

**PROMOTING INNOVATION, COMPETITION
AND ECONOMIC GROWTH:
PRINCIPLES FOR EFFECTIVE DOMESTIC AND
INTERNATIONAL STANDARDS DEVELOPMENT**

HEARING
BEFORE THE
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION
COMMITTEE ON SCIENCE, SPACE, AND
TECHNOLOGY
HOUSE OF REPRESENTATIVES
ONE HUNDRED TWELFTH CONGRESS
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WEDNESDAY, FEBRUARY 29, 2012

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**PROMOTING INNOVATION, COMPETITION
AND ECONOMIC GROWTH:
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INTERNATIONAL STANDARDS DEVELOPMENT**

WEDNESDAY, FEBRUARY 29, 2012

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, DC.

The Subcommittee met, pursuant to call, at 10:10 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Benjamin Quayle [Chairman of the Subcommittee] presiding.

RALPH M. HALL, TEXAS
CHAIRMAN

EDDIE BERNICE JOHNSON, TEXAS
RANKING MEMBER

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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Subcommittee on Technology and Innovation Hearing

***Promoting Innovation, Competition, and Economic Growth: Principles
for Effective Domestic and International Standards Development***

Wednesday, February 29, 2012
10:00 a.m. to 12:00 p.m.
2318 Rayburn House Office Building

Witnesses

Ms. Mary H. Saunders, Director, Standards Coordination Office, National Institute of
Standards and Technology

Mr. S. Joe Bhatia, President and CEO, American National Standards Institute

Mr. Philip Wennblom, Director of Standards, Intel Corporation

Mr. Mark Grimaldi, Owner, Equinox Chemicals

Mr. James Seay, President, Premier Rides

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION

HEARING CHARTER

*Promoting Innovation, Competition, and Economic Growth: Principles for Effective Domestic
and International Standards Development*

Wednesday, February 29, 2012
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

I. Purpose

On Wednesday, February 29, 2011, the Committee on Science, Space, and Technology Subcommittee on Technology and Innovation will convene a hearing to: examine the principles of effective domestic and international standards development processes; analyze how the Federal government, industry and other organizations promote these principles internationally; and understand how standards may be used as technical barriers to trade.

II. Witnesses

Ms. Mary H. Saunders, Director, Standards Coordination Office, National Institute of Standards and Technology.

Mr. S. Joe Bhatia, President and CEO, American National Standards Institute.

Mr. Philip Wennblom, Director of Standards, Intel Corporation.

Mr. Mark Grimaldi, Owner, Equinox Chemicals.

Mr. James Seay, President, Premier Rides.

III. Background

Standards play a critical role in the domestic and international economies. Standards establish rules under which different products and services compete in the global marketplace, allowing for uniformity or interoperability. Standards facilitate trade by providing product specifications around which exporters can design products. Standards enable cell phones from different service carriers to communicate with each other, ensure that appliances can be powered by electrical outlets throughout the United States, and allow software programs to operate on computers manufactured by different companies.

OMB Circular A-119, “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities,” states that the term “standard” or “technical standard” as cited in the National Technology Transfer and Advancement Act of 1995 (P.L. 104-113) includes all of the following: (1) Common and repeated use of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices; (2) The definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength.¹

While standards are crucial in providing certainty to industry, consumers, and governments, the process by which standards are developed or adopted is also of critical importance to economic competitiveness and to innovation. Standards that are adopted with consensus among stakeholders provide market assurances that can enable the emergence of innovative technologies. Standards that are implemented without regard to technology or market penetration can inhibit innovation, trade, and competition.

The timing of standardization is also important, especially with respect to emerging technologies. Stakeholders must weigh the benefits of market assurance through standardization versus the need to allow room for innovation and technology development.

Standards Development in the United States

Historically, standards development in the U.S. has followed a market-driven, voluntary consensus approach. This approach resulted in a standards development ecosystem where stakeholders engage with professional associations, standards development organizations (SDO), and standards consortia that have technical expertise in their respective product and service areas. Collectively these entities are known as Standards Setting Organizations (SSOs) and membership can consist of companies, federal agencies, non-profits, and other stakeholders. Through a consensus process, SSOs develop and adopt member-accepted standards. Traditional U.S. SDOs represent well-established industries that developed formalized processes for the proposal, consideration, and acceptance of standards. Typically, U.S.-based SDOs are open to any industry stakeholder, regardless of where their company is headquartered.

The National Institute of Standards and Technology (NIST) supports the development of standards through technical staff participation in SDOs—ensuring standards are based on sound science and supported by effective measurements and testing that promote conformity to and acceptance of the standards. As a non-regulatory federal agency, NIST boasts both breadth and depth of technical expertise, a reputation as an unbiased, neutral party, and a long collaborative history with the private sector.

The American National Standards Institute (ANSI) is a non-profit umbrella group for SDOs that accredits the standards development procedures of its member organizations, helps coordinate standards activities in the U.S., provides a forum for its members to discuss standards issues, and

¹ OMB Circular No. 1-119, Revised, February 10, 1998

is the U.S. representative to two major international standards bodies: The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). ANSI's membership includes major U.S. manufacturers, universities, government agencies, testing laboratories, and other entities.

International Standards Development

In contrast to the market-driven approach to standards development that has mostly dominated in the U.S., some global trading partners historically employed a more top-down approach to standards development the basis of which are political or regulatory factors. In many cases, companies are required to have locations or domestic industry partners in the host countries to participate in the standards development process. This approach makes it more difficult for U.S.-based Small and Medium-sized Enterprises (SME) to participate in the standards development process, which results in the adoption of standards that often puts these SMEs at a competitive disadvantage, even in cases where an SME may utilize superior technology.

In the global arena, the ISO is the world's largest developer and publisher of international proprietary, industrial, and commercial standards, operating a network of 162 national standards institutes across multiple industries. The IEC prepares and publishes standards for electrical technologies, including power generation, semiconductors, fiber optics, batteries, and nanotechnology. The International Telecommunication Union (ITU), a specialized agency of the United Nations, develops standards for information and communication technologies. While these organizations develop standards based on international political consensus, they utilize a voting system that allocates one vote to each participating country.² As a result, these processes may result in standards that reward suboptimal technology supported by regional trading blocs.

While ISO, IEC, and ITU are international in their makeup, they are not the only organizations that can develop international standards. Indeed, private SDOs can participate in international standards development by following WTO guidelines.

Established in 1995, the World Trade Organization's Agreement on Technical Barriers to Trade (WTO/TBT), sought to ensure that "technical regulations and standards, including packaging, marking and labeling requirements, and procedures for assessment of conformity with technical regulations and standards do not create unnecessary obstacles to international trade."³ While the WTO/TBT Agreement does not select specific standards or SDOs as international, the WTO/TBT Committee established the following criteria for international standards development⁴:

- Transparency
- Openness
- Impartiality and Consensus

² ASME General Position Paper PS11-03, "Standards and Technical Barriers to Trade", January 2011.

³ World Trade Organization "Agreement on Technical Barriers to Trade", Uruguay Agreement, 1995

⁴ World Trade Organization Committee on Technical Barriers to Trade (2000), "Second Triennial Review of the Operation and Implementation of the Agreement on Technical Barriers to Trade."

- Effectiveness and Relevance
- Coherence
- Development Dimension

While these criteria tend to align with the voluntary, consensus driven approach that has dominated in the U.S., there are still significant differences in the interpretation and implementation of WTO/TBT guidelines among the U.S. and its trading partners.

IV. Issues for Examination

This hearing will explore the principles that support effective standards development processes, with respect to the effect of standards development on innovation, competition, and economic growth. The hearing will also analyze the ways in which the Federal government, industry, and other organizations work to promote the application of principles in the international standards development arena. Finally, the hearing will examine the ways in which trading partners may use standards as technical barriers to trade and will examine how the Federal government and other stakeholders seek to address these challenges in the global arena.

Witnesses have been asked to provide their perspective on: the principles of effective standards development; the role of both NIST and ANSI in the domestic and international standards development arenas; how companies engage in both domestic and international standards development; how companies have experienced the use of technical standards in countries to which they export; and actions the Federal government, SDOs, and other companies can take to minimize industry vulnerability to the use of standards as technical barriers to trade.

Chairman QUAYLE. The Subcommittee on Technology and Innovation will come to order.

Good morning. We have been informed that the Ranking Member, Ms. Edwards, is on her way and wanted us to be started so we can be prompt.

I want to welcome everybody to today's hearing, entitled "Promoting Innovation, Competitive and Economic Growth: Principles for Effective Domestic and International Standards Development." In front of you are packets containing the written testimony, biographies, and Truth in Testimony disclosures for today's witnesses. I am now going to recognize myself for five minutes for an opening statement.

Today, we have the Federal Government—sorry. I would like to welcome everybody to today's hearing, which is being held to examine the principles of effective standards development, the process by which the Federal Government, industry, and other stakeholders promote those principles internationally, and the ways some of our trading partners use standards as technical barriers to trade.

Standards play a critical role in both the domestic and international economies. Standards provide certainty for both producers and consumers, enabling technologies to emerge and markets to develop. While standards are pervasive throughout the economy, their role in the marketplace is not widely appreciated. Standards enable cell phones from different carriers to communicate with each other. They allow microprocessors to operate in computers made by different manufacturers, and standards ensure that electrical appliances can be used throughout the United States.

Along with providing market certainty to producers and consumers, the process by which standards are developed is also crucial to competitiveness and innovation. In the United States, standards development has historically followed a market-driven, voluntary consensus approach. This system has proven to be effective because it allows relevant stakeholders, including small and medium-sized enterprises, to contribute in the development process, ensuring the final standards have broad market relevance. As a result, our standards development process has promoted innovation and competition.

However, different industries have unique needs for standards. Whereas mature industries require standards to provide product specifications to producers, emerging technology industries may want to avoid standardizing at an early stage, as this could stifle innovation and the development of potentially superior technology. Timing, therefore, is a critical issue. It is also important that standards remain dynamic, allowing opportunities for incorporation of new technologies.

These principles have proven to be effective in promoting innovation in standards development processes. However, they have not been universally adopted. Many countries have taken a top-down approach to standards development. In some instances, trading partners have mandated standards as a means of protecting their domestic industries. In other cases, countries have implemented standards without adequate notification periods. This can be especially burdensome for small- and medium-sized enterprises, which

do not have the abundant resources available to comply with changing rules. Other countries require a local presence or partner to participate in their standards development processes. In each case, these approaches to standards development can inhibit competition and innovation and can hurt U.S. producers seeking to export their products.

Today, we will be looking at the principles of effective standards development processes, and will seek to understand the ways in which the Federal Government and stakeholders promote these principles abroad. We will also analyze some of the ways that standards and conformance assessment can be used by trading partners as technical barriers to trade. Finally, we will seek to understand the ways in which the Federal Government, industry, and other stakeholders can act to address instances where standards are used as technical barriers to trade.

We have an excellent panel of government, industry, and stakeholder witnesses who will share their insights on these topics, and I would like to extend my appreciation to each of our witnesses for taking the time and effort to appear before us today, and we look forward to your testimony.

[The prepared statement of Mr. Quayle follows:]

PREPARED STATEMENT OF BENJAMIN QUAYLE, CHAIRMAN,
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION,
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,

Good morning. I'd like to welcome everyone to today's hearing, which is being held to examine the principles of effective standards development; the process by which the Federal Government, industry and other stakeholders promote those principles internationally; and the ways some of our trading partners use standards as technical barriers to trade.

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We have an excellent panel of government, industry, and stakeholder witnesses who will share their insights on these topics with us. I'd like to extend my appreciation to each of our witnesses for taking the time and effort to appear before us today. We look forward to your testimony.

[The prepared statement of Ms. Edwards follows:]

PREPARED STATEMENT OF MS. DONNA F. EDWARDS, RANKING MINORITY MEMBER,
SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION

Thank you, Chairman Quayle. And thank you for calling this important hearing on standards development and the role of standards in global competition.

Although issues surrounding standards do not often get attention in Congress, they have an incredibly significant impact on the ability of U.S. companies to innovate and compete in the global market and have a much greater bearing on future economic growth than most would imagine. I'm pleased that we're taking the time to focus on these issues and thank the witnesses for their willingness to join us today.

As the global marketplace has grown over the last 30 years, we have learned how important it is that the playing field is level and that all of the players on that field are playing by the same rules. Standards can open up new or expanding markets to a U.S. company. However, standards can also serve as a barrier to trade, keeping U.S. companies out and sending profits elsewhere. When things go awry in the international standards realm—when someone tries to manipulate the standards system or rig it to their own ends—it really matters for U.S. companies and the U.S. economy.

As we continue to look for opportunities to spur economic growth in this country and keep the U.S. competitive in the global marketplace, it is critical that we preserve the ability of our companies—big and small alike—to export their products to markets throughout the world. To make that happen, we need to do what we can to ensure that the standards that are being put in place worldwide do not unfairly disadvantage our home-grown businesses.

We have a very successful standards development system in this country. It has been, and continues to be, the envy of the world. Our system is characterized by unparalleled transparency, openness, and engagement. As a result, we produce incredibly high quality standards.

Unfortunately, not everyone does it our way. And the task of promoting our standards internationally or harmonizing our standards with those developed elsewhere, while also weeding out those that leave something to be desired or disadvantage our companies, is certainly not an easy one.

Last Congress, this Committee recognized the importance of international standardization to our economy and sought to determine if there were ways that the Federal Government could more effectively help the private sector in its standards harmonization efforts. We explored ways for the Federal Government to get its own house in order, so that our agencies are coordinating and not unintentionally getting in each others' way. We wondered if there was value to the Federal Government stepping up and helping industry and the standards community by serving as a watchdog, looking out for situations where the international standards development process might be taking a turn for the worse. And we wanted to ensure that the Federal Government was prepared to offer assistance to our private sector standards community, if such assistance was needed and would prove helpful.

As you may know, these efforts culminated in a provision in the House version of the *America COMPETES Reauthorization Act* of 2010. Although this language did not make it into the final version, these are issues that I remain interested in. I look forward to hearing from the witnesses today about what, if anything, can be done to make the Federal Government a better partner to industry and the standards development community.

I am also interested in hearing from the witnesses about the importance of the U.S. remaining on the leading edge of standardization in new or emerging areas of

technology. I am pleased that the Federal Government is working closely with the private sector and the standards development community to ensure that the U.S. is leading the world on standards development for smart grid, nanotechnology, health information technology, cloud computing, and public safety communications. We should continue to join efforts to identify new areas of technology with significant transformative potential and come together as quickly as possible to develop the needed standards and promote those standards internationally.

Mr. Chairman, thank you again for holding this hearing on this important topic. I yield back the balance of my time.

Chairman QUAYLE. We will wait for the gentlelady, but before we do it, we are going to introduce our witnesses and then we will proceed to hear from each of them in order.

Our first witness is Ms. Mary Saunders, Director of the Standards Coordination Office at the National Institute of Standards and Technology. Ms. Saunders serves as the representative of NIST within the standards community and leads the agency's interactions with foreign governments.

Next, we will hear from Mr. Joe Bhatia, President and CEO of the American National Standards Institute. Mr. Bhatia represents American interests in international standards through his involvement with a variety of international standard organizations.

Our third witness is Mr. Philip Wennblom, Director of Standards at Intel Corporation. Mr. Wennblom leads Intel's worldwide strategic standards policy.

Our fourth witness is Mr. Mark Grimaldi, owner of Equinox Chemicals. As the owner of a business with significant export growth, Mr. Grimaldi is experienced in how international standards affect American companies in the global marketplace.

Our final witness is Mr. James Seay, President of Premier Rides. In addition to his standards experience with Premier Rides, Mr. Seay chairs the ASTM F24 Global Committee on Ride Safety Standards.

Thanks again to our witnesses for being here this morning. As our witnesses should know, spoken testimony is limited to five minutes each. After all witnesses have spoken, Members of the Committee will have five minutes each to ask questions.

I now recognize our first witness, Ms. Mary Saunders, for her five minutes.

**STATEMENT OF MS. MARY H. SAUNDERS, DIRECTOR,
STANDARDS COORDINATION OFFICE,
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY**

Ms. SAUNDERS. Chairman Quayle and Members of the Subcommittee, thank you for this opportunity to discuss how standards can promote innovation, competition, and economic growth. I will highlight recent standards policy developments in the federal space as well as outlining how NIST promotes voluntary consensus standards internationally. More detailed information is available in my written testimony submitted as part of the hearing record.

NIST has a unique role with respect to standards in the federal enterprise. This role is defined by statute, and its effectiveness is borne out by a track record of technical excellence. Our strong ties to industry and the standards community have enabled us to tackle various standards-related challenges and deliver timely solutions. Companies both large and small engage with NIST directly

through workshops and outreach activities as well as indirectly in technical committees in more than 100 standards organizations in which we participate.

Last year, NIST Director Patrick Gallagher testified before this committee about the need for more effective federal engagement in standards development, use, and promotion. This is now being facilitated by a Subcommittee on Standards chaired by Dr. Gallagher established within the National Science and Technology Council's Committee on Technology. Last October, following extensive public consultations, the Subcommittee issued a report with recommendations on how the effectiveness of Federal Government engagement in standards to address national priorities can be enhanced. These recommendations have been incorporated into a recent White House memorandum for agencies.

There are many types of standards organizations. One size certainly does not fit all, and identifying underlying principles that characterize effective standardization processes is important for agency decision making. A limited set of foundational attributes for standardization activities is called out in OMB Circular A-119 focusing on voluntary consensus standards activities. The Subcommittee on Standards also identified the following as being important to maximize the impact of the full range of standardization activities on enabling innovation and fostering competition, and these are transparency, open participation, flexibility, effectiveness and relevance, coherence international acceptance, and net benefit.

NIST has embraced these principles in our work coordinating standards development for the realization of interoperable smart grid, for cloud computing, and other areas. In each of these cases, it was determined either by legislative or policy directive that there was a need to ensure that relevant standards are available on a timely basis to support a rapid, coherent response to a national priority. NIST leadership in facilitating private-sector-led standards development efforts engaging a broad range of stakeholders is contributing to ensuring that key public policy goals are met in a timely manner with solutions that are accepted globally.

The U.S. Government and NIST in its international interactions has long advocated that companies should adopt and use international standards where available and that the opportunity to participate in standardization activities should be made available to all interested stakeholders. NIST has also demonstrated by example through our own participation in a range of international standardization activities. We have worked effectively to move technical content from NIST special publications in the cybersecurity and cloud arenas into international standards venues to facilitate global acceptance.

