusive public hearings to promote the private standards development process. In addition, Circular A-119 encouraged, and U.S. private standards development organizations have continued to pursue, a unique 'multiple path' approach to technical standardization that promotes extensive collaboration within the diverse private standards-setting community and the full participation of all interested parties in technical standards development, to ensure the efficient and cost-effective development and dissemination of market relevant industry-based standards, consistent with free market and principles and private property rights, for use within domestic and international markets.

³⁵ See P.L. 104-113, *National Technology Transfer and Advancement Act of 1995* (enacted Mar. 7, 1996), reproduced at: http://www.nist.gov/director/ocla/Public_Laws/PL104-113.pdf.

³⁶ See Circular No. A-119 Revised - *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities* (Accompanying Federal Register Materials - 2/10/98), Office of Management and Budget, EOP, accessible at: <http://www.whitehouse.gov/omb/rewrite/circulars/a119/a119.html>

As the result of U.S. government encouragement, different private standards-setting organizations throughout the U.S. have improved their cooperation and established closer relationships, and this, in turn, has facilitated even greater interactions and coordination between and among the public and private sectors overall. Indeed, the broad, flexible, nimble and versatile bottom-up U.S. national approach to technical standards development has been quite successful in responding to rapidly changing technologies as well as to consumer needs and demands in the U.S. and global marketplaces. The market-based approach to U.S. standardization has also proven itself resilient against the challenges of globalization, including the proliferation of top-down government centralized regulation and standardization policies within other countries, and has continued to enable the U.S. to maintain a comparative and competitive advantage in international trade and innovation. Consequently, the U.S. should change *neither* its successful current policy of fostering and supporting *development* of private-sector IP-rich technology standards, *nor* the respective roles of the private and public sectors in the U.S. standards development process.

However, current U.S. policies for *promoting and supporting* already developed and evolving U.S. private sector-based technology standards internationally could be further refined and enhanced, and would likely benefit from further study and review. To this end, emphasis should be placed on how the U.S. government can better promote and financially support the current bottom-up free market and private property-based U.S. standardization model internationally, especially within U.S. developing country trading partners wishing to participate more fully in the international trading system, and at various international fora. In the latter case, greater U.S. government promotion and support internationally of the current U.S. standards development model would go a long way toward countering increasing foreign government and intergovernmental organization intervention in, and efforts to redefine the parameters and terms of, the hi-technology standardization process, technology standards development, the internal governance of standard-setting organizations, and free technology markets. U.S. government support is essential to preventing such interventions, which work only to the detriment of U.S. patent-rich technology owners, the U.S. private technology standards developers, and ultimately, U.S. economic competitiveness.

Indeed, the U.S. government's participation in the recent March 25, 2009 meeting of the World Intellectual Property Organization's (WIPO's) Standing Committee on the Law of Patents (SCP) in support of, and for the purpose of promoting internationally, the U.S. bottom-up, market-based approach to patent-rich technology standards development, is a good beginning; however, it arguably should be expanded upon and extended beyond WIPO into other international fora.

For example, U.S. government-prepared comments clearly emphasized that,

“...[T]he standard setting process should be voluntary and market-driven. Unnecessary government intervention can impair innovation, standards development, industry competitiveness, and consumer choice...The U.S. government recognizes its responsibility to the broader public interest by providing financial support for, and promoting the principles of, our standards setting system globally. U.S. industry competitiveness depends on standardization, particularly in sectors that are technology driven. The United States doesn't encourage government intervention. The issues have long been discussed and

are rejected because they hinder innovation, standards development, U.S. industries' competitive advantage and attendant benefits to consumers" (bold-faced emphasis added).³⁷

Such U.S. government support was well placed and had great effect. It provided a very helpful contribution to the conclusion of the SCP meeting, with the SCP recognizing that it should not entertain any further studies that would elaborate for itself a greater role in the international standard setting process. U.S. government input also ensured that the WIPO would keep open indefinitely a controversial report the WIPO staff had prepared on the topic of Patents and Standards (SCP/13/2). Furthermore, U.S. government comments prompted the WIPO SCP to acknowledge the importance of its fostering greater cooperation and liaison with international standards organizations.

Furthermore, the U.S. government supported and promoted the current U.S. standards model at this recent SCP meeting, albeit indirectly, by helping the ITSSD, an *ad hoc* observer to the SCP, to share with WIPO SCP members and observers then attending the March 2009 meeting the very detailed comments it had prepared in response to (SCP/13/2).³⁸ The ITSSD had met with USPTO staff and a U.S. government interagency group on several occasions during the spring of 2009 to discuss how forthcoming ITSSD comments on the Patents and Standards report, drafted without the input or review of the U.S. government, could help the U.S. strategic position internationally. Apparently, the U.S. government found the ITSSD comments to be consistent with the U.S. approach to standardization as well as the government position in support thereof. This anecdote well illustrates how coordination and cooperation between the public and private sectors can produce a mutually beneficial U.S. strategic result in an intergovernmental policy forum.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

In order to preserve and strengthen the current bottom-up private sector U.S. approach to technology standardization, as well as, the free market, private property and rule of law-based principles which underlie it, the U.S. must increase its support for U.S. standards education programs. This must be done domestically as well as internationally, consistent with Strategic

³⁷ See *USPTO Statement to WIPO*:

<http://publicaa.ansi.org/sites/apdl/Documents/News%20and%20Publications/Links%20Within%20Stories/US%20Statement%20on%20Patents%20and%20Standards.pdf>;

<http://www.gtwassociates.com/alerts/PTOtoWIPO.pdf> .