With a reduction in tariffs globally, the use of standards and conformity assessment procedures as technical barriers of trade has become an issue of increasing concern. NIST supports U.S. industry and government agencies in addressing technical barriers to trade by providing various reference tools to inform U.S. stakeholders of potential TBT-related issues and to assist them in addressing them. We engage in regular information exchanges related to technical standards and conformity assessment issues with important trading partners such as the European Union, Japan,

China and Brazil. These exchanges enable us to gather firsthand information about standards and related developments that can impact U.S. companies exporting to those countries. In instances where we have better approaches, we have been able to share our experiences about those approaches, why these have worked and lessons learned.

In closing, Chairman Quayle, Ranking Member Edwards and members of the Subcommittee, NIST is actively working with both private sector partners and other agencies to leverage new opportunities to help our industry maintain their leadership role in the standards arena. We look forward to working with you closely, and I will be glad to answer any questions that you may have.

[The prepared statement of Ms. Saunders follows:]

PREPARED STATEMENT OF MS. MARY H. SAUNDERS

Testimony of
Mary H. Saunders
Director, Standards Coordination Office

National Institute of Standards and Technology
U.S. Department of Commerce

Before the
House Committee on Science, Space, and Technology
Subcommittee on Technology and Innovation

on

*“PROMOTING INNOVATION, COMPETITION, &
ECONOMIC GROWTH: PRINCIPLES FOR EFFECTIVE
DOMESTIC AND INTERNATIONAL STANDARDS
DEVELOPMENT”*

February 29, 2012

Introduction

Chairman Quayle, Ranking Member Edwards, and members of the Subcommittee, on behalf of Secretary Bryson, and the Director of NIST, Patrick Gallagher, I want to thank you for this opportunity to discuss the current dynamics in the world of standards and standardization, and NIST's role in the opportunities and challenges presented. With the growing importance of standards as key drivers in innovation and international competitiveness, and the attention and resources that our key trading partners are investing in this area, this is a very timely hearing.

We often hear the statistic that over 80% of global trade is affected by standards or technical regulations. This estimate comes from a 1999 OECD Report on Regulatory Reform and International standardization. This estimate should be considered within the context of the explosive growth of global trade since the time of the report. Clearly, today, standards impact trillions of dollars in trade.

With the emergence and growth of new technologies, such as those needed for the development and deployment of an interoperable Smart Grid, nanotechnology, cloud computing and emergency communications, these are exciting times in the standards world. International standards and broadly accepted conformity assessment programs are playing a critical role in the development and commercialization of these technologies.

In my testimony, I will address the impact of standards on innovation and competitiveness, the complex interplay of the U.S. and international standards systems, the challenges that we are currently facing, and NIST's efforts to address these challenges.

Standards Matter

The pervasive nature and ubiquity of standards often de-sensitizes us to how much we depend upon standards that work. As examples, the spacing and operation of sprinkler heads that provide fire protection in this room are dictated by standards. We know that this hearing is being webcast to the standards community in the United States and abroad. Webcasting is made simple and seamless due to international standards for audio and video which are built into the computer software and hardware. These standards and specifications are just a few of the more than 250 standards and specifications implemented in a laptop computer, according to a study by Arizona State University.¹

Standards also provide great benefit by helping to ensure our health and safety. From standards which define the size, color, shape and positioning of roadway stop signs, to standards that determine safe levels of exposure to radiation when getting an x-ray upon visiting a dentist, standards underpin a large number of our daily activities and interactions.

Broad use of standards clearly helps enhance the safety of products, while reducing cost to consumers, and also providing consumers greater choice. Widespread reliance on standards also creates tremendous market opportunities for those with ideas and technologies that can be

¹ Brad Biddle, Andrew White and Sean Woods, "How Many Standards In a Laptop? (And Other Empirical Questions)" Arizona State University Sandra Day O'Connor College of Law

standardized and used around the world. In an increasingly global economy, standards are not only important for consumers, they are also critical underpinnings for business. In today's hyper-competitive world economy, ignoring the importance of standards can prove costly for both industry and government. Companies, and even entire industries, may become less efficient. Transactions may become more costly in both dollars and resources necessary for buyer-seller negotiations. Markets can fragment as divergent requirements for products and services are developed and imposed.

U.S. competitiveness in technology requires leadership by U.S. industry in standards and standardization. Leadership in standardization provides a first-mover opportunity to drive technological innovation. However, such active participation and leadership also requires significant time and resource commitments. In today's resource-constrained environments, U.S. industry is faced with very tough choices regarding investment in standards activities, the benefits of which may not be evident in the short-or medium-term. This becomes an even more significant issue for small and medium enterprises, who may not have the resources to invest in standardization when struggling to make payroll or pay for raw materials.

Standards as Engines of Innovation

Standards play an important role in enabling technological innovation by defining and establishing common foundations upon which product differentiation, innovative technology development and other value-added services can be developed. Standards are also essential for enabling seamless interoperability between products and systems. Thus, standards are often the technical foundation enabling global trade, competitiveness and innovation.

Standards promote efficiency in domestic and international markets. By adhering to agreed-upon standards, businesses can use widely accepted requirements and specifications to negotiate deals for products or services, avoiding contract ambiguities that might otherwise undermine such transactions. Standards promote understanding between buyer and seller and facilitate mutually beneficial commercial transactions.

Most products have become exceedingly complex; and, in our global marketplace, suppliers are often unknown entities. Thus, standards provide us the assurance that products will perform the way they are supposed to. At the same time, they are the common platform, upon which innovators and developers can design and build a wide range of value added products which in turn can drive greater innovation and competition. The Universal Serial Bus, or USB specification, is a great example of such a protocol driving innovation. This specification defines how data can be transferred from a peripheral device to a computer's Central Processing Unit (CPU) through a USB port, and how the same port can also be used to charge a device. The broad utility of this specification, however, has driven applications well beyond the CPU, with the result that consumers enjoy low-cost USB connectivity for many, if not all, of the electronic devices in common use today.

Considering the broad impact that standards can have, and the global nature of trade and supply chains, which in turn support the global trade, standards also have a significant role in ensuring international competitiveness.

Standards as a Tool for International Competitiveness

“Third class companies make products, second class companies develop technology, while first class companies set standards”.

This very telling quote, originally attributed to Sony Corporation, resonates with industry and policy makers around the world. It also explains the significant investments by countries such as China to increase their participation in international standards activities, and to attempt to assume leadership positions in such standardization activities. Increasingly, developing economies are viewing international standards as a powerful tool for competitiveness, and are developing strategies and tactics to play a greater role in international standardization.

An important element of this approach is increased participation in international standards developing bodies. We welcome such participation, as we believe that the best standards result when there is broad participation representing all interested stakeholders in open and transparent fora. The resulting standards then reflect consensus of this wide stakeholder group, and when used as intended in multiple markets, such standards drive significant economies of scale. The U.S. government has long advocated that countries should consider adopting and using international standards where available, and that the opportunity to participate in standardization activities in other countries should be made available to all interested stakeholders.

Principles for Effective Standardization

A limited set of foundational attributes of standardization activities is called out in OMB Circular A-119, focusing on voluntary, consensus standards activities. These attributes include openness, balance of interest and due process.

It is important to recognize as well the contributions of standardization activities that take place outside of the formal voluntary, consensus process, particularly in emerging technology areas.

The October 2011 report of the National Science and Technology Council’s Subcommittee on Standards noted that, in addition to the attributes identified in OMB Circular A-119, the following additional attributes should also be considered, to maximize the impact of those activities on enabling innovation and fostering competition, while also assuring fulfillment of agency regulatory, procurement, and policy missions:

Transparency: essential information regarding standardization activities is accessible to all interested parties.

Open Participation: all interested or affected parties have an opportunity to participate in the development of a standard, with no undue financial barriers to participation.

Flexibility: different product and services sectors rely on different methodologies for standards development that meets their needs.

Effectiveness and Relevance: standards are developed in response to regulatory, procurement and policy needs, and take account of market needs and practices as well as scientific and technological developments.

Coherence: the process avoids overlapping and conflicting standards.

International Acceptance: as product and service solutions cross borders, the public and private sectors are best served by standards that are international in scope and applicability; and

Net Benefit: standards used to meet regulatory and procurement needs should maximize net benefits of the use of such standards.

The Standards Ecosystem

The U.S. voluntary, consensus standards system is bottom-up, industry-driven, and sector-focused. The government participates as an equal and interested partner. Federal, state, local and Tribal government representatives participate when the activity is relevant to their needs, and consistent with their respective missions and functions. In contrast to the government-directed, prescriptive standards that characterize the systems in place in a number of other countries, the Federal government does not control or direct the standards system in the United States.

The modern day engagement of the U.S. government in the formal U.S. standards system can be traced back to the founding of the organization that has evolved into the American National Standards Institute (ANSI). In 1916, the Department of Commerce was one of the founding members of the American Engineering Standards Committee, formed to be an “impartial national body to coordinate standards development, approve national consensus standards, and halt user confusion on acceptability”².

Since the founding of the American Engineering Standards Committee, U.S. government agencies have been extensively involved in the development and use of standards to meet agency missions and priorities. This engagement was catalyzed in 1995 by the passage of the National Technology Transfer and Advancement Act (P.L. 104-113), which directed Federal agencies to “use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments”³, except where inconsistent with applicable law or impractical.

The strength and agility of the U.S. standards system stems from its sector-specific focus. Individual industry and technology sectors are served by standards developing organizations that are sensitive to and responsive to that sector’s needs, and understand the dynamics of that technology and industry. While there is no formal count of the number of standards developers in the United States, it is estimated that there are about 600 standards setting organizations based in

²http://www.ansi.org/about_ansi/introduction/history.aspx?menuid=1

³ P.L.104-113 National Technology Transfer and Advancement Act of 1995, Section 12 (d)(1). (available at: http://standards.gov/standards_gov/nttaa.cfm)

the United States, with approximately 19⁴ developing most of the standards in broad use in the U.S. market, in regulation and procurement. The membership and organizational structure of these organizations vary widely: some are professional societies closely associated with a technology or technical sector; others are industry associations; and others are standards setting organizations that are not associated with a specific technical sector. Most are accredited by the American National Standards Institute.

In addition to formal standards setting organizations, consortia and other non-traditional standards setting organizations contribute significantly to the diversity of the standards landscape. There has been a remarkable growth in consortia since the early 1990s, driven in large part by the growth of the information and communications technology industries during this period. Consortia are organizations with participation from parties interested in rapidly addressing a specific technical issue or in developing a specific solution. Consortia follow different organizational models, with some having a very narrow scope of activities and a selective membership. Other consortia, for example, the World Wide Web Consortium (W3C) or the Open Geospatial Consortium, closely resemble consensus-based standards developing organizations, with membership open to any interested entity and standards developed through consensus-based processes.

The Federal Government's Role and Interest

The Federal government has a significant interest in a robust U.S. standards system. Federal government agencies engage in standardization in a wide range of mission-specific roles, including contributing to development of standards in the private sector, championing U.S. interests in standards (e.g., ensuring that standards are not used as technical barriers to trade by trading partners), using standards for procurement or regulatory actions, and addressing competition-related aspects of standards-setting activities.

In FY 2010, over 4000 Federal agency staff from across the Federal enterprise participated in more than 500 private-sector standards organizations. This participation is spurred in large part by the National Technology Transfer and Advancement Act of 1995 (PL 104-113), and the associated OMB Circular A-119. The NTTAA directs agencies to consider the use of voluntary consensus standards, in lieu of government unique standards, and OMB A-119 strongly encourages agencies to participate in standards development activities to ensure that the resulting standards are better suited to meet agency needs.

This extensive participation by Federal agency staff, and the use of the resulting standards, provides direct benefits to agencies and to taxpayers. The use of consensus standards significantly reduces costs to agencies that would otherwise be incurred if agencies had to develop and maintain agency-unique standards. The use of consensus standards also reduces the cost to agencies due to economies of scale resulting from using the same standards for government as are used for the commercial sector, and spurs innovation and greater product choice. Currently, almost 10,000 consensus standards are referenced in regulations, and just

⁴M. Breitenberg, *ABC's of Standards Activities, NISTIR 7614, August, 2009*
(http://gsi.nist.gov/global/docs/pubs/NISTIR_7614.pdf) page 10

more than the same number of standards are referenced for procurement. Such extensive use of consensus standards has provided huge benefits to the United States. The European Commission recently undertook a major review of the European standardization system to see how it could be made stronger and more flexible, and a number of approaches that are central to our standards system were considered by the Commission.

It is important to appreciate, that participation in the U.S. voluntary consensus standards development system by Federal agencies does not equal a passive engagement or abdication of Federal responsibilities to the private sector. The Administration's Innovation Strategy recognizes that for certain sectors of exceptional national importance, self-organization may not produce a desirable outcome on its own in a timely manner. In such instances, where time is of essence to address national priorities, the Federal government can play the important role of an "impatient convener" to catalyze standards development critical for these sectors. Current national priorities include the development and deployment of an interoperable Smart Grid, innovations in health care technology brought about through the use of interoperable electronic health records, cybersecurity standards for securing Federal government IT systems and the interactions of these systems.

NIST's Role in the US Standards System

In the context of Federal engagement in the standards process, NIST plays a critical role. NIST is the nation's measurement laboratory, and has a unique role relating to standards in the Federal enterprise. NIST's coordination function, defined by statute, has been borne out by a track record of technical excellence and objectivity, embraced by NIST's world-class scientists and engineers, ever since the Institute was chartered by Congress in 1901. NIST's strong ties to industry and the standards development community, backed by technical excellence, have enabled NIST to take on critical standards-related challenges and deliver timely and effective solutions.

NIST views standards and standardization as an important tool to enable U.S. innovation and competitiveness. Standards enable the effective and efficient transfer of technology from the NIST laboratories to the marketplace. This is further made possible by the participation of nearly 400 NIST technical staff in over 100 standards organizations, and more than 1000 different standards activities, in support of domestic and international priorities. It is noteworthy that this number represents more than a quarter of the NIST technical staff. NIST's engagement with industry in these standards activities also provides us the ability to learn first-hand about industry's measurement, standards and research needs, and this provides valuable input into our prioritization of current NIST programs and planning for future programs.

An Impatient Convener

Our recent work convening stakeholders to catalyze standards development to meet national priorities, such as the ongoing development and eventual deployment of an interoperable Smart Grid and the development of a reference architecture for the Federal government's approach to Cloud Computing, reflects the NIST philosophy of working closely with the private sector, and looking to private sector standards to meet government needs. In each case, NIST was able to

accelerate the bringing together of a broad set of stakeholders to address a critical technology challenge. While these stakeholders might otherwise have self-assembled in due course, there is no question that NIST, in its role as convener, was able to engage and focus the very substantial energies of private sector industry, academia and government to much more rapidly address the critical area of national need. This approach can be particularly effective when addressing priorities that span different technologies, or where multiple agencies have an interest. In such instances, the stakeholders would include groups of professionals who may otherwise not be interacting through the usual channels of communication.

The Federal government in the role of convener enables clear communication of Federal government priorities, and also helps stakeholder groups to rapidly identify the state of the relevant technology, including existing standards strengths as well as gaps. These models have enabled the U.S. to clearly establish an international leadership role in standardization for Smart Grid and Cloud Computing. In the case of smart grid interoperability, NIST's role is laid out in the Energy Independence and Security Act of 2007. In the case of cloud computing, NIST's role is outlined in the Administration's Cloud Computing Initiative.

Does the Product meet the Standard? – Conformity Assessment

Another unique role that NIST plays in the U.S. standards system is that of providing conformity assessment guidance to Federal agencies. Simply put, conformity assessment is the process of demonstrating that a product, service or system meets the requirements of a standard (or standards), and thus provides users added assurance.

NIST's conformity assessment expertise is extensively relied upon by agencies to develop their conformity assessment procedures, based upon international systems, ensuring that the resulting procedures and schemes do not pose technical barriers to trade. These international systems-based conformity assessment approaches significantly reduce the cost imposed on the user community and thereby benefit both the government and consumers in terms of reduced costs, greater confidence in product quality and greater product choice. NIST is in the midst of reviewing its current conformity assessment guidance, and will be undertaking a process of extensive public consultation to update the current guidance, beginning in April.

The National Science and Technology Council's Subcommittee on Standards

In March 2010, NIST Director and now the Under Secretary for Standards and Technology Patrick Gallagher testified before this Committee about the need for more effective Federal engagement and coordination in standards development, use, and standards promotion. Dr. Gallagher noted the urgency of working more effectively with industry and private sector standards developers, and need for more effective engagement across agencies to ensure that Federal efforts to work with the private sector are effectively planned and coordinated.

Soon after Dr. Gallagher's testimony, in April 2010, a Subcommittee on Standards was established within the National Science and Technology Council's Committee on Technology. Chaired by Under Secretary Gallagher, with the support of the Office of Science and Technology Policy and the participation of the Office of Management and Budget— this subcommittee is a

forum for senior leadership of Federal government agencies, bureaus and independent commissions within the executive branch to exchange information and develop positions on policy issues relating to standards and their impact on U.S. competitiveness.

In October 2011, the Subcommittee on Standards issued a report that included policy recommendations, mentioned previously in my testimony, on how Federal government engagement in standards to address national priorities can be enhanced (http://standards.gov/upload/Federal_Engagement_in_Standards_Activities_October12_final.pdf). The report was based on information and feedback obtained through extensive interactions with the private sector and with U.S. government agencies, examining what worked well, and looking at opportunities for further improvement. The policy recommendations included in this report gathered significant industry support, including that of the U.S. Chamber of Commerce and global companies such as IBM Corporation and Microsoft.

In January 2012, three White House offices (the Office of Science and Technology Policy, the Office of Information and Regulatory Affairs of the Office of Management and Budget, and the U.S. Trade Representative) issued a policy memorandum that formalized most of the recommendations included in the Subcommittee's report. The memorandum on "Principles for Federal Engagement in Standards Activities to Address National Priorities" (http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-08_1.pdf) underscores the strengths of the U.S. standards model of private sector leadership with strong Federal government participation, and articulates principles for Federal agencies to follow when they are tasked with a coordination or convening role, in order to accelerate private sector standards development to address national priorities.

Standards as Technical Barriers to Trade

With the reduction in tariffs globally, the use of standards and conformity assessment procedures as technical barriers to trade has become an issue of increasing concern. Within the Federal government, the Office of the U.S. Trade Representative (USTR) coordinates the development of U.S. positions and responses on technical barriers to trade-related matters and publishes an annual report on technical barriers to trade. By statute, USTR is also responsible for leading discussions and negotiations with other countries on these matters. The Department of Commerce is a member of USTR's Trade Policy Staff Committee. NIST staff provides technical expertise to the TPSC through the Department of Commerce..

In addition, NIST supports U.S. industry and government agencies in their efforts to address technical barriers to trade by providing various reference tools to inform U.S. stakeholders of potential - issues related to technical barriers to trade, and to assist them in addressing these. All signatories to the WTO TBT Agreement are required to establish a national Inquiry Point and Notification Authority to gather and efficiently distribute trade-related regulatory, standards and conformity assessment information to the WTO Member community. NIST serves that role for the United States.

Notify US – An Early Warning Tool

Pursuant to the statute⁵ formalizing the U.S. implementation of its obligations under the WTO TBT Agreement to provide information to other WTO Members, NIST houses the national **Standards Information Center**. This Center serves as the U.S. source for standards and standards-related information at home and abroad. Examples of NIST assistance to U.S. exporters include providing reference information on standards and conformity assessment measures relating to energy efficiency labeling in Saudi Arabia, Aviation Safety Management Systems in Japan, and requirements for telecommunications equipment in India. The Center provides bibliographic information on U.S., foreign, regional, and international voluntary standards, mandatory government regulations, and conformity assessment procedures for nonagricultural products. The Center has developed an electronic tool, Notify U.S., where subscribers can sign up for alerts from different countries on their proposed regulations, and provide comments on the proposed regulations. Over 2,700 U.S. stakeholders actively use this tool, and in 2011 we notified over 1,700 proposed regulations to these subscribers. The users of this tool, particularly small and medium enterprises who have limited resources to track developments around the world, have mentioned that they find significant value in Notify US, which provides them a one-stop shop for information on proposed rules, regulations, or procedures that can impact their exports overseas.

Standards In Trade Workshops – Promoting the U.S. approach to standardization

NIST promotes the U.S. approach to standards and standardization with other countries where there is significant market opportunity for U.S. exporters. The Standards in Trade Workshop program, established by NIST in the late 90s, enables U.S. participants to share information about the standards framework in a particular sector or technology area, and the standards used within that framework. The target audience is key government and industry decision makers and policy makers in countries where U.S. industry would like to explore new opportunities, or where U.S. industry seeks government assistance to address specific concerns about that country or region's use of specific standards, technical regulations or conformity assessment requirements.

Over the past 15 years, the program has resulted in a wide range of successes, such as the adoption of the U.S. national architecture for Intelligent Transportation Systems in Israel and Brazil, the referencing of pipeline standards developed by a U.S. based standards developing organization in India's expansion of their natural gas pipeline network, and a delay in adoption of onerous conformity assessment requirements in the Gulf Cooperation Council region that would impact U.S. toy manufacturers and exporters.

⁵ Trade Agreements Act of 1979 (as amended) and 19 USC 13 § 2544

Technical Exchanges

NIST engages in information exchanges relating to technical standards and conformity assessment systems with important trading partners such as the European Union, Japan, India, China, and Brazil, among others. These exchanges enable us to gather firsthand information about standards and related developments, including technical regulations that can impact American companies exporting to those countries. In instances where we have better approaches, we have been able to share our experiences about our approaches, why these have worked and the lessons learned.

Continued dialog with our international partners over the years has generated a significant level of trust, which has resulted in some NIST work products being used in these countries as is, or with minor modifications, further benefiting American exporters. In other instances, we have been able to caucus with our foreign counterparts to develop common strategies for collaboration in standardization in areas of mutual interest.

In closing, Chairman Quayle, Ranking Member Edwards, and members of the Subcommittee, NIST and the U.S. government are actively engaged in standards and standardization. While there are many challenges confronting our engagement, we are actively working with our private sector partners to address these challenges using a range of tools, and to leverage the opportunities to help our industries maintain their leadership roles. We look forward to working with you closely, and I will be glad to answer any questions that you may have.

Chairman QUAYLE. Thank you, Ms. Saunders.
I now recognize Mr. Bhatia for five minutes.

**STATEMENT OF MR. S. JOE BHATIA,
PRESIDENT AND CEO,
AMERICAN NATIONAL STANDARDS INSTITUTE**

Mr. BHATIA. Thank you, Chairman Quayle, Ranking Member Edwards. Good morning, ladies and gentlemen. My name is Mr. Bhatia. Thank you for the opportunity to testify.

I want to start out by saying that standards and conformity assessment activities are inseparably linked really to all aspects and all facets of our national economy. They influence it, and 80 percent of all global merchandise traded is impacted by them. That amounts to about \$13 trillion every year. Of course, it will go up later.

The United States has the most flexible and democratic standardization system in the world. Our system thrives on active engagement of all stakeholders, giving us a competitive advantage over those countries that follow a top-down approach. It is the market itself, that through open, transparent, and consensus-based processes determines when a standard should be first developed.

The public-private partnership that we have talked about is a key part of what makes our system successful, and ANSI is committed to our role as a neutral convener and as a forum where we get all the constituencies together—industry, government agencies, consumers, academia, and all the other people that are affected by the documents. We work to leverage the power of standardization and by making targeted activities successful in first developing the standards and then deploying them in the future.

I have heard from many industry leaders over many years that they have come together in the standardization process to achieve three key goals: one, to shape the specifications that drive their products' acceptance; two, they capitalize on the efficiency and cost-saving measures that collaborative ingenuity provides; and they finally are able to influence international requirements and standards that allow our products to be accepted across borders and take advantage of the growing global economy.

As the U.S. member body to ISO and IEC, ANSI works very hard to ensure that the U.S. interests are considered from all facets of life. It is crucial that we approach ISO and IEC with a clear and strong national position both from the technical point of view and also from a policy point of view, and we then leverage our international relationships, be it from the Germans or with the French as the traditional partners, or with the new ones like Brazilians or the Indians. We leverage that to achieve support for our positions. We have several examples of success. The most critical ones that come to mind are biotechnology and the standardization efforts in the financial services area.

Now, a big problem we face in the global market is that too often standards, and compliance to standards, are used as barriers by other nations. Emerging markets such as China and India are countries that are developing thousands of standards and specifications every year. A lot of them are developed with the personal

preferences of those markets and those technologies in mind. You can imagine that these are favoring those solutions that perhaps are foreign to us, and you can imagine the difficulty that creates for the U.S. businesses looking to get into these markets; one of our key priorities is to help U.S. companies, large and small, negotiate this complex landscape and remove any barriers in the way of unobstructed trade.

One key example I want to mention is a U.S. SME, undergoing an \$8.5 million contract, was stopped at the border because of a certification requirement, a technical requirement, and we worked then with the China certification and accreditation administration, which eventually agreed to speak on behalf of the company; then we worked with the U.S. Government to raise the issue with the Chinese officials as a matter of WTO obligations of the Chinese, and after a short time, the SME was successful in gaining acceptance to that market.

Mostly, though, when it comes to global trade, transparent and consensus-based international standards are really not an obstacle. They are actually a part of the solution. If they are used effectively, if they are developed properly, they have the capacity to remove all barriers to trade and fuel business growth for large and small companies.

Now, large companies have the capacity and resources to develop global strategies to overcome barriers to trade. The SMEs often lack such in-house capabilities. ANSI has worked very closely with NIST and with others to develop things like standards portals, which provide valuable free information to small and large companies, both to be able to access markets like China, like Japan, like Korea, like India, and work on others at the same time. The standards portals are a beneficial, free resource to all comers, especially to the SMEs.

And finally, in conclusion, I want to thank you, Mr. Chairman, for calling this hearing. We hear a lot about problems that our exports have in breaking into emerging markets, and we simply cannot afford to let them miss out on these good opportunities, and I think in a partnership that spans the public sector and the private sector, standards and conformance can really be the strategic tools to help fuel the U.S. innovation, our competitiveness, and our economic growth, and we stand ready to help anyone. Thank you.

[The prepared statement of Mr. Bhatia follows:]

PREPARED STATEMENT OF MR. S. JOE BHATIA

American National Standards Institute

Written Testimony

Written Testimony of the American National Standards Institute
before the
U.S. House of Representatives Committee on Science, Space, and Technology

Hearing: *Promoting Innovation, Competition, and Economic Growth:
Principles for Effective Domestic and International Standards Development*

February 29, 2012, 10 a.m.

Statement of

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Introduction

Standards and conformity assessment activities are inseparably linked to all facets of our national economy and are vital to the continued global competitiveness of our national economy. They influence an estimated 80% of global merchandise trade – or about \$13 trillion.

The U.S. has the most flexible and democratic standardization system in the world. Our system thrives on the active engagement of all stakeholders – public- and private-sector – giving us a competitive advantage over countries that follow a top-down approach. It is the market itself, through an open, consensus-based process, that determines when a standard should be developed.

The public-private partnership is a key part of what makes our system successful, and the American National Standards Institute (ANSI) is committed to our role as a neutral forum and convener of these diverse parties. We work to leverage the power of standardization through strategic partnerships, both domestic and international, and through targeted activities that help U.S. organizations develop and utilize standards for business growth.

What is ANSI?

ANSI is a private non-profit organization whose mission is to enhance U.S. global competitiveness and the American quality of life by promoting, facilitating, and safeguarding the integrity of the voluntary standardization and conformity assessment system. ANSI's membership is comprised of businesses, professional societies and trade associations, standards developers, government agencies, and consumer and labor organizations. Through this network of members, the Institute represents the diverse interests of more than 125,000 companies and organizations and 3.5 million professionals worldwide.

For more than ninety years, ANSI has served as coordinator of this nation's private-sector led and public sector-supported voluntary consensus standards and conformity assessment system. We speak as the U.S. voice in standards and conformity assessment forums around the globe. ANSI is the official U.S. representative to the International Organization for Standardization (ISO) and, via the U.S. National Committee, the International Electrotechnical Commission (IEC), and is a U.S. representative to the International Accreditation Forum (IAF). A memorandum of agreement between ANSI and the Commerce Department's National Institute of Standards and Technology (NIST) outlines a mutual understanding of the roles of each organization.

For more information about ANSI, please reference Annex A of this document.

The Strength of the Public-Private Partnership

From its very inception, the Institute has coordinated a public-private partnership to address and help resolve the critical issues that face the nation. The ANSI Federation has worked to build effective partnerships in two important areas:

1. between the government and the private sector; and
2. in consensus-building with linked domestic and international needs and activities.

The importance of these collaborative efforts has been officially recognized most recently in the December 2000 ratification of the Memorandum of Understanding (MOU) between ANSI and the National Institute of Standards and Technology (NIST), describing a partnership designed to "enhance and strengthen the national voluntary consensus standards system of the United States and to support continued U.S. competitiveness, economic growth, health, safety and protection of the environment."

Over the past nine decades, we have seen that the most effective solutions come about through a thoughtful, open, and consensus-based process. As the voice of the U.S. standards and conformity assessment system, ANSI leads and facilitates this process, providing the neutral forum where all affected stakeholders work together to:

- identify existing and emerging regulations, requirements and supporting standards and compliance programs;
- define where gaps exist; and
- recommend where additional work is needed.

One of the core principles of ANSI – and the standards community at large – is that of inclusion; that those who have an interest in an issue should be at the table when standards are developed. That includes businesses, consumers, government, academia, industry associations, and companies of all sizes.

As described in the principles of *the United States Standards Strategy*, standards must be based on:

Openness: “Participation is open to all affected parties.”

Impartiality: “No one interest dominates the process or is favored over another.”

Consensus: “Decisions are reached through consensus among those affected.”

For more on the hallmarks of the U.S. standards and conformity assessment system, please see Annexes B and C.

Standards, Conformity Assessment, and Global Trade

We have heard time and again, first-hand from business leaders of companies of all sizes, that participation in standards development gives them the opportunity to:

1. shape the specifications that drive their products’ acceptance;
2. capitalize on the efficiency and cost-savings measures that collaborative ingenuity provides; and
3. influence the international requirements that allow certain products to cross borders and take advantage of the global market.

The development and application of standards, technical regulations, and conformity assessment (e.g., testing, inspection, certification) has a significant impact on global trade. When developed and applied in an effective manner, standards and conformance open global markets for U.S. products and services. However, intentional or unintentional misapplication of standards and/or conformance activities can create trade barriers for U.S. exporters.

In the global marketplace, transparent, consensus international standards are part of the solution, not part of the problem. It is often the lack of *conformance* to a particular standard that is the problem, whether lead in toys, counterfeit drugs, or unsafe produce.

Congress has recognized in recent legislation for toys and food that monitoring and testing has to be done at the point of creation, not when products enter into our country. This has led to an increased awareness of third-party solutions – based upon international standards – that create a level playing field for all affected parties to participate. These solutions draw from a toolbox of conformity assessment resources – not just testing and inspection, but also systems auditing, accredited certification programs, and education and training.

The programs we have developed are committed to improving product safety and making global supply chains more transparent. They are designed to be sustainable and inclusive – involving every one affected by actions in the global marketplace. They are considerate of all types of suppliers – regardless of size or location. And they will advance the concept of “one standard . . . one test . . . accepted everywhere.”

The U.S. government and the ANSI-led private sector standardization community, working together as a public-private partnership, should continue efforts to aggressively address individual trade barriers as they arise in international markets – both through advocacy and enforcement. These efforts not only help companies affected by specific barriers, but also send a message about the importance of fair and open trade and the U.S. commitment to ensuring that our trading partners fully implement any relevant trade agreements.

To advance the diverse interests of U.S. stakeholders, the U.S. government should continue to seek full implementation of the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement and annexes, as well as decisions taken by the WTO TBT Committee. Committing even more government resources to such activities can only be beneficial.

Domestic Standardization Activities and SMEs

The Subcommittee on Technology and Innovation has also expressed a desire for comment on the importance of small and medium-sized industries (SMEs) in global trade and would like to elicit further comment on how SMEs can become more competitive in the global marketplace.

SMEs are major drivers of economic growth, in both domestic and international venues. In the U.S. they provide a majority of private sector jobs and training opportunities for workers, account for half or more of gross domestic product, and play a key role in innovation and R&D. Input from SMEs into the development of voluntary consensus standards is essential to ensuring that these standards include the latest technology and best practices.

ANSI takes pride in our efforts to ensure that all interested parties – including SMEs – are welcomed and involved in standardization efforts. This formal commitment to reach out and include SME participation in the standardization process goes back to at least 1929, when ANSI's predecessor organization, the American Standards Association, signed an agreement with NIST's predecessor agency, the National Bureau of Standards, to provide assistance to small businesses and industries that lacked the means to engage in standardization themselves.

For a current example of this commitment in actions, in May 2011 ANSI's Homeland Security Standards Panel (ANSI-HSSP) hosted a workshop that focused on the unique needs of small businesses in preparing for the challenges of unforeseen catastrophes. The goal of the workshop was to identify actions needed to better reflect small business needs in standards and conformity assessment for preparedness. For small businesses in particular, resuming operations after a disaster depends on how prepared a business is to meet unexpected circumstances. And effective preparedness standards and conformance programs are a key tool.

Standards developers (SDOs) in the ANSI Federation are also very active in outreach to SMEs to foster their involvement in standards developing activities. For example, SAE International, an ANSI-accredited standards developer, publishes nearly 7,000 aerospace standards (in addition to others for ground vehicles). Over 950 of the committee members that develop these standards come from SMEs, and 70 of the committee officers on those committees come from SMEs. All-in-all, roughly 10% of all participants and leaders of SAE standards-creation efforts are SMEs.

In addition, more than half of the members participating in the ASTM International (also an ANSI accredited SDO) standards development committees are employed in enterprises with 250 or fewer employees. The challenges to SME participation include travel expenses to committee meetings, time and resources required to develop standards, and membership fees.

ASTM International and many other SDOs, provide their members with web-based resources that enable participation in the standards development process without the obstacles of travel, time or budgetary restrictions. While technical committees meet in person to develop standards, committees can also use a suite of online standards development tools, including online forums, virtual meetings, electronic balloting, and more. These tools not only enhance the capability of most SMEs to participate in standards development, but allow the more timely development of needed standards.

ANSI is committed to supporting our 260 accredited SDOs' efforts in their inclusiveness, and believes that we and the U.S. government should do even more to foster this engagement.

International Standardization Activities and U.S. Competitiveness

As the U.S. member body to ISO, and the IEC via the U.S. National Committee, ANSI works to ensure that all U.S. interests are considered in the formulation of U.S. positions in these international standards bodies. ANSI provides a strategic link between U.S. industry, those organizations developing standards that support U.S. innovation and competitiveness, and the global arena.

It is crucial that we approach ISO and IEC with a clear and strong national position, and that we effectively leverage relationships with our partners internationally to gain support for U.S. positions. ANSI is committed to working to improve access to information on U.S. activities in ISO and IEC, and will coordinate efforts with agencies to ensure that all interested government stakeholders are aware of opportunities for engagement. Decisions made about our national standardization system and our priorities for action reach far beyond our borders, especially when it comes to the continued success of our products, services, and workforce on the global stage.

In the U.S., input into the ISO and IEC processes are coordinated by U.S. Technical Advisory Groups (TAGs). The U.S. government should also give greater support to the

U.S. TAGs. The government can accomplish this by encouraging qualified government technical personnel to participate in SDO and TAG efforts whenever possible, as a matter of policy. By becoming more involved and doing so in a more coordinated fashion, the government can alert the impacted communities when a cross-sector, standards-based solution is needed, and SDOs in turn can alert the government when key standards are being developed or revised.

The key to our nation's continued success on the global stage is to make sure that:

1. all U.S. stakeholder needs and voices are taken into account;
2. that we approach ISO and IEC with clear and strong national positions both from the technical and policy perspectives; and
3. that we effectively leverage relationships with our partners internationally to gain support for these positions.

To that end, ANSI works with U.S. TAG Administrators to attract greater and diverse government and industry participation in ISO and IEC activities. To facilitate this greater level of engagement, ANSI will continue to work to improve access to publicly available information on TAG activities, and will coordinate efforts with federal agencies to ensure that all interested government stakeholders are aware of opportunities for participation and encourage them to do so.