³⁸ See *ITSSD Comments Concerning SCP/13/2 – Standards and Patents* (March 23, 2009) at:

<http://www.itssd.org/ITSSD%20Comments%20-%20SCP%2013-2%20Standards%20and%20Patents%20-%202013-23-09%20-%20II.doc> ; *Executive Summary of ITSSD Comments Concerning SCP/13/2 Report on Standards and Patents*, at:

<http://www.itssd.org/Executive%20Summary%20of%20ITSSD%20Comments%20-%20SCP%2013-2%20Standards%20and%20Patents%20-%202013-23-09%20-%20II.doc>

Initiative No. 10 of the United States Standards Strategy. It emphasizes the need for establishing “standards education programs covering the development and implementation of standards...focus[ing] on the needs of leaders and top executives, those who participate in the development of standards, university and college students, and other interested parties”.³⁹ The ITSSD believes that this is essential to maintaining U.S. global competitiveness, especially amid efforts by foreign governments and activist groups to redefine and conflate longstanding standards terminology and practices against U.S. national interests.

The ITSSD has focused a portion of its nonprofit educational programming on international standardization and related regulation and intellectual property-based innovation issues, with a view toward identifying new forms of disguised protectionism. It has produced several globally recognized white papers and published law and economic journal articles and its representatives have participated in domestic and international panel discussions and at other events on these topics. ITSSD representatives have also met with U.S. government agencies and foreign government officials to discuss various aspects of these several issues. The ITSSD secured *ad hoc* observer status at the WIPO SCP, and prepared its comments to SCP/13/2 for precisely this purpose. The ITSSD and its Advisory Board would be pleased to elaborate on these and other of its standards education efforts should it be requested to do so.

National Council for Prescription Drug Programs

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

NCPDP does not recommend a change to the current private sector-led and public sector-supported standardization system. The U.S. government, via the Department of Health and Human Services (HHS) is an active supporter of the current standardization system work on the Health Insurance Portability and Accountability Act (HIPAA) and the Medicare Modernization Act (MMA), for example, further government intervention is not warranted; further government participation as stakeholders is welcomed and encouraged.

NCPDP and its members work with government agencies at the federal, state and local levels to achieve optimum compatibility between government laws and regulations and the voluntary standards of industry and commerce, as well as ensuring that voluntary consensus standards provide for government requirements in their procurement of goods and services.

NCPDP recommends that public policy should build upon the demonstrated successes in this area and continue to encourage government, consumers, industry, and voluntary standards developers

³⁹ See *United States Standards Strategy*, accessible at U.S. Standards Portal, at: http://www.standardsportal.org.cn/usa_en/standards_Strategy-1.aspx

to rely upon the public-private partnership model to explore consensus-based solutions to key national priorities.

The key to a successful partnership is active participation, which requires support and resources from government policy makers at all levels.

It is important for the industry and SDOs to be involved in government requirements for new or revised regulations at the exploratory time before the beginning of the regulatory process and in time to update standards to meet government requirements before final regulations are promulgated. We know this works from an NCPDP perspective and government active involvement in HIPAA and MMA both in the electronic prescribing and Medicare Part D processes. Discussion of industry practices, standards available for usage, and other conversations improved (and continues to improve) the regulations and guidance that are produced. Such an arrangement benefits the government and the private sector with a more precise match between standards and regulations.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

The United States should increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace. NCPDP supports the recommendations ANSI submitted.

National Electrical Manufacturers Association

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

No change to the current private sector-led and public sector-supported standardization system is warranted. As shown below, the current system works well and has been adapted to the integrated global economy through the United States Standards Strategy. Indeed, the U.S. government recently endorsed the current standardization system and stated that it does not endorse further government intervention.

A. The Current Private Sector-Led Approach Is Working Well

By way of introduction, NEMA is the association of electrical and medical imaging equipment manufacturers. Founded in 1926 and headquartered near Washington, D.C., its approximately 450 member companies manufacture products used in the generation, transmission and distribution, control, and end use of electricity. These products are used in utility, industrial, commercial, institutional, and residential applications. The association's Medical Imaging & Technology Alliance (MITA) Division represents manufacturers of cutting-edge medical diagnostic imaging equipment including MRI, CT, x-ray, and ultrasound products. Worldwide sales of NEMA-scope products exceed \$120 billion. In addition to its headquarters in Rosslyn, Virginia, NEMA also has offices in Beijing and Mexico City.