SMEs in International Standardization

Both ISO and IEC have well-developed programs of ensuring inclusion in their standardization programs. In fact, of the U.S. companies that participate in TAGs for the U.S. National Committee of the IEC, well over half are small or medium-sized businesses.

The ISO document "Engaging Stakeholders and Building Consensus" discusses ISO's efforts to reach out for broad-based stakeholder engagement for participation in ISO activities, including:

- reaching out to previously uninvolved groups whether by direct "inquires, internet searches, networks, personal approaches, advertisements, etc.";
- requiring that there are "no undue financial barriers to participation"; and
- where useful, "provide specialized training programs and orientation sessions to prepare delegates and experts."

Organizations that administer U.S. TAGs utilize a variety of methods to engage SMEs in the standards development work, including web-based resources that not only minimize budget, time, and travel issues, but allow the more timely development of needed standards.

ANSI has over 200 accredited U.S. TAGs that participate in 565 ISO Committees that develop international standards for a broad spectrum of industry sectors. While the level of SME participation varies depending on the industry sector, in many cases over 50% of the companies that participate in ISO activities through ANSI and its member organizations are SMEs.

For example, there are a number of SMEs participating in the ANSI-Accredited U.S. TAG to ISO TC 229, *Nanotechnologies*. Out of the 20 organizations that identify themselves under the "Corporate" interest category, approximately 25% are SMEs; SMEs also account for 10% of the overall TAG Membership. These SMEs range from smaller, nanotechnology-focused start-ups, to established companies in business for over 60 years. As they sit side by side with corporate giants from the chemical and electronics industry sectors, they are able to network with their larger counterparts and identify similar strategic goals, developing into potential business partnerships and further innovation.

Overcoming Technical Barriers to Trade and Expanding Markets

A big problem we face in the global market is that all too often, standards are used as barriers by other nations. Emerging markets such as China and India are creating hundreds – even thousands – of new standards and product requirements each year, and most are created by government with limited industry input. You can imagine what kind of difficulty this creates for U.S. businesses looking to get into those markets. One of ANSI's key priorities is to help U.S. companies – large and small – negotiate this complex landscape and gain the market-growth advantages of standards and conformance, and overcome any barriers placed in the way of unobstructed trade relations.

To give one recent example, in the midst of fulfilling an \$8.5 million contract, a U.S. SME ran into problems with Chinese customs, who improperly impounded a key component, claiming it failed to meet Chinese certification requirements. After a series of unproductive meetings with Chinese freight forwarders and customs officers, ANSI worked with the China Certification and Accreditation Administration (CNCA), which agreed to intervene on behalf of the U.S. company. At the same time, the U.S. government raised the issue with Chinese officials, emphasizing China's WTO obligations. In a short time after the initial contact, the SME obtained the necessary certification and was able to enter the market. China's acknowledgement in this case of its obligation under the WTO should also benefit other U.S. exporters to China who may face similar certification-related obstacles to trade.

In India, even Indian companies have a hard time accessing the standards and regulatory systems – in fact ANSI was instrumental in bringing together Indian government and the Indian private sector standards organizations in a first ever trilateral MOU with ANSI.

Such efforts at transparency and inclusiveness are critical to the competitiveness of U.S. industry – and SME's in particular – in the global market. Standards and technical barriers

to trade (along with IPR issues), are consistently listed by U.S. companies of all sizes as the chief impediments to furthering U.S. trade exports. But when used effectively, consensus-based international standards are not an obstacle – they are part of the solution. Together with effective conformity assessment solutions, they have the capacity to remove barriers to trade and fuel business growth for large and small companies.

While large corporations may have the resources to develop global strategies and to overcome barriers to trade, SMEs often lack such in-house abilities. ANSI has worked closely with NIST in developing an online StandardsPortal (www.standardsportal.org) that provides the key information needed to help U.S. SMEs – and all companies – compete effectively in emerging markets such as China, India, and Korea.

The StandardsPortal is an incredible free resource for U.S. exporters, as well as for those nations looking for guidance in best practices in standards development. It helps companies answer such questions as:

- What technical requirements must my product meet to enter and compete in this particular market?
- How can I get early warning about changes to these requirements?
- How can I ensure that my company's perspectives are heard and considered in the development of national requirements and policies that could affect my business?

ANSI also offers our members the guidance of an ongoing Manufacturers' Roundtable for companies doing business in and with China. And we work extensively with Indian officials as part of our U.S.-India Standards and Conformance Cooperation Program, among other initiatives, to facilitate trade and increase transparency between the U.S. and India.

Conclusion

We hear a lot about problems that our exporters have in breaking into emerging markets – and we can't afford to let them miss out on these opportunities. One of ANSI's key jobs is to provide the information, access, and guidance U.S. industry needs to succeed in the global market. We need to make more efficient use of the standards and conformance resources that are already in place . . . and we need to identify every gap that exists.

We also need to bring to bear new human and financial resources to strengthen our ability to capitalize on the opportunities the global market offers. Government and industry need to work together to maximize our impact and bolster U.S. competitiveness.

With the transparency and inclusiveness of the U.S. standardization system, in a partnership that spans the public and private sectors, standards and conformance can be a strategic tool to help fuel U.S. innovation, competitiveness, and economic growth. And ANSI is always ready to coordinate the public-private partnership and take the next steps needed to further strengthen our national economy.

Annex A**Background on the U.S. Standardization and Conformity Assessment System and the Role of the American National Standards Institute (ANSI)**

The U.S. private sector-led, voluntary standardization and conformity assessment system has been in existence for more than 100 years. Highly decentralized, the system is naturally partitioned into industrial sectors that are supported by numerous independent, private sector standards developing organizations (SDOs). Marketplace demand drives the system's activities, with standards and conformity assessment programs typically developed in response to specific concerns and needs expressed by industry, government, and consumers.

Since 1918, this system has been administered and coordinated by ANSI with the cooperation of the private sector and the federal, state and local governments. ANSI does not develop standards or conformity assessment programs. Rather, it functions as a central clearinghouse and coordinating body for its member organizations. The Institute is a unique partnership of industry, professional, technical, trade, labor, academic, and consumer organizations, as well as government agencies. These members of the ANSI federation actually develop standards and conformity assessment programs, contributing their time and expertise in order to make the system work.

ANSI ensures the integrity of the U.S. standards and conformity assessment system by:

1. establishing a set of due process-based "essential requirements" that SDOs may follow in order to manage the development of consensus standards and conformity assessment programs in a fair and open manner;
2. accrediting SDOs and Certification Bodies (CBs) who adhere to these requirements;
3. approving candidate standards from ANSI-accredited SDOs as American National Standards (ANS); and
4. conducting regular audits of the ANS activities of ANSI-accredited SDOs to ensure ongoing compliance with ANSI's essential requirements.

ANSI has accredited hundreds of SDOs across a range of industry sectors. These industries include (but certainly are not limited to) telecommunications, medical devices, heavy equipment, fire protection, information technology, petroleum, banking, and household appliances. There are now more than 10,000 ANSI-approved ANS that address topics as diverse as dimensions, ratings, terminology and symbols, test methods, interoperability criteria, product specifications, and performance and safety requirements. These standards development efforts serve the public interest and are being applied to new critical areas such as the environment, healthcare, homeland security, and nanotechnology.

The Institute's approval of a candidate standard or conformity assessment program as an ANS verifies that the principles of openness and due process have been followed and that

a consensus of all interested parties has been reached. Due process requires that all proposed ANS be circulated to the public at large for comment, that an attempt be made to resolve all comments, and that there is a right of appeal. In addition, ANSI considers any evidence that a proposed ANS is contrary to the public interest, contains unfair provisions or is unsuitable for national use. This basic formula has been the hallmark of the ANS process for decades, and it has garnered worldwide respect and acceptance.

One of the best indicators of confidence in the U.S. voluntary consensus standardization and conformity assessment system (as exemplified by the ANS process) is Congress's 1996 passage of the *National Technology Transfer and Advancement Act* (NTTAA). This law (P.L. 104-113) requires federal agencies to use voluntary consensus standards and conformity assessment programs for regulatory purposes wherever feasible and to procure equipment and services in accordance with such standards. It also requires agencies to increase their participation in the development process and directs the Commerce Department's National Institute of Standards and Technology (NIST) to coordinate federal, state and local voluntary standards and related conformity assessment activities.

ANSI also promotes the international use of U.S. standards and conformity assessment programs. The Institute serves as the U.S. national body representative in two major, non-treaty international standards organizations: the International Organization for Standardization (ISO) and, through the United States National Committee (USNC), the International Electrotechnical Commission (IEC). ANSI and the USNC play a leadership role in ISO and IEC, respectively, on both policy and technical matters.

Part of ANSI's role as the U.S. member of ISO includes accrediting U.S. Technical Advisory Groups (U.S. TAGs) which develop and transmit, via ANSI, U.S. consensus positions on the activities and ballots of technical committees and subcommittees. Similarly, the USNC approves TAGs for IEC activities. In many instances, voluntary standards and conformity assessment programs developed by U.S. SDOs are taken forward, through ANSI or the USNC, where they are approved in whole or in part by the ISO and/or IEC as International Standards. ANSI also encourages the adoption of international standards as national standards where they meet the needs of the user community.

In addition, ANSI advocates U.S. positions in various regional standards organizations and regularly meets with representatives from standards bodies in other nations. Thus, ANSI plays an important role in facilitating the development of global standards and related conformity assessment programs that support global commerce and which prevent regions from using local standards that favor local industries as trade barriers.

Conformity assessment is the term used to describe steps taken by both manufacturers and independent third-parties to determine fulfillment of standards requirements. ANSI's role in the conformity assessment arena includes accreditation programs for product certification bodies, personnel certification bodies, greenhouse gas validation and verification bodies, and standards developers. The ANSI-ASQ National Accreditation

Board accredits management systems certification bodies under the ANAB brand and accredits testing and calibration laboratories, reference material producers, and inspection bodies under the ACLASS brand.

ANSI also is involved in several international and regional organizations to promote multilateral recognition of conformity assessments across borders to preclude redundant and costly barriers to trade.

In summary, through its various roles and responsibilities, ANSI advances its mission to “enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and safeguarding their integrity.”

Annex B**Excerpt from the *United States Standards Strategy*****PRINCIPLES**

It is well established in the community of nations that standards should meet societal and market needs and should not be developed to act as barriers to trade. In approving the World Trade Organization Technical Barriers to Trade Agreement, WTO members recognized that goal and established globally accepted principles as a framework to promote cooperation and discourage the use of standards as trade barriers. The U.S. standards and conformity assessment system is based on the following set of globally accepted principles for standards development.

- **Transparency**
Essential information regarding standardization and conformity assessment activities is accessible to all interested parties.
- **Openness**
Participation is open to all affected interests.
- **Impartiality**
No one interest dominates the process or is favored over another.
- **Effectiveness and relevance**
Standards and related conformity assessment programs are relevant and effectively respond to regulatory and market needs, as well as scientific and technological developments.
- **Consensus**
Decisions are reached through consensus among those affected.
- **Performance-based**
Standards are performance-based, specifying essential characteristics rather than detailed designs where possible.
- **Coherence**
The process encourages coherence to avoid overlapping and conflicting standards and conformity assessment programs.
- **Due Process**
Standards development accords with due process so that all views are considered and appeals are possible.
- **Technical Assistance**
Assistance is offered to developing countries in the formulation and application of standards and related conformity assessment programs.

In addition, U.S. interests strongly agree that the process should be:

- **Flexible**, allowing the use of different methodologies to meet the needs of different technology and product sectors;
- **Timely**, so that purely administrative matters do not slow down the work, but meet market expectations; and
- **Balanced** among competing interests.

Annex C**Excerpt from the *National Conformity Assessment Principles of the United States***

The *National Conformity Assessment Principles for the United States* document articulates the principles for U.S. conformity assessment activities that will allow consumers, buyers, sellers, regulators and other interested parties to have confidence in the processes of providing conformity assessment, while avoiding the creation of unnecessary barriers to trade.

Conformity assessment includes sampling and testing, inspection, supplier's declaration of conformity, certification, and management system assessment and registration. It also includes accreditation of the competence of those activities by a third party and recognition (usually by a government agency) of an accreditation program's capability.

While each of these activities is a distinct operation, they are closely interrelated. The choice of the most appropriate assessment processes, as well as the quality with which any one of them is performed, can have a significant effect on the confidence in and reliance that can be placed on the results of the entire conformity assessment.

The definitions included in the *National Conformity Assessment Principles* document are based on ISO/IEC 17000:2004, *Conformity assessment — Vocabulary and general principles*. Some variances, noted in italics, occur where the term is not in ISO/IEC 17000 or has another specific meaning in the United States. Definitions are included in this document to preclude confusion and to make it more understandable. In different contexts, the same term can signify different types of activities.

- **Accreditation**
Third party attestation related to a conformity assessment body conveying a formal demonstration of its competence to carry out specific conformity assessment tasks. (*These tasks include sampling and testing, inspection, certification and registration.*)
- **Certification**
Third party attestation related to products, processes, or persons *that conveys assurance that specified requirements have been demonstrated.*
- **Conformity Assessment**
Demonstration that specified requirements relating to a product, process, system, person or body are fulfilled. (*This may include any activity concerned with determining directly or indirectly that relevant requirements are fulfilled.*)
- **First, Second, and Third Party**
The first party is generally the person or organization that provides the object, such as the supplier. The second party is usually a person or

organization that has a user interest in the product, such as the customer. The third party is a person or body that is recognized as being independent of the person or organization that provides the object, as well as the user or customer of the object.

- **Inspection**
Examination of a product design, product, process, or installation and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements.
- **Recognition**
Procedure used to provide formal notice that an accreditation body is competent to carry out specific tasks. These tasks include accreditation of testing laboratories and inspection, certification, and registration bodies. A governmental recognition system is a set of one or more procedures used by a Federal agency to provide recognition.
- **Registration**
Third party attestation related to systems that convey assurance that specified requirements have been demonstrated. Such systems include those established for the management of product, process, or service quality and environmental performance.
- **Sampling**
Provision of a sample of the object of conformity assessment according to a procedure.
- **Supplier's Declaration**
Procedure by which a first party or supplier conveys assurance that the object of conformity fulfills specified requirements.
- **Test**
Technical operation that consists of the determination of one or more characteristics of a given product, material, equipment, organism, person's qualification, physical phenomenon, process, or service according to a specified technical procedure (test method).
- **Testing**
Determination of one or more characteristics of an object of conformity according to a *specified technical procedure (test method)*. Action of carrying out one or more tests.
- **Test Method**
Specified technical procedure for performing a test.

Chairman QUAYLE. Thank you, Mr. Bhatia.
We now recognize Mr. Wennblom for five minutes.

**STATEMENT OF MR. PHILIP WENNBLOM,
DIRECTOR OF STANDARDS, INTEL CORPORATION**

Mr. WENNBLOM. Thank you, Mr. Chairman, Ranking Member Edwards and Members of the Subcommittee. I appreciate the opportunity to speak today on the important topic of standards. My name is Philip Wennblom. I am Director of Standards at Intel Corporation. Intel is a semiconductor company headquartered in the United States doing business in 120 countries around the world. We had about \$50 billion in revenue last year and about 100,000 employees. As Director of Standards, I look at the standards across all lines of business worldwide with a special focus on standards policy issues.

Standards are very important to Intel's business and they are vital to the ICT industry. Intel makes complex semiconductor products and intricate pieces of software, and standards help our customers build useful systems out of those, and once those systems are created, standards help them be more useful to consumers who buy and use those systems.

Standards are needed when a consistent approach is required across multiple vendors. That might be, for example, in data networking, where the IEEE 802.3 standard called Ethernet enables multiple computers to plug into any network and just work, or they are also useful when setting performance, efficiency or quality criteria across multiple products, allowing them to be compared or evaluated. Enabling global supply chains is another example where a modern laptop computer has over 250 standards just for interoperability, and a lot of those allow companies to specialize in making different types of products and then have them all come together and just work.

I would like to share some views on how standards are best developed, speaking from the perspective of the ICT sector, information and communication technology. First, we have a very diverse system of standards making in the United States. There is a variety of types of organizations. Some have been around for over 100 years with well-established programs, and others have just been created in the last few years. There is a variety of working methods, and companies have a choice often about where to take their work in standards making. That diversity is a key strength of the U.S. system.

Second, most ICT standards are global. That means they are developed with the worldwide marketplace in mind and they tend to be adopted globally, and that is important to suppliers, recalling the point about global supply chains, and also very beneficial to consumers because products work no matter where you go around the world.

Third, standards should be voluntary, not mandated or regulated. Voluntary is really a friend of innovation. Technology changes very quickly. Moore's law says that the number of transistors on a piece of silicone will double every 24 months, and that means that is the force that means that the smartphone in your

pocket probably has more computing power than the fastest desktop computer of 15 years ago. Regulations and mandates can't keep pace with that rate of change.

And finally, the process that we use to develop standards is transparent, consensus based and industry led. One example to illustrate this is the universal serial bus. It is an example of diversity because it was a unique organization to develop that specific standard. It was defined for the global market and developed by companies and experts from all over the world, and it has now been very widely adopted. There have been billions shipped. It is innovative, well beyond what was imagined when it was created. Almost all of us interact with USB in our laptops or smartphones or cameras, or printers. It is implemented on a huge variety of projects, and it has created opportunities for both large and small companies. Even recently there are some new startup companies building USB products and competing very effectively because that standard tends to level the playing field.

Finally, a few comments on trade barriers. The WTO Technical Barriers to Trade Agreement is very useful, has very useful provisions, but there are some ambiguities. For example, not every country views international standard in the same way, which can make it harder for U.S. industry. Monitoring and enforcement are key. We appreciate the NIST programs that keep us informed about regulations, and when our industry identifies concerns, we bring those to the attention of USTR, who is a great partner.

It is also important for the United States to set a good example using the practices we would like other countries to adopt, meaning minimizing technical regulation and basing requirements on international standards.

Thank you again for the opportunity and I would be happy to take any questions.