The success of the current private sector-led U.S. standardization system is evidenced by the National Technology Transfer and Advancement Act of 1995, Public Law 104-113 (the "NTTAA"). The NTTAA directs federal government agencies to use, wherever feasible, standards and conformity assessment solutions developed or adopted by private, voluntary consensus standards bodies in lieu of developing government-unique standards or regulations. The voluntary consensus standards are to be used for both agency regulatory purposes as well as in their procurement activities.

The NTTAA was the logical consequence of the Clinton Administration's push to eliminate the tremendous waste caused by the use of unique government standards by the military and elsewhere. The differences in the public and private specifications led in too many cases to the Federal government having to procure custom products when functionally similar products were readily available in the commercial marketplace. This led to reform by the incoming Clinton Administration and their strong support for passage and implementation of PL 104-113 and the replacement of thousands of uniquely public sector standards throughout the government with ones developed by the private sector.

Almost immediately after enactment of PL 104-113, the Clinton Administration Office of Management and Budget ("OMB") moved aggressively to implement the NTTAA through a major update of OMB Circular A-119: *Federal Participation in the Development and Use of Voluntary Consensus Standards in Conformity Assessment Activities*. The OMB process rigorously pushed for a national consensus through extensive public comment both in writing and in public hearings. This process went into much greater detail than was possible in the statute and led to a document laying out the parameters of public/private cooperation that has stood the test of time. OMB Circular A-119 confirms that close interaction and cooperation between the public and private sectors are critical to developing and using standards that serve national needs and support innovation and competitiveness and allowed for continuation of the extensive participation of all interested parties in standards development, a factor often credited with giving the United States the most objective and rigorous standards in the world. "Voluntary consensus standards bodies" are defined in the Circular broadly so as to include both ANSI-accredited Standards Developing Organizations ("SDOs") and a wide range of consortia.

The NTTAA also encourages the agencies to be active participants in the standards development process. The NTTAA directs the National Institute of Standards and Technology ("NIST") to "bring

together federal agencies as well as state and local governments to achieve greater reliance on voluntary standards and decreased dependence on in-house standards.”

Since the NTTAA became law in 1995, the U.S. federal government has saved millions of dollars by using consensus standards for procurement purposes and mitigating overlap and conflict in regulations and industry benefits by being able to manufacture one product both for public and private sector users. During the last decade, great progress has been made in the cooperative standardization efforts of industry and government, including significant accomplishments in such critical areas as health and safety, security and defense, protection of the environment and technological advancements.

In NEMA’s view, public policy should build upon the demonstrated successes in this area and continue to encourage government, consumers, industry, and voluntary standards developers to rely upon the public-private partnership model to explore consensus-based solutions to key national priorities.

The key to a successful partnership is active participation, which requires support and resources from government policy makers at all levels.

Under the current private sector-led approach, the federal government is already a key player in the U.S. standardization system. The thousands of agency representatives who participate in the standards development process are instrumental in ensuring agency compliance with the NTTAA and OMB Circular A-119.

In NEMA’s view, the current private sector-led and public sector-supported standardization system works exceptionally well and the continued strength of the U.S. standardization system depends upon the ongoing effective cooperation of government and industry. There is no reason to alter in any way the current balance between private and public sectors in developing standards.

The impact of Globalization does not dictate a different approach, it shows even more clearly that the current system is working. Every year many U.S. national standards are adopted as International Standards. Every year more and more overseas participants join U.S. standards developing committees and more and more foreign governments enter cooperative agreements with U.S. standards developing organizations. Indeed, the framework for U.S. participation in international standards was agreed to by all interested parties in 2005, when ANSI, working in conjunction with stakeholders, in government, industry standards developing organizations, consortia, consumer groups and academia, developed the United States Standards Strategy (“USSS”) which reflects a commitment to a sector-based approach to voluntary standardization activities and a recognition of the need for standards designed to meet stakeholder needs irrespective of national borders. The USSS was designed to meet the need for a statement of purpose and ideals and to provide a vision for the future of the U.S. standards system in today’s globally competitive economy. The USSS expressly recognizes that “global standardization goals are achieved in the United States through sector-specific activities” and a “market-driven, private sector-led approach.”

B. The U.S. Government Supports the Current Private Sector-Led Approach to Standardization Which Provides Unique Advantages

The U.S. government recently endorsed the current private sector-led U.S. standards system in a presentation by the United States Patent and Trademark Office (“USPTO”) to the World Intellectual Property Organization (“WIPO”) Standing Committee on Law and Patents (“SCP”) meeting on March 25, 2009. In that presentation, the U.S. government took a firm stand that “there is NOT a crisis, as claimed by some, in standard setting” in this country. Specifically, the presentation stated:

In [the U.S. government’s] view, the standard setting process should be voluntary and market-driven. Unnecessary government intervention can impair innovation, standards development, industry competitiveness, and consumer choice....The U.S. government recognizes its responsibility to the broader public interest by providing financial support for, and promoting the principles of, our standards setting system globally. U.S. industry competitiveness depends on standardization, particularly in sectors that are technology driven. The United States doesn’t encourage government intervention. The issues have long been discussed and are rejected because they hinder innovation, standards development, U.S. industries’ competitive advantage and attendant benefits to consumers. (Emphasis added.)