[The prepared statement of Mr. Wennblom follows:]

PREPARED STATEMENT OF MR. PHILIP WENNBLOM

Testimony of Philip Wennblom

Director of Standards, Intel Corporation

Before the

House Committee on Science, Space and Technology

Subcommittee on Technology and Innovation

February 29, 2012

Mr. Chairman, Ranking Member Edwards, and members of the Subcommittee, my name is Philip Wennblom and I am Director of Standards for Intel Corporation. In this capacity, I set Intel's standardization policy positions, coordinate Intel's representation in strategic standards development organizations around the world and work with Intel technical experts who participate in standards setting activities. I am a member of the Board of Governors of the IEEE Standards Association, a member of the Executive Board of INCITS and chair of the Information Technology Industry Council Standardization Policy Committee. I am honored to appear before this Subcommittee today on behalf of Intel Corporation.

Intel is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for the world's computing devices. In 2011, Intel had \$54 billion in revenue from sales to customers in over 120 countries. Intel has approximately 100,000 employees.

In the information and communication technology (ICT) sector, standards are an important way to solve problems that require a consistent, global approach. Standards can enable interoperability across products and services from different vendors. For example, in the case of data networking, the IEEE 802.3 (Ethernet) standard ensures that computers and other devices can be connected for data communication regardless of which vendor manufactured the equipment. Standards that define performance, efficiency, and quality metrics allow evaluation and comparison of products from different vendors. Standards enable global supply chains and enhance consumer welfare by increasing competition, as in the manufacturing of laptop computers where standardized interfaces allow different manufacturers to build specialized components and subassemblies that are then integrated into systems.

Standards are pervasive in our industry. Virtually every ICT product implements a large number of standards. A research paper “How Many Standards In A Laptop”¹ analyzed standards that are embodied in a modern laptop computer for enabling interoperability and found that the number exceeds 250 and is probably closer to 500. Not every ICT product is as complex as a laptop, but nearly all of them rely on standards.

While standards are critically important to ICT products, most products incorporate both proprietary innovation and a selection of standards to deliver interoperability, quality and other benefits. Some of the most popular products in our industry have proprietary innovation at the core of their value proposition, even though these products also implement standards.

I would now like to turn to how standards are developed. In the United States we enjoy a well established, diverse, and vibrant community of standards setting organizations. Especially in the ICT sector, diversity is fundamentally important to the strength of the overall system. Indeed this diversity is also noted in the United States Standards Strategy developed by ANSI². Some standards setting organizations have been in existence for over a hundred years and have a broad portfolio of standards that span multiple industries. Other organizations are new and highly specialized, sometimes focused on a single specification. When considering a new standardization challenge, industry often has the option to initiate projects in an existing organization or to create a new organization if needed. This diversity and choice has resulted in a very effective and dynamic standards setting system that serves US industry and technology users very well.

Looking across many of these organizations, there are some attributes worth mentioning. First, the most successful ICT standards respond to the demands of global markets. National, local or regional standards are of little interest to most ICT product developers. As noted above, the ICT industry is characterized by global supply chains that have delivered impressive efficiencies, leading to low consumer prices for very advanced technologies. To work efficiently, those supply chains rely on global standards. Consumers also benefit from global standards, as products manufactured or purchased in one country can connect to networks and services in other countries or regions – WiFi hotspots based on IEEE 802.11 are a good example. As computing resources increasingly move into the cloud, the concept of a global approach is even more important.

Second, the most successful ICT standards are widely used on a voluntary basis, not through mandates or regulation. The ICT industry is characterized by rapid technological change, ever shorter product cycles, and continuous waves of innovation. To support these characteristics, standards should be voluntary, allowing for evolutionary and revolutionary changes to be adopted by industry and markets. Technical regulations, even when well intentioned and carefully crafted, risk locking in suboptimal technologies. This is why regional bodies such as APEC and the OECD have recommended to governments that they consider the use of standards first before resorting to technical regulations in solving a particular technology related problem.

¹ “How Many Standards In A Laptop?” <http://ssrn.com/abstract=1619440>

² United States Standards Strategy http://www.ansi.org/standards_activities/nss/usss.aspx

Third, the process used to develop effective ICT standards is consensus-based, transparent and industry-led. In most organizations, participation is open to any relevant interested party, and government experts may be important participants. The United States has recognized the importance of industry-led standards development in the National Technology Transfer and Advancement Act and in OMB Circular A-119, and indeed this important aspect of standards setting was recently reinforced in the White House memorandum "Principles for Federal Engagement in Standards Activities to Address National Priorities".³ Many federal agencies participate in standards development; NIST in particular provides substantial expertise to standards development through the involvement of hundreds of experts who participate together with industry experts.

Intel works in a variety of standards setting organizations – over 200 in all. Most of these organizations have a global focus; a small number are national or regional in nature. The list includes formal standards development organizations such as ISO, IEC, the ITU and the IEEE, and also focused consortia such as the Universal Serial Bus (USB) Implementers Forum and the World Wide Web Consortium (W3C). Intel participates in standards activities for a variety of reasons, but the number one reason is to make better products. Intel products implement support for a large number of standards because doing so makes those products more attractive. When Intel supports a standard, we help make the standard a better one by contributing time and expertise alongside experts from other companies and organizations.

The USB Implementers Forum is a good example. USB connects computers, storage devices, phones, cameras, printers and many other devices to each other allowing fast and easy exchange of data. Intel helped to create the forum in 1995 and contributed technology to the original USB specification. Intel has continued involvement since that time, helping to shape USB 2.0, USB 3.0 and other USB specifications working with many other companies. Intel has implemented support for USB in our products, which helped make USB ubiquitous in desktop and laptop computers and other devices. As USB became more popular, it created opportunities for many companies both large and small. Over 650 companies are members of the forum, and the forum lists nearly 10,000 different products that utilize USB.

Intel benefits from the USB standard since Intel products are more attractive and more useful for having supporting USB, but many other companies benefit as well. USB has also led to the creation of new categories of products that connect to computers and other devices, providing business opportunities for hundreds of companies. And consumers have benefited from access to low cost, easy to use technology for connecting and customizing their computing experience.

Intel promotes a number of best practices in our involvement with standards setting organizations and governments worldwide:

- There are great benefits from diversity in standards setting organizations. This approach is accepted in the US and works well for industry, consumers, and government. But diversity is still not well accepted globally. Many countries take a more narrow and rigid view of standards

³ Principles for Federal Engagement in Standards Activities to Address National Priorities, January 17, 2012. <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-08.pdf>

setting and recognize only a few organizations as developers of international standards. It is important that US industry and government work together to improve worldwide acceptance of a diverse system of standards development.

- Voluntary standards should be emphasized over technical regulations. There are areas where technical regulations are needed, for example to protect health, safety and the environment. But there are many more areas where a voluntary approach works best. Voluntary standards are a friend of innovation as they allow for improvements to be made more quickly through market-based mechanisms that are more responsive to consumer needs.
- Global standards are essential to the ICT industry. Technology innovators should seek to contribute their ideas to global standards, participating in their development, and ICT standards users should maintain a preference for global standards. When adopting global standards, governments and standards setting organizations should avoid modifying them at the national level unless absolutely necessary and clearly justified. National standards that vary from country to country can easily fragment the global digital infrastructure and raise costs significantly for manufacturers of technology products.
- Trade agreements and their effective enforcement are key to preventing standards from being used as barriers to trade. As tariffs have been reduced through wider participation in trade agreements, the temptation to erect non-tariff barriers to trade has increased. The WTO Agreement on Technical Barriers contains some important provisions that, if followed, help reduce the risk of standards being used as trade barriers. Effective monitoring and enforcement is required to get the full benefits of this agreement.
- It is important for the US Government to set a good example, demonstrating the approaches we would like to see other countries adopt. An important practice is to avoid technical regulations where voluntary standards will suffice. When technical regulations are needed, they should be defined narrowly with sunset provisions where possible. When voluntary ICT standards are selected, global standards should be preferred.

In conclusion, technology standards are of essential importance to Intel's business, to the ICT industry and to global markets. Standards play an important role in facilitating innovation in the ICT industry, creating opportunities for companies large and small. The diverse set of organizations that develop ICT standards is an important asset for our industry, where global standards create value for business and consumers. And cooperation between industry and government is essential to ensure that trade agreements are followed and promote best practices.

Chairman QUAYLE. Thank you, Mr. Wennblom.
I now recognize Mr. Grimaldi for five minutes.

**STATEMENT OF MR. MARK GRIMALDI,
OWNER, EQUINOX CHEMICALS**

Mr. GRIMALDI. My name is Mark Grimaldi and I am the President and CEO of Equinox Chemicals and Adco Products located in Albany, Georgia. Thank you for having me here today. It is an honor to be here to represent my company and our part of the industry.

We are an industry leader in chemical innovation, R&D, specialty manufacturing, and product commercialization around the world. The industries we serve include aerospace, specialized industrial products, pharmaceuticals, lubricants, flavors, cleaning, and cutting-edge research products for a diverse group of markets globally.

When I started Equinox Chemicals eight years ago as a single-person operation, I had a vision of building a high-tech product development company and a manufacturing company that could vertically integrate all the way from innovation through R&D, manufacturing and commercialization and be able to compete in a global marketplace. I knew this would be the key if we were really, really going to be able to compete in a really diverse market, and because of this approach, we have grown more than 300 percent in sales and over 389 percent in employee growth in the last three years. We have invested millions of dollars in infrastructure and manufacturing here in the United States and facilities during a period of time when the rest of the industry was pulling back and not investing capital, and it is our ability to compete both domestically and globally in this very short amount of time that has allowed us to excel in both innovation and manufacturing. So establishing solid standards and being involved in the development of new standards, or updating existing standards both domestically and globally, is one of the most crucial factors in our success.

The United States leads the way globally by setting the bar for existing standards as well as in the development of new standards as world markets, products and technologies evolve. The key to the United States remaining in this pinnacle position and continuing to improve the process is to ensure that the following four basic principles which have been essential to our success are maintained and further developed.

One is that the standards process is private-sector led with representation from government, industry, both small and large industry representatives, and consumers, and we need to ensure that there is flexibility and applicability with minimal impact on innovation, competition, and economic growth. It has got to be consensus based. It has got to be a transparent decision-making process where participation is available to all the stakeholders and you get input from a diverse group of folks regardless of the size or the location of the representative giving input. And I would also like to emphasize that guaranteeing a balance in the process inputs from all the stakeholders is key to favoring one group or industry over another when you are setting standards, which would create

unfair competitive advantages and creating an environment where the end user, the consumer, may not be getting the best possible product. It has to be voluntary. Mandating standards hampers competition and the innovation process by limiting the company's ability to work outside the box and on the cutting edge of new technologies. There is a time and place in the development cycle for standards, and you can't—there is no set time for a standard to be developed. You really have to rely on the folks that are the experts and the consumers and the part of the advisory board to decide when it is appropriate to start a standard process, because if you do it too soon you can stunt growth and stunt innovation.

And then promoting the U.S. standard-setting system and standards set under that system domestically and abroad would lead the way around the globe, and having to comply unnecessarily with multiple standards both domestically and globally adds a huge amount of unneeded redundancy and complication to many of the companies, especially the small and medium business companies. It would be great and ideal if we could just choose what standard we wanted to comply with, but it doesn't work that way. We are in dozens of countries, we have thousands of products, and our customers choose what standards they expect our products to comply with, and so when we have all those redundant standards that we have to comply with around the world, it makes it very, very complicated for us to do that.

So the United States has consistently led the way in developing these globally accepted standards, but as the E.U. and other developing countries start to develop those standards, we need to ensure that we continue to lead the way, work closely with these trade partners, and we have to ensure that other countries do not create unnecessary trade barriers and otherwise use standards to create unfair competition in places, especially in Europe where one of our biggest markets is, and REACH would be a great example there.

So in closing, I would like to ask that you continue to weigh this topic with your colleagues, staffs, and advisors, and that you remember the critical standards—that it is critical that standards are set to create equal opportunity among domestic and international businesses of all sizes, involve no excessive fees that limit SME participation and competitiveness, and minimize delays in development and approval of new products, and include some intellectual property protections to encourage investment in these endeavors worldwide.

Thanks for the opportunity, and I am available to help in any way possible going forward.

[The prepared statement of Mr. Grimaldi follows:]

PREPARED STATEMENT OF MR. MARK GRIMALDI

Testimony for Mark Grimaldi, Equinox Chemicals
February 29, 2012
House Committee on Science, Space and Technology

Promoting Innovation, Competition, and Economic Growth: Principles for Effective Domestic and International Standards Development

My name is Mark Grimaldi, and I am the President and CEO of Equinox Chemicals and Adco Products located in Albany, Georgia. Thank you for having me here today. It is an honor to be here to represent my company. We are an industry leader in the chemical innovation, R&D, specialty manufacturing, and product commercialization. The industries we serve include aerospace products, specialized industrial, pharmaceutical, lubricants, flavors, cleaning, and cutting edge research products for a very diverse group of markets globally. When I started Equinox 8 years ago, I had a vision of building a high tech product development and manufacturing company that could vertically integrate from innovation and R&D through manufacturing and commercialization. I knew this would be the key to be able to compete both domestically and globally. We have grown more than 300% in sales and 389% in employees in the last three years, investing millions in infrastructure and facilities during a period of time when the rest of the industry was pulling back. It is our ability to compete both domestically and globally that in a very short time has allowed us to excel both in innovation and in manufacturing.

Establishing solid standards and being involved in the development of new standards or updating the existing standards, both domestically and globally, is one of the most crucial factors in our success. The US leads the way globally by setting the bar for existing standards, as well as in the development of new ones, as world markets, products, and technologies evolve. The key to the US remaining in this pinnacle position and continuing to improve the process is to ensure that the following four basic principles in the standards process are maintained and further developed:

1. **Private-sector led:** A private sector led process, with government, industry (small, medium and large), and consumer involvement is necessary to ensure maximum flexibility and applicability with minimal impact on innovation, competition, and economic growth.
2. **Consensus based:** A transparent decision making process, where participation is available to all stakeholders, regardless of size or location is essential. I would like to emphasize that guaranteeing a balance in the process inputs from all stakeholders is key to avoid favoring one group over another, creating unfair competitive advantages, and/or creating an environment where the end user or consumer is not getting the best possible products.
3. **Voluntary:** Mandating standards hampers competition and the innovative process by limiting a company's ability to work outside the box and on the cutting edge of new technologies. There is a time and a place in the development cycle for standards. Incorporating standards too early can stunt company growth and product development.
4. **Promoting the U.S. standard setting system and standards set under that system domestically and abroad:** Having to comply unnecessarily with multiple standards both domestically and globally adds a significant amount of unneeded redundancy and complication to many companies. It also impacts the end user's ability to navigate the process efficiently and effectively. It would be nice to be able to just choose the best standard program for our company, but when you're diverse and are competing in the global market place with over 1000 products in dozens of countries, the reality is that each customer wants a different standard. Complying with multiple overlapping standards globally, adds a significant burden to our business and our competitiveness. Therefore, whenever possible the U.S. government should

encourage our trading partners to utilize standards set in accordance with the above principles, where U.S. companies are allowed to participate in a transparent process. Further, it would be even more helpful for the U.S. government to promote these standards to third party countries or promote a system of mutual recognition where the third party country recognizes a standard set in the U.S. and allows our company to comply with fewer redundant standards.

The US has consistently led the way in developing globally accepted standards, but as the EU and developing countries start to develop standards of their own, we need to ensure that we continue to lead the way and work closely with these trade partners. We have to ensure that other countries do not create unnecessary trade barriers or otherwise use standards to cause unfair competition for our company.

Equinox has greatly increased its business through leveraging standards employing the above principles. A great example occurred in 2005, when SOCMA developed its ChemStewards program, a comprehensive management system and performance improvement program. It was founded on three key principles which are the foundation of an effective standards development process:

1. It is a standard created by the industry
2. It is adaptable
3. Its participants are audited by an independent third party

We realize it is imperative to produce innovative products in an environment that guarantees safety and environmental compliance to all stakeholders including: employees, communities and consumers. Performance Improvement (PI) programs are proactive responses to these obligations.

The ChemStewards program is designed to promote continual improvement in chemical production over all facets of EHS&S. The chemical trade associations create environmental, health, safety, and security programs designed as management systems. Other standards which are partially compliant with ChemStewards include: **OHSAS 18001, ANSI Z-10, OSHAVPP, OSHA SHARP Aspects, ISO 14001, RC 14001 and RCMS.**

The key advantage to ChemStewards Performance Improvement Program is its adaptability and recognition of the diversity of the batch and specialty chemical industry. It is imperative that chemical companies have systems, practices and procedures in place to safely and effectively operate in a manner that protects and gains the confidence of stake-holders resulting in a conceptual "license to operate".

To what extent has Equinox been able to contribute to both domestic and international standards development processes that affect your company?

Equinox and its affiliates have been heavily involved in more domestic than international standards setting processes. However, with our global expansion and growth we are adding resources to get more involved in the international standards process. Domestically, our biggest contributions have been through trade associations like SOCMA, and getting more directly involved in technical committees such as our seat on the NFPA for garment care that sets the standards in the dry cleaning industry. This committee is made up of 12 people including users, consultants, manufacturers (chemical companies, equipment companies), regulatory agencies such as OSHA, fire department officials, and international members. Being a key member of this standards setting committee significantly impacts our business and our customers. It directly relates to the requirements put on our customers and our ability to produce and develop better products that raise the bar to not only meet the standards, but to exceed

them wherever possible. If we are a part of the process, we can be sure that the best products make it to the market and that our customers and the end users are protected, and use the products correctly.

What has been the experience of your company with the use of technical standards in countries where you export?

An example of creating non-tariff barriers (NTBs) that quickly impacted innovation and our ability to compete in the EU market is REACH. Registration, Evaluation, Authorization and restriction of Chemicals—REACH—became law on June 1, 2007, designed to streamline and improve the former legislative framework on chemicals of the European Union (EU). REACH places greater responsibility on the industry to manage the risks that chemicals may pose to health and the environment.

In principle, REACH applies to all chemicals, not only chemicals used in industrial processes, but also in products such as cleansers, paints and appliances that touch our day-to-day lives.

Objectives

The aims of REACH are to:

- Improve the protection of health and the environment from the risks that can be posed by chemicals
- Enhance the competitiveness of the EU chemicals industry, a key sector for the economy of the EU
- Promote alternative methods for the assessment of hazards of substances
- Ensure the free circulation of substances on the internal market of the European Union

There are obvious consequences that include a drain on financial resources, coupled with the requirement by EU to share proprietary information with competitors in the industry. They not only create barriers to entry, but also slow down the process significantly to a point where you sometimes miss the technology window for your product. As new technologies develop faster and faster, the standards and regulations have to be flexible enough to keep up. There were many US companies that had little or minimal awareness of REACH when the standards were put in place. Companies based outside the EU cannot register directly. The law requires EU importers to register the substances they import. This requires that the non-EU supplier fully disclose formulations of products to its EU customers in order for them to register or to alternately register, for its EU customers utilizing an "Only Representative". We have no such barriers to trade or requirements to hire in-country representatives with European companies that seek to do business here in the U.S. REACH compliance is complex, expensive, and a serious factor in determining whether or not U.S. companies can participate in the European marketplace. We are currently in the process of launching several industry changing products in the EU, and our launch will take many months longer than it would have otherwise.

What actions can the Federal Government, standards development organizations and other companies take to minimize your vulnerability to the use of standards as technical barriers to trade?

Technical barriers to trade often appear in the form of standards and regulations. These non-tariff barriers (NTBs) are the hardest to change, even when they have questionable merit. We see NTBs in both developed and developing economies, for example through mandatory in country eco-tox testing in China, REACH in the EU, or additional regulations at Federal or Provincial levels in other countries. For many countries these are difficult to navigate and combat. The Transatlantic Economic Council (TEC), the Department of Commerce, and USTR are examples of ways we address NTBs currently. For more mature markets, many of the NTBs have been around for a while, are well established, and difficult to

reverse. There are real costs to businesses that face market access barriers and to consumers that lose out on innovative products. For emerging technologies, it is important to work within industries and across countries to develop industry standards that allow for maximum market access. For example, it would be highly beneficial if the US and EU work to establish standards that they can then push into third world country markets.

There has been an increased focus on regulatory coherence in the Asia Pacific Economic Cooperation (APEC) and in the US-EU High Level Regulatory Cooperation Forum. These are all avenues worth pursuing to address technical barriers to trade, both established and emerging.

Within the chemical industry, there are examples where standardizing testing requirements have worked well and brought down testing costs. The OECD [Test Guidelines](#) and OECD Principles of [Good Laboratory Practice](#) ensure quality and reliable test data related to chemical safety in the framework of the Mutual Acceptance of Data. As countries develop chemical control laws, we urge them to use OECD definitions and guidelines, so that we all start from a common point.

The MAD system - a multilateral agreement - allows participating countries to share the results of various non-clinical safety tests done on chemicals and chemical products, such as industrial chemicals and pesticides. This saves the governments and chemical producers around €150 million annually and removes potential non-tariff barriers. This is done due to the fact that OECD and other adhering countries must accept the data.

Please explain from your personal experience when it is helpful to develop a standard.

This is a very complex and difficult question to answer. I don't believe there is a universal answer for every situation. I think you have to evaluate every potential new standard and the need for each independently of others. If domestic or foreign governments attempt to establish a one-sized-fits-all or blanket statement regarding specifically when and how it would be appropriate to develop a standard, you will head down the path I believe you're all trying to avoid by having this hearing. You need to rely on your standards committees to make the determination based on the need in each individual case. We need to maintain our position in the global market when it comes to setting standards, but we also need to balance that with setting these standards at the appropriate times. If we rush out to set standards just because we are worried about not keeping the lead or to just develop a "me too" standard in response to another country's attempt, we will only lose our credibility and position as the global leader. It's better to work closely with our partners and fight bad and unfair standards than to retaliate with another one that we are not ready for here or globally. It is harder to undo a standard once it's implemented than to just do it right the first time. The world listens to us and we need to be sure we keep that position and push back when needed.

In closing, I would ask that as you continue to weigh this topic with your colleagues, staff and advisors, that you remember it is critical that standards are set to:

1. Create equal opportunity among domestic and international businesses
2. Involve no excessive fees
3. Minimize delays in development and approval
4. Include intellectual property protections to encourage investment in these endeavors world-wide.

Thank you for the opportunity.

Chairman QUAYLE. Thank you, Mr. Grimaldi.
I now recognize our final witness, Mr. Seay, for five minutes.

**STATEMENT OF MR. JAMES SEAY,
PRESIDENT, PREMIER RIDES**

Mr. SEAY. Good morning, Mr. Chairman, Members of the Technology and Innovation Subcommittee. My name is Jim Seay and I am the President and Owner of Premier Rides, a small company in Maryland recognized globally as an industry leader in the supply of innovative amusement rides and attractions. I would like to personally thank Ranking Member Edwards for the kind invitation to discuss the position of small business with respect to the standards development process.

Premier Rides focuses on the construction of high-tech rides that incorporate elements such as non-contact magnetic drive systems that both dramatically accelerate multi-ton vehicles to high velocities in seconds and stop them just as quickly. As an exporter, we ship millions of pounds of millimeter-accurate fabricated steel all over the world, including sophisticated electronic control systems to areas like Singapore, Indonesia and China. On a voluntary basis, I serve as the chairman of the ASTM International Committee F24 on Amusement Rides and Devices. Along with 500 members from 24 countries, we provide thousands of voluntary hours annually towards the development of amusement-ride safety standards. Safety is the paramount principle of my industry, and I believe strong safety standards are an appropriate method for establishing a very high bar for participation.

Premier Rides is a growing company of approximately 20 technical and marketing employees plus a fabrication base of over 200 craftsmen. The expansion of global business is allowing us to add more staff, and last month, Premier has added five new engineers, both entry level and also senior level. We are hiring more engineers now. The more engineers we hire, the more work for our manufacturing facilities. I can honestly say that without fair global standards that ensure a high level of quality and safety, Premier would not be delivering as much equipment internationally. Simply put, the standards level the playing field for us.

ASTM International is a 100-year-old nonprofit organization devoted to the development of voluntary consensus standards. It is accredited by ANSI and meets WTO principles for the development of international standards. ASTM also has a long and vibrant relationship with the National Institute of Standards and Technology.

For a small company like Premier, the key principle to effective standards participation is fair treatment for all. At ASTM, Premier does get, as a small business, fair treatment. The ASTM committee structure ensures balanced participation from stakeholders. While I am from a small company, my technical input and votes regarding safety issues are equal to that of companies such as Walt Disney and Universal. That is very powerful for a small company.

Another principle for the success of small company engagement is the use of technology to lower barriers to participation. ASTM has committed significant resources to provide integrated electronic processes from the inception of an idea for a standard until that

standard is published. This is an especially important tool for small companies like Premier that do not have unlimited manpower and unlimited financial resources.

So does Premier have a positive experience with standards? Yes. In locations like Singapore and Indonesia, the experience due to standards adoption has established a level playing field, eliminated subpar, substandard suppliers and put Premier in a position where there was a fair basis to compete with other quality-focused suppliers.

Are all experiences positive? No, they are not. In one example, despite the fact that our industry relies upon ASTM standards worldwide, the ISO has recently formed a new technology committee for attraction safety under the chairmanship of the Federation of Russia. That makes no sense. As another example, in a rush to provide new entertainment experiences to the public, developers in China incorporated subpar equipment with virtually no safety standards oversight. Serious accidents occurred and China reacted not by adopting the ASTM standards but by writing their own. To our technical experts of the industry again, this makes no sense. I see a major opportunity for organizations like NIST to assist in promoting existing standards, and without such an effort, the independent efforts might result in trade barriers, less safety, and affect the growth of companies like Premier.

In summary, small- and medium-sized companies like Premier have, and need to continue to have, an effective voice in the standards process in order to advance the global competitiveness of U.S. companies of all sizes. The U.S. Government should promote global harmonization and the adoption of the best standards, and avoid the unnecessary and costly obstacles that are created when our trade partners create policies and preferences for less-robust standards.

I appreciate the opportunity to appear before you and look forward to working with you.

[The prepared statement of Mr. Seay follows:]

PREPARED STATEMENT OF MR. JAMES SEAY

Subcommittee on Technology and Innovation
2318 Rayburn House Office Building
Washington, D.C. 20515
February 29, 2012

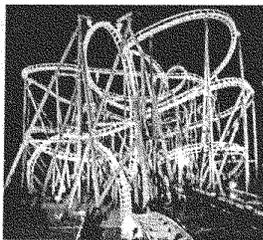
Promoting Innovation, Competition, and Economic Growth: Principles for Effective
Domestic and International Standards Development

Testimony of James L. Seay
President, Premier Rides
Baltimore, MD

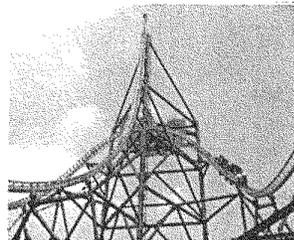
Chairman, ASTM International Committee F24 on Amusement Rides and Devices

Introduction

Good morning Mr. Chairman, members of the Technology and Innovation Subcommittee - my name is Jim Seay and I am the president and owner of Premier Rides, a small company in Maryland that is recognized globally as an industry leader in the design and manufacture of innovative amusement rides and attractions. Premier Rides focuses on the development of high tech rides that incorporate advanced elements such as non-contact magnetic drive systems that can both dramatically accelerate multi-ton trains to high velocities in seconds and stop them just as quickly. As an exporter, we ship millions of pounds of millimeter accurate, U.S. fabricated steel to locations like Singapore, Indonesia, and China. I am also the Chairman of the ASTM International's Committee F24 on Amusement Rides and Devices. Along with five hundred other members of ASTM Committee F24 from 24 countries worldwide, we provide thousands of voluntary hours annually towards the development and enhancement of amusement standards that improve safety in our industry by addressing design, operations, maintenance, quality control, measurements, testing and terminology. I am before you today to discuss how strong standards are vital to the success of a small company like Premier.



"Mad Cobra", Discoveryland
Dalian, China



"Yamaha Racing Coaster", Trans Studio Theme Park
Bandung Supermal, Indonesia

About ASTM International

ASTM International (ASTM) is a leading non-profit organization devoted to the development of voluntary consensus standards that are utilized by ninety industrial sectors in the US and in most geographic regions of the world. For more than 100 years, ASTM has served society as a leading venue for consumers, industry and regulators to work together in the development of voluntary consensus standards that promote health, safety, the environment, and that improve the overall quality of life. ASTM is accredited by the American National Standards Institute and meets World Trade Organization principles for the development of international standards. ASTM has a long and vibrant relationship with the National Institute of Standards and Technology (NIST) and over 150 researchers currently are engaged in ASTM's standards development activities. In all, there are 35,000 individual members of ASTM coming from 135 nations.

Public/Private Collaboration in Standards Development

Standards development organizations (SDOs) - such as ASTM International - help to drive innovation and advance our nation's competitiveness through the development of voluntary consensus standards used in research and development, commercialization, product testing, and quality systems. Current policies for the development and use of private sector technical standards continue to be extremely effective benefiting 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 U.S. government's commitment to base technical regulations on international standards that meet World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement¹ principles. The government's commitment to these policies has led to an increased use of voluntary standards in the U.S. and elsewhere, and made government regulation and procurement more efficient and globally relevant.

Small and Medium Sized Companies

Premier Rides is a growing company of approximately twenty technical and marketing employees, plus a fabrication base of over 200 craftsmen. The expansion of global business is allowing us to add more staff. In the last month, Premier has added five new engineers, both entry level and senior level. We are currently interviewing to hire more engineers. Additional engineers mean more projects can be handled, which in turn means more work for our manufacturing facilities. I can honestly say without fair global standards that ensure a high level of quality and safety, Premier would not be delivering equipment overseas on the scale we are presently accomplishing. Simply put, the standards level the playing field.

¹ See the USTR TBT Agreement web page for a review of the Agreement, Decisions and Annexes at: <http://www.ustr.gov/trade-agreements/wto-multilateral-affairs/wto-issues/technical-barriers-trade>

The key principal to effective standards participation is fair treatment to all that take part in the process. Just over one-half (51 percent) of the ASTM membership comes from companies or organizations that have 250 employees or less. At a time when policymakers worldwide are examining ways to boost the engagement of small companies in international standards development activities, these individuals are well represented in the important work of ASTM by actively contributing their technical expertise to inform and shape standards, and – in many cases – leading committees, task groups, and even serving on the ASTM Board of Directors. The ASTM committee structure ensures balanced participations from stakeholders. While I am from a small company, my technical input and vote is equal to that of my colleagues on the committee from large multinational companies such as Walt Disney and Six Flags. Members from small companies play a critical role in today's global economic infrastructure and their voice and technical expertise is crucial as ASTM works to meet the standards related demands and expectations of our stakeholders. In my committee, where our members are passionate about safety, any one of us can bring up safety issues to raise the bar. That is powerful.

Another reason for the success of small company engagement is the ever-evolving use of technology to lower barriers to participation and speed the process. ASTM has committed significant resources to provide an integrated electronic process from the inception of an idea for a new standard or revision to an existing standard through to its approval, publication and delivery. For example, virtual meetings, which combine teleconferencing with Internet document viewing and editing, have been a valuable tool in engaging additional experts and accelerating the development process. This is an especially important tool for small and midsize companies like Premier that do not have unlimited manpower and financial resources. Other resources such as electronic balloting with accompanying project management functionalities, the electronic distribution of meeting minutes, website tools for committee members and online collaboration areas for task group work add efficiencies to the process and further facilitate timely response to industry needs. While speed is important, the steadfast commitment to the principles of quality, transparency and consensus amongst all interested parties is never compromised in the standards development process.

Innovation and Competitiveness

To ensure that our nation's vital Public/Private collaboration in standards development is positioned to respond to new challenges and opportunities created by advanced technologies of tomorrow, it is crucial that we remain committed to allowing industry and regulators the ability to choose from a broad portfolio of relevant international standards based on important considerations such as technical quality, market relevance, and global coherence. Government policies – whether in the U.S. or elsewhere – that limit government engagement to specific standards organizations, or that create preferences for standards from specific standards development organizations, threatens innovation and undermines the effectiveness of legislative or regulatory initiatives. In today's complicated business environments, industries and regulators need standards from

multiple sources because no single standards developer is able to satisfy the standards needs of every industry or cross cutting regulatory challenge.

Standards, Regulations, and Barriers to Trade

The U.S. government is a signatory to the WTO TBT Agreement and is pledged to use international standards as the basis for technical regulations whenever possible, with a view towards eliminating the use of standards as barriers to trade. Our standards system is rooted in the principles of consensus, openness and assistance to others. Unfortunately, the standards policies of other countries and regions are more restrictive and often result in U.S. companies (including small companies like mine) having to comply with unfamiliar technical standards that were developed with limited U.S. input. In some instances, foreign governments dictate that international standards can only emanate from organizations such as ISO and IEC where countries are represented by a single “national body” organization.

The flexibility of our national standards process empowers the U.S. government and private sector to participate in international standards activities in a variety of ways: through organizations such as ISO and IEC where the United States is represented by a single “national body” organization; through treaty organizations where governments are members; through consortia, whose membership is typically technology based; and through professional and technical organizations and U.S.-domiciled SDOs whose membership is on an individual or organizational basis. Our national standards process offers enormous benefits to businesses, consumers, and society, facilitating innovation and strengthening economic competitiveness. But this process is not well understood by many outside the United States.

Accordingly, the U.S. government should do more to help foreign stakeholders understand the benefits of the approach embodied in the U.S. Standards System. To advance the diverse international standards objectives and interests of U.S. stakeholders, the U.S. government should continue to seek full implementation of the WTO TBT Agreement and annexes as well as decisions taken in the WTO TBT Committee. To that end, the U.S. government should continue to foster and support the unique character and strengths of the Public/Private partnership in standards development as it pursues trade and other international agreements, regulatory harmonization, and legislative and regulatory approaches. U.S. companies of all sizes invest their technical resources in the development of standards that match their interest and business objectives. In the case of F24, Premier participates because of a passion for safety that translates into setting a high bar for entry into the marketplace which benefits those that invest in quality. When barriers to the acceptance of such standards impair their ability to utilize them, it is these U.S. companies who are most affected through the need for additional product testing or possibly the need for product redesign to achieve the desired market access.

While it is possible for European standards to make reference to existing standards from ASTM and other standards bodies allowing some limited level of acceptance, there is currently no legal mechanism that exists in the European regulatory infrastructure to allow standards from U.S. domiciled organizations to achieve the same acceptability as

European standards or ISO standards. To this point, the U.S. government should engage their European Commission counterparts and recommend that they incorporate the international standards principles outlined in the Decision of the WTO TBT Committee into its legal framework and, in the context of Europe's New Approach to Technical Harmonization and Standardization, extend the presumption of conformity to any standard that fulfills the essential requirements of a Directive and is developed in accordance with these principles. Implementing this internationally agreed-upon approach would have far-reaching and significant effects, including: increases in harmony, efficiency, choice, flexibility, and much needed relief from expensive, duplicative procedures for companies that trade internationally. Fast moving areas involving advanced technologies stand to benefit the most from the ability to utilize a broader array of international standards through lower costs and time spent in developing standards.

Challenge to Small Businesses: Lack of Standards Coherence Internationally

A WTO TBT principle addresses coherence as follows, "In order to avoid the development of conflicting international standards, it is important that international standardizing bodies avoid duplication of, or overlap with, the work of other international standardizing bodies. In this respect, cooperation and coordination with other relevant international bodies is essential²".

For over 30 years, ASTM Committee F24 on Amusement Rides and Devices has brought together experts from around the world in an open forum to share best practices and develop safety standards for our industry. Out of this process has come a set of truly international standards that support the global amusement industry and promote amusement ride safety for people everywhere.

Despite the fact that our industry relies upon ASTM standards worldwide, the ISO has recently formed a new technical committee ISO/TC 254 Safety of Attractions, under the Chairmanship of the Federation of Russia. Working through ANSI, the U.S. objected to the creation of this ISO activity as it could lead to duplication of effort, divergence of performance requirements and impact patron safety.

There are a limited number of international experts in the field of amusement safety and they are currently over committed. Another initiative to develop yet another standard on amusement ride safety may fall short of expectations without the involvement of these key individuals. Members on the current ASTM F24 committee include regulators (including 20 state regulators), inspectors, engineers, technicians, designers, owner/operators and other interested parties. These professionals come from Australia, Brazil, Canada, France, Germany, India, Italy, Japan, Russia, Switzerland, the United Kingdom, and the United States. While several of the countries involved in ASTM F24 voted no to the ISO proposal, the proposal received approval through the support of

² See the USTR TBT Agreement web page for a review of the Agreement, Decisions and Annexes at: <http://www.ustr.gov/trade-agreements/wto-multilateral-affairs/wto-issues/technical-barriers-trade>

countries that do not currently have amusement ride standards nor do they have experts in the area of amusement ride safety.