As detailed in part 2(d) below, the U.S. government also encourages and endorses the use of “Open Standards” as “traditionally defined,” that is those developed through an open and collaborative process.

C. The Relationship Between the Voluntary Consensus Standards Process and Obama Administration Initiatives

While NEMA feels strongly that the basic U.S. approach to standards should not be changed, we are pleased with the new administration’s promise for openness in government and increased cooperation with the private sector and look forward to exploring ways that our existing public/private partnership in standards can be made stronger. In this regard, we have two suggestions. First, standards development, since the development of the Internet and related software improvements, went through a revolution. By using the Internet extensively in standards development, many Standards Development Organizations are able to develop standards in a fraction of the time it took just a few years ago. We feel that finally the true promise of PL 104-113 can be harnessed by exploring new ways in which SDOs can be advised of government needs for new or revised regulation at the beginning of the regulatory process and in time to update standards to meet these government needs before final regulations are promulgated. We feel that such an arrangement could benefit the government and the private sector with a more precise match between standards and regulation. We would suggest that this opportunity is already within the scope of PL 104-113. We also would like to suggest that government explore whether the current reporting requirements related to standards and other appropriate subjects meet the needs of public and private users and consider whether current web-based reporting requirements could or should be modified accordingly.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization’s specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

The U.S. Should Increase Support for U.S. Standards Education Programs

Yes, the United States should increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace. NEMA has endorsed Strategic Initiative 10 of the United States Standards Strategy (which provides: “Establish standards education as a high priority within the United States private, public and academic sectors.”)

NEMA’s Recommendations for Increased Standards Education Support

NEMA’s specific recommendations for increased standards education support in the private, public and academic sectors is set forth in detail under the USSS, Strategic Initiative 10 as follows:

- Develop new or significantly enhance existing standards education programs that address the significance and value of standards to the well-being of the United States and global economies.
- Develop or significantly enhance standards education programs that address the needs of specific groups within the United States. These programs must reflect the multidisciplinary environment in which standards development takes place and address national and international standards development procedures; the relationship between private and public sector standards; the environment, health, safety, sustainability, international trade, public policy, competition, legal, economic benefits, and strategic considerations; and how to balance the interests of stakeholders.
- Develop a national database of standardization case histories. The database should be jointly managed by the American National Standards Institute and the U.S. Department of Commerce.
- Encourage universities and colleges within the United States to create standardization education programs in fields of study such as engineering, science, medicine, technology, government and public policy, business, economics and law.
- Facilitate and enhance the creation of a communications network for standardization education programs among all interested parties in the private, public and academic sectors. Utilize Internet technology to the fullest extent possible to facilitate the development of e-learning and standardization education programs.

NEMA's Support of ANSI's Existing Standards Education Program

NEMA, through its active participation on ANSI's Committee on Education ("COE"), has supported several recent or ongoing initiatives dedicated to the fulfillment of Strategic Initiative 10:

1. Re-launched ANSI's www.standardslearn.org which is a free and publicly-available resource providing ANSI-developed educational content to a broad audience.
2. Developed a series of case studies on the technological and economic impact of standards which are freely available via www.standardslearn.org.
3. Launched the University Outreach Program introducing globally-recognized and adopted standards into universities to incorporate information about standards and conformity assessment, as well as knowledge of the appropriate standards, into their unique curricula.
4. Sponsored (along with NIST, ICES and ASTM International) an education workshop on *Global Perspectives and Strategies for Education about Standardization*.
5. Supported a NIST workshop on *Promoting Education about Standardization in North America*.
6. Supported an International Standardization Case Study Competition, the purpose of which is to:
(a) promote education about standardization among universities; (b) provide an opportunity to make students aware of the issues surrounding standardization from corporate strategy, industry, regional, and international perspectives.
7. Created a forum for discussion among academics and practitioners that builds a "community of learners."

Education About the Confusion Between "Open Standards" and "Open Source"

In addition to these educational programs implemented through ANSI's COE, NEMA recommends broad-based educational outreach to all industry sectors related to the often misused and misunderstood definition of "Open Standards." That term is often mistakenly confused with one method of possibly implementing a standard via "Open Source" Software.