Development of additional amusement ride safety standards under a different process will be expensive and time consuming, which can be avoided by recognizing ASTM F24 standards as the global standard practice for amusement ride safety. These standards meet the WTO criteria, have multinational involvement, and have global reach. For the amusement industry and others, ASTM International is a proven international SDO and F24 standards are recognized as relevant international standards as they meet the needs of the global amusement industry.

Even though Premier is experiencing success in China, a similar situation to the ISO issue is occurring. The field of entertainment is rapidly expanding in China. Opportunities for U.S. companies in the entertainment field are significant. However, in the rush to provide new entertainment experiences to the public, developers in China incorporated subpar equipment made in China with virtually no safety standards oversight. Serious accidents occurred and China reacted not by adopting the ASTM Standards, but by writing their own, which to the technical experts of the industry have significant challenges. A past NIST's Standards and Trade workshops with delegates from Chinese industry identified amusement park rides as one potential sector of interest, educating and creating linkages for industry and standards experts worldwide. I see a major opportunity to assist in promoting existing standards and without such an effort, the independent efforts might result in trade barriers and affect the growth of companies like Premier.

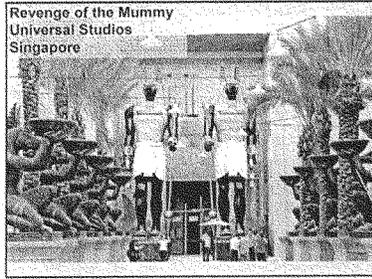
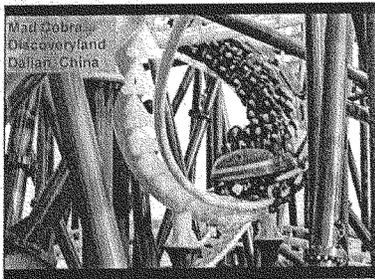
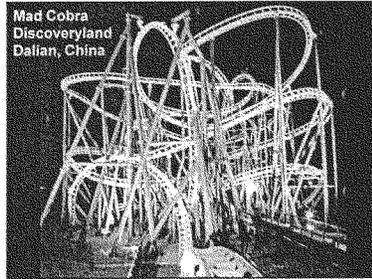
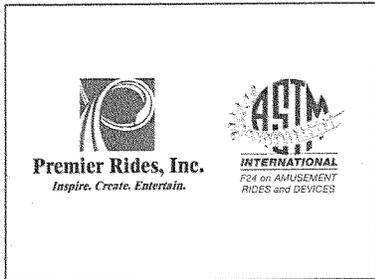
Global Recognition for Small Businesses

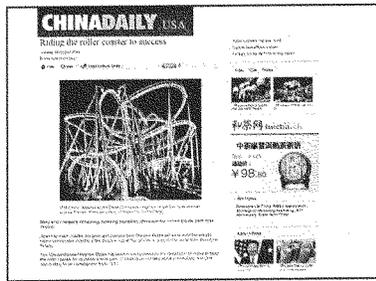
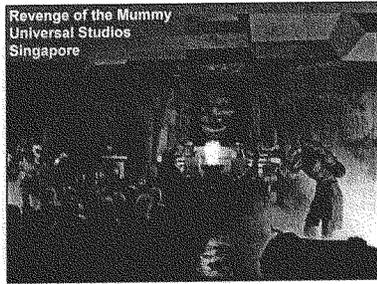
In a global environment, it is extremely difficult for a company like Premier Rides to stand out. As noted, participation in a standards process where a small company's contributions carry weight (ASTM's one company / one vote policy) help level the competitive field. Recognition programs are another important element. Premier is a member of the International Association of Amusement Parks and Attractions (IAAPA). Annually, IAAPA holds multiple expositions throughout the world with the largest here in the United States; up to 30,000 in attendance. IAAPA has encouraged industry participation in NIST's Malcolm Baldrige National Quality Award Program. Awards such as this, which require significant dedication, can provide instant global credibility, open doors, and such programs should be both supported and encouraged.

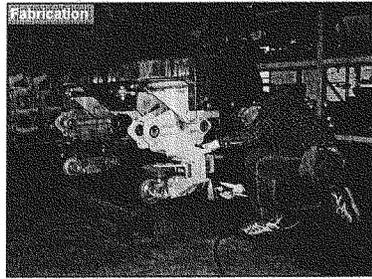
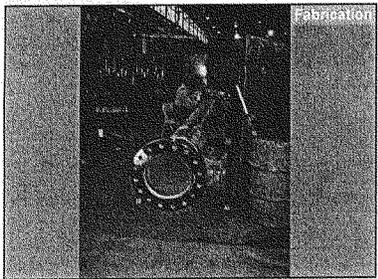
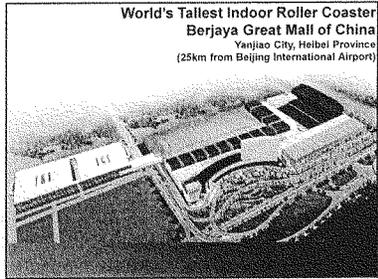
Conclusion

In summary, existing U.S. standards 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. Small and medium sized companies have an effective voice in the process. In order to advance the global competitiveness of U.S. companies of all sizes, the U.S government should promote global implementation of WTO TBT Agreement principles for international standards

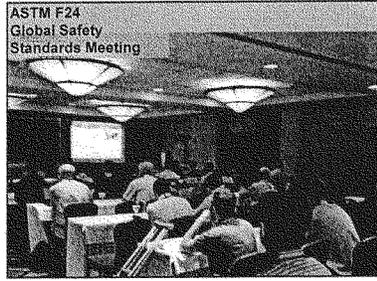
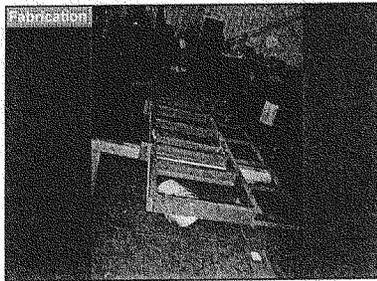
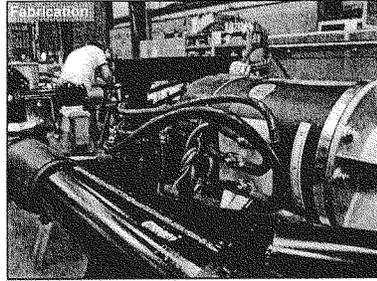
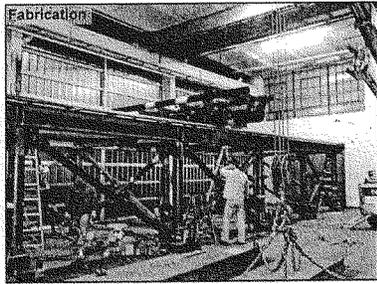
and avoid the unnecessary and costly obstacles that are created when our trade partners create policies that create preferences for European or ISO standards. I appreciate the opportunity to appear before you and look forward to working with you.



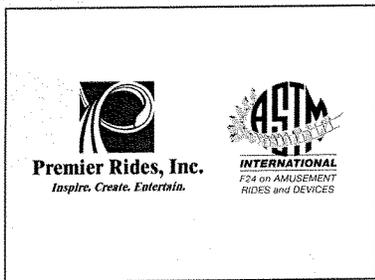




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Premier Rides, Inc.

1007 East Pratt Street
Baltimore, MD 21202

PREMIER RIDES, INC.

Company History

Premier Rides, Inc. was founded in 1995 and is located in Baltimore. The company is one of the most innovative companies in the design and manufacture of rides and attractions. We team up with the industry's best structural analysis group, the office of Werner Stengel. We also work in close cooperation with the leading ride safety organization, TÜV.

Premier Rides is best known for our award winning high-tech roller coasters and roller coaster type rides. Premier Rides is also a global supplier of family attractions such as water rides including the industry recognized Water Coaster, traditional roller coasters (steel and wood), observation towers, Observation wheels and Ferris wheels such as the Coaster Wheel and other custom designed attractions.

Over the past sixteen years, Premier Rides has delivered more than thirty attractions.

Premier Rides has a library of existing rides to choose from, as well as an incredibly talented group of engineers capable of designing an attraction to meet a client's specific needs and works to ensure goals are met.

Jim Seay - Biography

At the helm of this innovative corporation is president and owner Jim Seay. With Premier Rides since 1995, Seay first explored the outer limits of flight technology as a project engineer for Hughes Aircraft working primarily on stealth missile technology.

Seay shifted from the aerospace industry to the amusement ride arena in 1988 when he joined Six Flags Theme Parks as an engineering and maintenance executive. He brought seven years of park experience to Premier Rides when he signed on as Executive Vice President of Engineering. In 1996, Seay became president of Premier Rides, with a philosophy centering on innovation, quality and superior customer service.

Since heading up this highly qualified team of professionals, Seay's team has helped create and introduce Linear Induction Motor and Linear Synchronous Motor powered roller coasters, the Liquid Coaster, and immersive dark ride coasters.

He serves as Chairman of the ASTM F24 Global Committee on Ride Safety Standards as well as volunteers as an industry representative to the Recreation Access Board which focuses on providing ride access to people with disabilities. Jim also serves on the Board of Directors of both the National Aquarium in the United States and the AIMS Ride Safety Seminar organization and is involved in several committees within the International Association of Amusement Parks and Attractions (IAAPA). Jim also serves as a senior advisor to R&B singer Mario and his Do Right Foundation that focuses on disadvantaged children.

Seay earned a Bachelor of Science degree in Mechanical and Aerospace Engineering from Cornell University in Ithaca, New York and did his graduate studies at California State University, Long Beach.

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'Premier Rides' is the trade name of Premier Rides, Inc

Chairman QUAYLE. Thank you, Mr. Seay, and I would like to thank all of the witnesses for their testimony, reminding Members that the Committee rules limit questioning to five minutes. The Chair will at this point open the round of questions, and I will recognize myself for five minutes.

Ms. Saunders, I wanted to ask you, one of the concerns that I have, you said that there are about 10,000 consensus standards that were in federal regulations, and one of my big concerns is how some federal regulations are just allowed to go on in perpetuity without any reevaluation. I actually introduced a bill that actually has all major rules after 10 years go through another reevaluation so they can do a cost-benefit analysis. What are federal agencies doing with the standards that are within the federal regulations to make sure that they are still the type of standards that we need so that we are not going to stifle innovation going forward?

Ms. SAUNDERS. Well, to your point, you are right. We do track in the Code of Federal Regulations close to 10,000 references to standards in various agencies' regulations, and there is a provision, a general provision that agencies should review major rules every five years with a view to revising them or eliminate them, etc., and many agencies do an excellent job of undertaking that revision. To be practical, it is easier for the smaller agencies that have a smaller number of regulations for which they are responsible to undertake that review on a frequent basis but I know that all the agency standards executives do encourage the folks who write the regulations to undertake those reviews to determine whether the regulations themselves should be revised or updated or eliminated, and also that the standards referenced in those regulations might need to be updated in the sense that a more recent edition might need to be referenced.

There are clearly health and safety issues that have to be carefully considered by the agencies when they undertake those determinations, and I will also say, recently, over the past two years, the Office of Management and Budget Information and Regulatory Affairs has explicitly reached out to agencies seeking them to submit plans for review of the regulations, and that has had some positive impact as well.

Chairman QUAYLE. Okay. Thank you.

Mr. Grimaldi, in your testimony you were talking about when the right time to have the consensus standards be made with new companies, especially startups in the startup sectors that if you put standards in place too early, that might stifle growth and innovation, but is there no magic point of when you should put standards down? What is your take on when we should be looking to provide consensus standards from the various sectors because it has to come from the private sector so that we can all work together. But when do you see that as the time to do it?

Mr. GRIMALDI. That is a very difficult and complex question to answer because it is such a broad area. For instance, in the chemical industry, we are so diverse. I mean, chemicals go into so many—just about everything in the world and affect so many different markets and can affect Intel and the furniture business and the paint business and the carpet business. It goes into everything. And so when you do you start setting the standards? It has to be

looked at on an individual basis. You can't just have a magic line in the sand that says when you cross this line, you have got to start developing a standard.

And so it makes it a very, very difficult process because the other thing you want to be careful of is that in some cases when we are developing new technologies that revolutionize a particular market or an industry such as dry cleaning or something like that, when you can develop a new product that replaces a product that has got safety issues or environmental issues, you want to be able to bring that product to market very, very quickly. Well, the standards are so old and so established that sometimes you want to be able to start that process much, much sooner than you would for something that has to be out on the market for a while. It is so new, it is such a new technology or a new market that you want to have time to understand what the impacts that the standards are going to have before you go into that process.

Chairman QUAYLE. Okay. Thank you.

Mr. Wennblom, you mentioned that monitoring and enforcing the WTO Agreement on the Technical Barriers to Trade is the best way that we can actually get the full benefits of that agreement. How do you think the monitoring—has it been effective so far? Do you have any suggestions on how to improve that?

Mr. WENNBLOM. That is an important question. I think the monitoring we have is largely effective but it does require the engagement of industry, which is often the first to see an issue and in partnership with NIST and USTR and other parts of the government. So I think everyone has to be diligent, but the tools we have in place are good ones. Of course, I also mentioned there are ambiguities in some of the trade agreements, and as we see an opportunity to improve those agreements or develop new ones that would be more clear and support U.S. interests, that is always helpful to pursue.

Chairman QUAYLE. Okay. Thank you very much.

I now recognize the Ranking Member, Ms. Edwards, for five minutes.

Ms. EDWARDS. Thank you very much, Mr. Chairman, and thank you all for your testimony.

I am really curious here, it feels like the elephant in the room is China, and so I want to have a little bit of a discussion and particularly in the area of, say, intellectual property rights. I am a little curious about the relationship between intellectual property rights and standards with respect to China, and my understanding is that in recent years there has been a push by Chinese regulators to invoke compulsory licensing of intellectual property rights for mandatory standards, and so I wonder if any of you can discuss these efforts and what they mean for U.S. companies attempting to do business in a really huge market. Mr. Bhatia?

Mr. BHATIA. I will take a shot at it. ANSI has an intellectual property rights committee, which basically looks at these issues from a broader perspective, and just recently we had the privilege of having ITC, FTC, and—what was the third agency? So we have all the key agencies of Federal Government are also participating—PTO also joined. In addition to that, we have about 90 different organizations that are participating and not always the opinions are

common, but we worked very hard to develop what we think are rightful measures to not only handle the application of IPR issues and standardization, for example, the issue of embedded technology that is preferred by a company as a critical issue but also working to take action at the international level such as with countries like China or others where there may be violations of intellectual rights off others, and we are working not only with China but we are also working with international organizations like ISO and IEC to develop global policies that will support the needs of industry, not just in the United States but also in other developed markets, which are usually creating the intellectual capital.

So I think there is a lot to be done. We do need the assistance and engagement of industry on an active basis. We have a forum in which to debate these issues and advance. We also have bilateral agreements with SAC, for example, the standards organization of China. We work very closely with them, and we can go to them directly about these issues and these problems, and quite often they try to work with us. China is maturing slowly. I think they are becoming more aware of their responsibilities. As they become more advanced in technology development, they are going to be creators of intellectual capital, not just the user of it. So I think they are becoming more and more responsive to requests, from the Western countries usually, to address these issues in a fair manner.

Ms. EDWARDS. I am also just curious, from a business perspective, and our three witnesses who actually deal with this probably on a more regular basis can help me understand what happens when your company encounters an international standards-related issue and you might need the U.S. government to offer some kind of assistance in resolving that. Given the number of agencies that might have responsibility, you as business owners, who do you call and how do you know who to call?

Mr. SEAY. I will speak from the standpoint of our company. First of all, China is a very important trading partner to someone like Premier but the IP issues in my industry are significant. It was not uncommon that you go to trade shows recently and you see photographs of your equipment, our own equipment, Premier's equipment, in other people's booths, which are startup organizations in China. The way that that has been remediated is, number one, we have a trade association, the International Association of Amusement Parks and Attractions. They have adopted an IP approach to preventing that from happening.

The biggest challenge is, if China does not adopt the global accepted standards, what happens in our industry is—and there have been significant issues where they will essentially use the IP on a visual basis of an attraction—they will build an attraction, but because it doesn't have the embedded safety of what the standards like the ASTM F24 give, you end up with a very devastating result, and there have been some serious accidents because of that, as I mentioned.

Ms. EDWARDS. Are there times when that equipment then somehow or another makes its way into the U.S. market?

Mr. SEAY. It has been marketed into the U.S. market and there are instances where some of it has come in. The results have not

been good. There hasn't been a safety issue here in the United States, but the results on a quality level has now put—there has been pushback on that. But it is important to have someone like NIST that we can turn to because as an example, NIST had a workshop with Chinese people, businesses who came here and they identified our industry as being one where we have got to work together closer. So we do need someone like a NIST that we can turn to for that.

Ms. EDWARDS. And Mr. Chairman, we can explore this, but the question that I have is, is it NIST, is it PTO, is it, you know—I mean, I am just completely confused as to if I am a businessperson who owns a small business, trying to figure out and navigate who has the responsibility to be my advocate in an international arena I think is very complex, and I hope, Mr. Chairman, we are going to be able to get to some of those questions. Thank you.

Chairman QUAYLE. Thank you, Ms. Edwards.

And I now recognize the gentleman from Tennessee, Mr. Fleischmann, for five minutes.

Mr. FLEISCHMANN. Thank you, Mr. Chairman.

I know we have touched on this in some of the testimony and some of the questions, but I would like to hear from all of you all about this issue, please. What in your experience has been effective responses for either industry or government when a company encounters the use of standards as technical barriers to trade in countries to which they export? I would like to hear from all of you on that.

Ms. SAUNDERS. Okay. We have several examples of effective responses. I think the most effective responses were—building on my fellow panelists' comments—the affected industry and the relevant government agencies come together, and in the trade space when you have a technical barrier to trade, the lead on that issue is the U.S. Trade Representative's Office. We work with the Department of Commerce in particular because we have a trade agency component as well as a scientific component. We work very closely with the U.S. Trade Representative's Office to provide technical expertise that underpins their negotiating arguments or their arguments against countries that are applying technical barriers to trade. It is very important to have the support of the industry as well. I can speak from a practical perspective in terms of how that barrier is actually affecting business. But I do think we have several cases. Joe mentioned one particular in China where he worked with the private sector and also with the government. We have several cases where we have been successful in rolling back technical barriers to trade. There are many cases where it hasn't worked quite as well. But I think when the trade agency, particularly the U.S. Trade Representative's Office, Department of Commerce including NIST for technical expertise, and the industry work together, we have a pretty good chance of being successful.