In order to maintain ANSI accreditation, NEMA and other standards developers are required to consistently adhere to a set of requirements or procedures known as the "*ANSI Essential Requirements*," which govern the consensus development process. Due process is the key to ensuring that American National Standards ("ANS") are developed in an environment that is equitable, accessible and responsive to the requirements of various stakeholders. The open and fair ANS process ensures that all interested and affected parties have an opportunity to participate in a standard's development. It also serves and protects the public interest since accredited standards developers the requirements for openness, balance, consensus and other due process safeguards detailed in the *Essential Requirements*.

That is why American National Standards are usually referred to as "Open Standards." In this sense, "open" refers to a process used by an entity or organization for developing and approving a standard.

The Institute's definition of openness has many elements, but basically refers to a collaborative, balanced and consensus-based approval process. The content of these standards may relate to products, processes, services, systems or personnel.

The term "Open Standard" has been used, incorrectly in NEMA's view by some, to describe a standard that may be copied, used and distributed for no fee and/or whose embedded technology is available on a royalty-free basis. This definition has created some confusion among standards developers and users because it is contrary to the definition of "open" and "openness" long held by NEMA and many other recognized standards bodies who understand the term to describe a collaborative, balanced and consensus-based approval process for the promulgation of domestic or international standards. These same features are central to the policies of well-recognized regional and international standards bodies, such as the ITU, ISO, IEC and ETSI, as well as to Annex 4 of the Second Triennial Review of the WTO/TBT Agreement.

By using the term "Open Standard" to define a standard whose sole quality is that it is unconditionally and freely available to those who wish to implement it is misleading for two reasons. First, it ignores the fact that holders of embedded intellectual property have the right to decide how they will license such property. The terms and conditions used in the development of "Open Standards" should balance the interests of those who will implement the standard with the interests and voluntary cooperation of those who own the IP rights that are essential to implementation of the standard. This is the balance provided under the ANSI Patent Policy which governs all American National Standards, and a similar requirement is expressed in OMB A-119 and some federal agencies' patent policies (*e.g.*, the Federal Communications Commission). Such terms and conditions should readily promote, and not unreasonably burden, accessibility to the standard for implementers. To achieve such balance, the payment of reasonable license fees and/or reasonable and nondiscriminatory license terms may be required by the IP rights holders.

Second, an Open Standard may involve the payment of a fee to obtain a copy of the standard. Such fees are usually used to offset the costs associated with managing open standards development processes.

It is noteworthy that the U.S. government has recently endorsed ANSI's definition of "Open Standards" in the USPTO's presentation on March 25, 2009 to WIPO:

The United States supports and strongly encourages the use of open standards as traditionally defined, that is, those developed through an open, collaborative process whether or not intellectual property is involved.... Open standards systems offer a balance of private and public interests that can protect IP with fairness, disclosure policies and reasonable non-discriminatory licensing. When developed by broadly accepted bodies or organizations, even voluntary standards can become widely adopted. Because of these benefits, use of open standards in the traditional sense is strongly encouraged whenever practical. (Emphasis added)

National Fire Protection Association

The National Fire Protection Association (NFPA) is herewith responding to the Center for Global Standards Analysis' *National Survey on U.S. Standards Policies*. NFPA concurs with the ANSI response to the questions posed by CGSA. Attached is a copy of the ANSI response to CGSA which you may consider to also be NFPA's response.

National Marine Manufacturers Association

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

That the private sector provides the leadership for development of international standards can and should be maintained since U.S. industries compete with their international counterparts in the global markets, all using these same international standards. However, maintenance of international standards and the need for U.S. representation at these tables is mandatory if the U.S. is to both represent and fight for U.S. interests. However, the costs of this involvement, both in time and money, is increasing to the point where the U.S. industry is not able to adequately fund U.S. involvement in the international standards process. It is in this area that the government can play a much larger role and help to financially assist U.S. industry experts in international standards work.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

In the recreational boating industry, about 100 U.S. boat builders export their product to the EU, Japan, Australia and Canada. Each year, NMMA, the trade association for the recreational boating industry in the U.S., produces a 3 day informational seminar for boat builders, highlighting the processes of obtaining CE certification of their product and reviewing ISO standards and EU directives necessary to obtain this certification. This is all produced within the industry and costs are borne by the industry. Government support of these types of educational programs would certainly assist the industry to complete on a global basis and would attract new U.S. builders to the global market.

Society of Cable Telecommunications Engineers

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

My immediate reaction is that we do not need to change US policies for the development of private sector standards. Our system admittedly has some flaws, but I think it has stood up very well against that of other countries and is consistent with our own national culture. When I hear people claim that changes are necessary, my take is that it boils down to:

1. The speaker (be she government or industry) is not happy with the way a standardization process is going (or not going), and believes that with a different structure (typically with the speaker and like-minded folks in charge) there will be a different result.
2. The speaker believes that the standards process is working too slowly, when the problem that has to be solved is urgent. My response to this is that in today's world, the process part of it is trivial, time-wise; it is the reaching of consensus by different parties with different and sometimes conflicting objectives that takes the time. The only way to fix that is to
 - a. Get rid of the participants who favor different views from your own, or
 - b. Simply dictate the solution
3. There are multiple efforts going on in various standards groups; no one group is doing everything that is needed, and some groups are doing conflicting work. This can be corrected by assigning specific work to specific standards developers, and requiring coordination of their efforts.

In all of these cases the postulated solution could be characterized as the “enlightened despot” model. The problem, of course is that it relies on the assumption that the ‘ED’ will come up with as good or better an answer as the collective community – and that the community, once notified, will salute and carry out the orders. My experience is that neither of those is likely to be true. It is worth pointing out that the standards panels established under ANSI for key project areas of national interest goes a long way toward minimizing the difficulties described in (3) above. However even these mechanisms can be imperfect in the face of real industry positions that are not shared by other industries⁴⁰. That, I think, is where we have to let the market decide because nobody is going to be good enough to pick the winners.

Where I think that there could be a better result is if government agencies were given direction that this stuff is important, and that those who participate will be funded and recognized for their successes. I have no problem with government folks taking leadership roles in a consensus

⁴⁰ An example of this from the past is standardization of certain information in the digital television stream, and related information used to make a program guide. Both cable operators and consumer manufacturers believe that the products of their industries should be “in control” of the standard; and as this was essentially a zero sum game, it has not yet been resolved.

process – they should be asserting themselves more often. Where I worry is when someone purports to speak for the people of the US and therefore must be deferred to⁴¹. I would NOT, however, want to see government funding for private sector participation because I believe that this will distort both who participates and how they will react. I know that has been done in Europe, but I don't think it would be in our best interests here.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

Given the competitive nature of global industry, I think it is essential that there should be more education on standardization in the US. I think the core of this should be at the undergraduate level in engineering, business, and even political science; although the topic treatment would clearly be different. I think that in the past, we have wasted some of our valuable resource by trying to describe exactly how particular systems works – that, in my opinion, can be left as job training. What we do need to do is make the following clear to our college students:

- Standards are a significant factor in who wins and who loses, and it's hard to win if you don't know the game;
- The key to success is finding out which standards, and which standards organizations, are most relevant to your particular business;
- Wherever you go, you will need to invest technical resources in order to have a voice – or to even know what is going on;
- At any level above a purely technical level, there is a political (both governmental and industry) component that must be understood;
- There are both domestic and international standards process, and the interactions can be varied and complex.

These key points can, I believe, be made through suitable examples that would convey the sense of how the process works if not the details of any particular group, and these examples could be tailored to the particular academic audience.

As to support – I think that this is an area where public support could be very helpful. In academia it would be nice to see more professors studying the standards process – but that won't happen until there are research grants to pay them. It would also be nice for SDOs to give access to their process (either free, or through another kind of grant) so that academia can see how the process actually works. And of course, it would be useful if they could get the documents – but I will leave that topic for another forum.

⁴¹ I recall years ago a representative of the NIST IT Lab being asked if he represented the people of the US. His response was right on target – he said that he couldn't even represent the entire US government, because there was no way of developing consensus. He felt that he was lucky to be able to represent one agency with confidence.

Finally, no we do not have a standards education program directly. However our professional development program makes use of the standards as well as other materials in developing both training and certification materials.

Society of Fire Protection Engineers

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

I think that the current model of private-sector development of standards serves the nation well. I would not recommend any changes from the Congress.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

I would suggest that there should be some standards education in place, but that it should not be a full, stand-alone course at either the undergraduate or graduate level. It is important for engineers to know the role that standards play in the profession and how standards are developed. However, this should be as an adjunct to some other course related to the application of technology. There are simply too many courses competing for space in a 120 credit undergraduate program or 30 credit masters program to require additional courses.

Standards Engineering Society

Most recently, The Center for Global Standards Analysis invited SES to respond to the National Survey on US Standards Policies. This survey is being used to elicit information from the standards and conformity assessment community on the roles of the private and public sectors in standards development, as well as on education and training programs for the next generation of standards professionals. As a leading organization dedicated to the use of standards, the knowledge of standardization, and the advancement of standards professionals, SES has submitted the following response.

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as

necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

The SES endorses the United States Standards Strategy, as well as the private-sector led and public-sector supported standardization system coordinated by the American National Standards Institute (ANSI) and does not believe the system needs changing.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

Yes, the SES supports an increase in support for U.S. standards education programs in order to maintain or improve its competitive position in the global marketplace. Since 1947 the Standards Engineering Society (SES) has been dedicated to furthering the knowledge of standards and standardization. As part of this mission, the SES takes a proactive stance in providing a number of education-based initiatives to the standards community:

- SES Annual Conference: A two-day event showcasing discussion panels with industry leaders in the field of standardization;
- Professional Development Courses: Instructor-led and internet-based coursework geared towards skills development of the standards professional;
- Professional Certification: The SES certification program recognizes those who demonstrate a high degree of professional competence in core areas of standardization with the professional designations of AStd. and CStd.

The SES believes the U.S. standards community should work with U.S. Department of Commerce and the U.S. Department of Education to produce public awareness messages on the values of standards education. Further, there should be a public/private partnership to target university business and engineering schools for the promotion of standards education. In keeping with this approach, the SES also recognizes and supports the activities of ANSI, and specifically their endorsement of Strategic Initiative 10 of the United States Standards Strategy, dedicated to the establishment of standards education as a high priority.

Standards and Regulations

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

No, the current system works very well.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

Yes, the best way would be to add standards education to high school and college classes. We currently have an internal standards program.

Telecommunications Industry Association

The Telecommunications Industry Association (“TIA”) is pleased to comment on the questions posed by the Center in its Analysis Survey. TIA is a full service trade association representing more than 500 member companies in the communications technology and related industries by providing leadership in standards development, advocacy, education, trade show opportunities, and environmental regulatory information. In particular, its standards development and environmental activities are noted for their global impact.

The Center’s survey focuses closely on standardization, posing significant questions about a field that is closely related to domestic and global progress in meeting the needs of governments and consumers everywhere. TIA is and has been a standards development organization (“SDO”) for many decades and is accredited by ANSI. In addition, TIA is one of the founding partners and also serves as secretariat for 3GPP2, a consortium of five SDOs in Japan, Korea and China with more than 65 member companies in drafting future oriented wireless communications standards. TIA is also active in the formulation of United States positions on technical and policy issues, administering four International Secretariats and 16 U.S. Technical Advisory Groups to international technical standards committees.

TIA operates through the efforts of more than 70 committees and sub-groups which enjoy the active participation of more than 1,100 volunteers from member companies and others, including representatives of U.S. government agencies. The more than 3,000 standards and technical papers produced by TIA volunteers is evidence of the fruitful results of these activities.

TIA fully endorses the Response of ANSI to the survey questions on the U.S. standardization system and related policies. In this connection, TIA notes also the section of ANSI's Response on the confusion between "Open Standards" and "Open Source," and calls to the Center's attention a paper produced by TIA's Standing Committee on Intellectual Property Rights which may be found at http://www.tiaonline.org/standards/about/documents/TIA-IPR_20080620-003_TIA_OPEN_STANDARDS-CLEAN_R4.pdf.

Toy Industry Association

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

TIA remains strong believers in and supporters of the U.S. approach in supporting private sector standards versus government standards. We believe the private sector has a level of expertise in any given product or other standards area that cannot be matched within government. In addition government is too rigid and ponderous in its rulemaking process to allow for expeditious standard development or changes when new technologies or circumstances warrant. Moreover, any pre-market government approval process would be an impossibly narrow gate through which any products or processes governed by standards would have to pass, thus choking off the flow of tens of thousands of new products and enterprises each year.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

TIA is not aware of increased attention to national standards education programs around the world. What kind of standards education are we talking about? Standards are product/process specific, so it would seem appropriate to have education relating to standards be a component of training and education for new entries into whatever enterprises are covered by the standards. TIA does education in U.S. standards to our member companies and to our producing factories overseas.

**United States Technical Advisory Group for Energy Management
(ISO/PC 242)**

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

Response to Question 1: No change to the current private sector-led and public sector-supported standardization system is warranted. Details for this conclusion are provided below:

A. The Current Private Sector-Led Approach Is Working Well

The American National Standards Institute (ANSI) serves as the coordinator of this nation's private-sector led and public-sector supported standardization system and oversees the creation, promulgation and use of tens of thousands of standards, norms, guidelines, and conformance activities that directly impact businesses and consumers in nearly every industry sector. ANSI and its members cooperate with government agencies at the federal, state and local levels to achieve optimum compatibility between government laws and regulations and the voluntary standards of industry and commerce, as well as ensuring that voluntary consensus standards provide for government needs in their procurement of goods and services.

Existing national policies encourage the agencies to be active participants in the standards development process. The National Technology Transfer Act directs the National Institute of Standards and Technology ("NIST") to "bring together federal agencies as well as state and local governments to achieve greater reliance on voluntary standards and decreased dependence on in-house standards."

The U.S. TAG to ISO/PC members believe that public policy should build upon the demonstrated successes in this area and continue to encourage government, consumers, industry, and voluntary standards developers to rely upon the public-private partnership model to explore consensus-based solutions to key national priorities.

The key to a successful partnership is active participation, which requires support and resources from government policy makers at all levels.

The impact of Globalization demonstrates clearly that the current system of stakeholders is critical to the success of standards in the U.S. and should be expanded and supported. Every year many U.S. national standards are adopted as International Standards.

B. The U.S. Government Supports the Current Private Sector-Led Approach to Standardization Which Provides Unique Advantages

The U.S. government recently endorsed the current private sector-led U.S. standards system in a presentation by the United States Patent and Trademark Office (“USPTO”) to the World Intellectual Property Organization (“WIPO”) Standing Committee on Law and Patents (“SCP”) meeting on March 25, 2009. In that presentation, the U.S. government took a firm stand that “there is NOT a crisis, as claimed by some, in standard setting” in this country. Specifically, the presentation stated:

In [the U.S. government’s] view, the standard setting process should be voluntary and market-driven. Unnecessary government intervention can impair innovation, standards development, industry competitiveness, and consumer choice....The U.S. government recognizes its responsibility to the broader public interest by providing financial support for, and promoting the principles of, our standards setting system globally. U.S. industry competitiveness depends on standardization, particularly in sectors that are technology driven. The United States doesn’t encourage government intervention. The issues have long been discussed and are rejected because they hinder innovation, standards development, U.S. industries’ competitive advantage and attendant benefits to consumers. (Emphasis added.)

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization’s specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

The U.S. Should Increase Support for U.S. Standards Education Programs

Yes, the United States should increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace. The U.S. TAG to ISO/PC 242 recognizes the need for education and the efforts by ANSI to increase standard education support. In this effort we encourage the use of the internet and other electronic tools, partnerships with universities and colleges as well as corporations already involved in the standards development process. The TAG also strongly supports increased education or modification of existing terms “open standard” and “publically available specification” that lead to the incorrect conclusion that standards are “free” documents and do not indicate the fact that the documents are the result of intellectual property and are not available free of charge.

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private-sector technology standards; *i.e.*, that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

Private sector leadership in compatibility standards has resulted in amazing growth in the communications markets which US companies participate in, very actively. The companies in countries which support public sector compatibility standardization have generally not been as successful. GSM is often presented as a communications technology where public sector standardization was successful. Consider that if the US had supported GSM as a compatibility standard, the hugely successful private company, Qualcomm, might not have flourished. The history of GSM is not an argument for greater public sector compatibility standardization activity. If the US had taken a public leadership role in early Internet standards, would the IETF have been as successful? Consider the US government support of OSI and ISDN standards - very unsuccessful. Public sector leadership is more desirable for similarity standards. Public sector guidelines for adaptability standards would be economically desirable. But given the lack of understanding of all the successions of standards, attempts at any leadership are very likely to cause only confusion. Standardization is an evolutionary process, mandates won't work.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

The existing courses on standardization (world-wide) are generally not very useful as they don't teach key issues (e.g., the difference between similarity, compatibility and adaptability standards). See "Teaching Standards to Engineers" <http://www.csrstds.com/pdf/teachengr.pdf> for more information. Until there is greater educational interest in teaching standards in a technical curriculum, funding support is not the main issue. The University of Colorado in the College of Engineering offers the first technical and policy course on standards.

⁴² Comments submitted by Adjunct Professor Ken Krechmer.

Water Quality Association

Question 1: Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?

WQA would like to suggest that standard developing agencies should not participate in product certification activities or ANSI should develop stronger policies that would prevent Certification bodies using the standards development committees to influence their financial concerns.

Question 2: Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?

WQA offers education to the water treatment industry concerning the Drinking Water Treatment Unit standards. WQA supports additional standards education program.

Appendix A – Survey Invitation

In a recent meeting with Mike Quear, Staff Director, U.S. House of Representatives Committee on Science and Technology, Subcommittee for Technology and Innovation, we discussed issues raised in the presentation *Globalization & Technology Standards: The Case for Expanded Leadership* at The Information & Technology Information Foundation in January 2009. A copy of the ITIF presentation is enclosed for your review.

Mike's interest in the ITIF presentation raised several issues that have not been brought to his attention in recent years by the U.S. Information, Communications and Technology Industry or any other industry. During the meeting, I offered to contact representatives in the United States private sector standards community to determine whether there are any standards issues that should be brought to the attention of the House Subcommittee for Technology and Innovation.

To assist in collection of information, the Center for Global Standards Analysis is conducting a survey of private sector corporations, standards development organizations, universities and education associations concerning (1) roles of the private and public sectors in development of private sector global technology standards; (2) education and training programs for the next generation of United States engineers, scientists and technology experts that are expected to participate in development of global technology standards. *To participate in the survey, please respond to the issues below by June 30, 2009.*

- **Given the impact of Globalization, is there a need to change current United States policies for development of private sector technology standards; i.e., that the private sector will provide the leadership and resources for development of such standards, as necessary, and the government will play a supporting role? If so, what specific changes should be made to roles of the private and public sectors in developing such standards?**
- **Given increased attention to national standards education programs around the world, should the United States increase its support for U.S. standards education programs in order to maintain or enhance its competitive position in the global marketplace? If so, what are your organization's specific recommendations for increased standards education support in the private, public and academic sectors? Does your organization currently have an existing standards education program?**

When completed the results of the survey will be forwarded to participants in the survey and Mike Quear. If you have any comments or questions, contact Donald E. Purcell (donpurcell@strategicstandards.com).

Very truly yours,

Donald E. Purcell, Chairman
Center for Global Standards Analysis