Mr. BHATIA. If I may add to that, we have quite a few structures through which we can execute our concerns. We have technical advisory committees, which are jointly sponsored by USTR and Department of Commerce, which are all populated by private sector people. I chair one of those, which deals with technical barriers to trade. I am a Vice Chair now. I chaired it for 10 years. And

through that forum, we can address all technical issues that are faced by either industry association as a collective activity or by individual company that channels it through the trade association like Mr. Seay gave the example of.

We also have opportunities to work directly with countries because we have bilateral agreements with them. We also have opportunities to engage the responsible federal agency for that particular product type. For example, the example of playground equipment, we would go to CPSC, Consumer Product Safety Commission, because they have the oversight of managing the safety of consumer products in this country and they have relationships with their counterparts in other countries as well. Similarly, we can go to OSHA for workplace safety issues. So we have opportunities and mechanisms that we work with, and ANSI has structured a lot of our liaisons with both federal agencies and also in other countries to address some of these issues both at the governmental level and also at the private-sector level because we also work with industry groups in many other countries.

Of course, we have better success with mature partners that we have been working with over the years like Canada or Germany or U.K., and we are beginning to learn how to work more effectively with countries like China or India. But I think it is not a lost cause. We can do a lot of good.

Mr. WENNBLOM. Thank you for the question. I think one of the most important things we do is try to identify concerns at an early stage by monitoring the standards activity in the countries of key trading partners using tools like the standards portal that ANSI provides and others, just having people on the ground. We also then, if we identify a concern, work in trade associations to determine if there is an industry view on that concern, and using the comment opportunities that the Technical Barriers to Trade Agreement provides, we can identify those concerns to key trading partners. If the concerns aren't addressed, then USTR is a great partner in further addressing those issues. So that is kind of our general recipe.

Mr. GRIMALDI. I would also agree with that in that a key way that as a small business we navigate that and help ensure that we get an effective response from government is using our trade associations and using them as a resource to help us navigate through the systems to get that response that we need, and the Transatlantic Economic Council, Department of Commerce, and USTR are examples in the ways we address these NGBs currently. But it is very difficult in more mature markets where we have a lot of these trade barriers that have been around for a while that are well established. It is very difficult to reverse some of that, and especially when you have got new technologies and innovation that you want to launch globally. And a lot of times with the speed of technology development and change, it is difficult to get that new technology out there quick enough and respond quick enough when you have these standards that are in the way.

Mr. SEAY. I will be quick. I mentioned before the ISO issue that our industry is dealing with. We have not found an appropriate mechanism to deal with that one where you have almost like a rogue standards effort being established that doesn't have the ex-

perts that should be there that exists in other efforts. I will give an example of a trade barrier situation, which is even closer than China, where up until recently Europe and the United States in my industry, you would have to build equipment for the United States and you would have to build different equipment for Europe. There has been a concerted effort set up by the trade association I mentioned before, IAAPA, working with ASTM where the CEN people and the ASTM people got together to harmonize their standards so that there would be some ability to cross-promote products between the two areas, and that is not only good for the manufacturers, it is good for the end user because it ends up making the cost of the product lower.

Mr. FLEISCHMANN. Thank you very much. I yield back.

Chairman QUAYLE. Thank you, Mr. Fleischmann.

I now recognize the gentleman from Maryland, Mr. Sarbanes, for five minutes.

Mr. SARBANES. Thank you, Mr. Chairman, and thank you for having this hearing, and I also want to thank the Ranking Member for bringing Jim Seay to the panel today. His business is located in my district and we are very proud to have it there. Premier is a good name for his business because it really is the premier deliverer of ride products across the world from my understanding, so we are glad to have all of you here today.

I wanted to pick back up with you, Jim, about this ISO issue and help me understand a little bit more what it means that the Federation of Russia now has the chairmanship and why you are describing this activity as kind of a rogue activity. I am sort of drowning in the alphabet soup of acronyms that are involved here in this thing, but maybe you can on that issue give us a little more detail.

Mr. SEAY. Yeah, the alphabet soup is kind of like the Ambien of the technical world, you know.

But the ISO situation is a perfect example of the challenge, and with ASTM, you have got a voluntary consensus organization, and as I mentioned before, anybody can participate in ASTM. We have, you know, operators, manufacturers, consumer advocates, the CPSC. I mean, you have this wide array. Anybody can participate. With the ISO situation, an individual who is smart enough to recognize that they can take what is called the tag for ISO by writing a check, and they now control this new committee and it is a committee that is not open. It doesn't have the consensus approach. If you want to write checks, you can participate.

One of the biggest challenges is that the United States only gets one vote in ISO, and so you now have a scenario where—and with the Europeans, we actually have this good relationship I talked about before, but the Europeans have a vote for every country in Europe so the United States becomes—has a minor role, and here we are in an industry where you look at the global business for my industry, the majority of that global business is controlled through U.S.-based entities and the expertise lies in large part in the United States and also in Europe. So you have this situation where suddenly, you know, the entire body of experts becomes a very small factor in the development of these regulations, and, you know, nothing against the Federation of Russia, because I never

want them upset at me, but you know, they have not been a large participant in the entertainment business, we are, and the attractions we build are incredibly sophisticated. We have attractions that run 13 trains at the same time with seconds of separation so that requires extreme safety.

Mr. SARBANES. So when the ISO, the jurisdiction of the—I mean, because the way you described it, one response might be to say well, there are all these other ways of exchanging standards and bringing consensus and so forth. So, you know, ignore ISO if it is off on some rogue expedition. So describe the kind of jurisdiction it has in terms of the reach of these regulations that it issues and how that creates a problem for you and other companies.

Mr. SEAY. Well, I think the comment before, the elephant in the room comment, is a good one because the challenge with ASTM, and I will be honest, it has got an A there; it is American. The issue is with ISO, it has got an I. It is international. It is simple as that. When the vote went out globally, should this ISO standards development group be established, you know, the Germans were great. The Germans have some fantastic standards. They wrote a very blatantly negative vote for it. However, there were votes all over the world from people who don't even have attractions in their country who said sure, ISO, that has got to be better than anything else, and that is the situation that you honestly end up in.

Mr. SARBANES. And when did this happen? How long has the ISO sort have been a force to be reckoned with?

Mr. SEAY. Well, the ISO has always been a force to be reckoned with, and there is a lot of good product out of the ISO, but for our particular situation, this is about 12 to 18 months.

Mr. SARBANES. And can you quickly give a specific example of a barrier? You talked about, you had to build equipment to meet U.S. standards and then you were building a different form of the equipment in terms of Europe at one point, and you saw that as a problem. Without giving away any trade secret, is it like a specific product where you could describe where this problem occurs in terms of a technical barrier, just again, to give me more understanding of it?

Mr. SEAY. Just one example. When China did react and write their own standards, and we talked about that before, people writing their own standards to kind of protect their own world, they wrote standards that have to do with g-forces, and our world is all about the g-forces applied to people, and they wrote standards that don't correlate to all the studies that have been done between Europe and the United States, and there is extensive information that went into establishing g-force standards that are in ASTM and the CEN that are good standards. The Chinese changed those and they don't make sense to the experts in our industry. So now you can't supply a product that has been incredibly reliable at a Disney park that millions and millions and millions of people have ridden and ridden safely, as that product potentially might not be able to be put into China now because of that new standard.

Mr. SARBANES. Great. Thank you.

Chairman QUAYLE. Thank you, Mr. Sarbanes.

And then I recognize the gentleman from New Mexico, Mr. Luján, for five minutes.

Mr. LUJÁN. Mr. Chairman, thank you very much.

And to pick up a little bit where this conversation has been going, Mr. Grimaldi, you say that with respect to emerging technologies, it is important to work with industries and across countries to develop industry standards that allow for maximum market access and that it would be highly beneficial to the United States and the E.U. to work to establish standards that they can then push into developing markets. Can you talk a little bit more about the United States-E.U. cooperation and why it is important and how this sort of cooperation can benefit U.S. companies?

Mr. GRIMALDI. Yes, I can. And I guess I can give an example that really hits home where that didn't work well and why I think it is important. So in 2007, the Europeans put together the REACH standards and regulations, and a lot of folks here know a lot about that. It is very messy, and the objectives were: to improve the protection and health and the environment from the risks that can be posed by chemicals; enhance the competitiveness of the E.U. chemical industry, a key sector for the E.U. economy, so right there, it becomes a trade barrier; promote alternative methods for assessment of hazards of substances; and ensure the free circulation of substances on the internal market within the European Union. And I think that when they started to develop this standard, which happened very, very quickly and blindsided a lot of U.S. companies, the intent was good, but by the time it actually made it to implementation, the restrictions were tremendous. You know, companies based outside the E.U. can't register directly. The law requires importers to register the substances they import. A non-E.U. supplier has to fully disclose all of his formulations and IP and share that with his competitors in Europe. And you actually have to have European representation there to comply with the standards.

And so the burden for a small company like ours or a medium-sized company to comply with these standards is hundreds of thousands of dollars just to get product into Europe and/or pull products out that we did have there, and what it does is, it starts to stymie the best products that could go to market or to be able to even effectively launch a product there and front those costs. And so one of the ways that we really need to cooperate in that situation is to be sure that we don't come up with a "me, too" standard, just not in retaliation but to make sure that—you know, because what we saw was a bunch of European companies now doing business here. Some of our biggest competitors came to the United States because it was easier to do business here. They were having trouble with their own standards.

And so there was a lot of discussion about well, we can do the same thing here and level the playing field, and I think that is the wrong answer. We don't want to go and do a "me, too" standard just because we want to level the playing field. I think we need to take the high road and lead that effort and push back and say this—you are creating a standard that makes unfair competition and doesn't work logically for the markets that the industries are trying to standardize.

Mr. LUJÁN. I appreciate that.

Mr. Wennblom, jumping to a technology I think that most of us depend on daily, and I appreciate in your testimony talking about in 1995 the contributed technology associated with USB, and so my question to you and to Mr. Bhatia is, as we talk about this notion that mobile phones are going to begin to adopt additional standards associated with these charging technologies, I appreciate that I can use a USB charger and I can move from computer to computer whoever it is manufactured by, but the frustration that I have is, when you are buying new mobile phones, the USB still works in the computer but the aspect that goes into the mobile device to charge it, I don't know how many car chargers I have gone through and how many plugs I have gone through. The one thing I appreciate about these two devices that I carry daily, one that belongs to me, one that I use for Congressional responsibilities, is the same charger on my iPod that I bought many years ago I can use to charge this phone but the chargers that I have for BlackBerries from previous years don't necessarily charge this.

So when we talk about USB, micro USB and whatnot—and I know I ate up a lot of time there, Mr. Chairman, but this is something that I certainly hope that we can get direction to solving, and the rationale being, Mr. Chairman, as we talk about the notion again pointed out in the testimony that it is important for the United States to set a good example, demonstrating the approaches we would like to see for the countries to adopt but that we need to be careful when we are looking for voluntary as opposed to mandates. It seems to me that when you come out with a new technology, we are talking about electricity flowing into a device to be able to charge a battery or another form of power to be able to charge these devices, that the same connectivity that Intel and others led the charge with the USB on the reverse side should reflect what is happening. And I am not suggesting that Apple adopt what is happening with BlackBerry. I am just suggesting that one company, when it finds a device or a way to plug into their phone that they like, that they keep it, so that way I don't have to keep buying plugs and devices.

So with that, Mr. Chairman, I hope we can explore that a little bit more, and maybe there is a way for the mobile-phone industry to truly when we say that they are going to do it, that we see them do it or that we find another way to encourage them to do it, Mr. Chairman. Thank you.

Chairman QUAYLE. Thank you, Mr. Luján. We are going to have a second round of questioning just for that. Actually, for those who want to have a second round, we are going to go through, because I have some additional questions, and Mr. Luján actually brought up a very important point that was going off of what Mr. Grimaldi was talking about with the REACH agreement in Europe, and how do we really push for the consensus-driven standards that are developed in the United States to make that to be the process globally? Because I think that that would be the best route to take. Mr. Seay talked about various things that were happening in China and Russia but how do you—how do we take that—and I guess I will ask Mr. Bhatia and Ms. Saunders to answer this one—how do we take that and be able to promote that consensus-driven where all the stakeholders are getting involved and get those standards

that way rather than the top down because like Mr. Grimaldi said, when you have the consensus-driven standards, you have people coming from Europe to the United States because it is better. So how do we promote that?

Mr. BHATIA. It is a complex issue, and as you can appreciate, every country—now, let us be honest, every country has the right to select for itself the levels of safety, health, or welfare that it chooses to work up to, a set of criteria, and this is recognized by WTO principles. We are a signatory to that. So every country has a right to decide how they are going to address critical safety issues or health issues or environmental issues. And in fact, our agreement under WTO allows countries to have deviations in criteria based on cultural differences, based on economic development, industrial development, based on climate conditions, and it is all legit.

Also, let us not forget that the infrastructure of the globe is built. Electrical systems are built. It is going to cost trillions of dollars to change the electrical system from United States to other countries to go from 110 volts to 220 volts, from 50 hertz to 60 hertz. It is not going to happen. So what is the solution? The solution is to find a way to harmonize our standards as best as we can, and for that, we need international forums to facilitate engaging of the countries in a logical fashion using the best solution that exists so far and bring that to the international table.

One of the biggest challenges I have as the President of ANSI is to find a way for our U.S. SDOs, large ones—ASTM, SAE, IEEE, ASME—use their intellectual capital that has been developed with participation from many people and many industries, and we heard about the participation levels. It is a valid document but it is not often received and accepted as an international document. How do we cross that bridge? We can cross that by creating agreements, and we are trying to work on dialog with ISO and IAC and ITU to develop, we call them PSDO agreements or joint development agreements or taking a base standard from United States and building on that as an international standard. Oftentimes we succeed. I would say 90 percent of times we succeed. The example on the playground equipment that was ASTM standard, we didn't succeed. We objected to that initiative by ISO going forward. We voted no to that. So did the Germans. But guess what? There are more countries than just two. The majority went out. So the development of that standard now requires us to watch what goes on and get as much of that intellectual capital that exists in the ASTM standard with their permission hopefully into the new criteria. So that is what needs to happen and we are working on that.

I think we also have to learn as a country to play in this global environment a little bit differently. The days of us dominating totally the infrastructure of electrical development or innovation are gone, I think because of the Internet, because of the diversity of manufacturing and creativity. I think we are going to have to deal with new powers that are emerging, you know, the BRIC countries, you know, the Brazilians, the Indians, the Chinese. We are going to have to find a way to work with them along with the previous players along with the previous players like the Germans and the French and the Brits and the Japanese.

So I think we are doing that, but we are going to have occasional problems, and that is why the collaboration with the industry is so important, and that is why the support from agencies like USTR, like NIST, like Commerce is so important so we can take the U.S. position and make that into a success for us, and I think we have tons of examples of where it works. Unfortunately, sometimes you only hear about the problems. Good stuff also goes on a lot, and if you look at these two guys, they are working in the ITC—I am sorry, one guy at least. He is working in the ITC sector. We dominate that area. We control that industry. We develop innovation. We get acceptance more than anywhere else. I think we have the technology that we are able to commercialize very effectively because we have a private sector-led process which allows innovations to be commercialized successfully, not just in the United States but all over the world, and that is a success story and so are many, many others, and I think the chemical industry is the same thing. We are looking at biotechnology, we are looking at nanotechnology. We will do the right things but we will have occasional problems. We have to find a way to work together and get these done, and we are not going to work by butting heads with the Chinese or the Russians or the ISO central secretariat. We need their help in achieving the overall success.

Chairman QUAYLE. Right, and I think that Mr. Grimaldi made the good point of, let us not try to go the same route that they are taking in terms of trying to shut off and put up trade barriers because then you are just going to get the back and forth that we can't have. So thank you very much.

I now recognize Ms. Edwards for five minutes.

Ms. EDWARDS. Thank you, Mr. Chairman, and thanks for allowing us to continue to explore here.

Mr. Wennblom, I want to turn to you because you mention in your testimony that more needs to be done to improve acceptance and understanding of diverse systems of standards development that is embodied in the United States to foreign stakeholders. But I wonder how you propose that that be done, and no one chose to answer my question of who do you call, so I suppose, Mr. Grimaldi, you are going to be content with making those five phone calls that you described earlier in your testimony, so I won't go beyond there.

But Mr. Wennblom, if you could address that question, I would appreciate it.

Mr. WENNBLOM. Sure, and I think the ambiguity I would point out is around the definition of what is an international standard. The World Trade Organization in its Technical Barriers to Trade Agreement creates some preferences for international standards, encouraging governments to base regulation on international standards as opposed to domestic standards. It is a very helpful section of the document. But the definition of international standards is open to some interpretation. So for example, to Mr. Seay's situation, in the United States, we would agree that ASTM develops international standards. But in other countries, Russia, for example, they would take a much more narrow view and say that international standards are only developed by ISO and IEC and ITU, and ASTM, just an interesting foreign standard to them. So that disagreement over what is an international standard creates

an ambiguity that leads to problems like the one we have heard about today, in my view, so that the situation I was referring to.

Ms. EDWARDS. Are there sectors—and this was raised to me at least in all of your testimony but are there sectors that are more appropriate to the development of international standards versus domestic standards that then are, you know, by practice and by technology and manufacturing incorporated by those in the international arena?

Mr. WENNBLOM. Well, I can speak from the perspective of the information technology, information and communication technology sector where nearly all the standards we are interested in are global standards, international standards. Country-specific standards just don't make sense in our business, and it is naive to think that we can develop a U.S. standard and just expect the rest of the world to pick that up and adopt it, as Mr. Bhatia said. So we have to, from the start, plan on developing global standards, and that is really what we are interested in in our sector.

Ms. EDWARDS. And then what happens in terms of our competitiveness when, say, the alliance is the Europeans and China on the development of a set of standards that may not quite be where our domestic market is? It feels like there are some instances where we then—you know, if we want to compete, we become followers, if you will, because it is really tough to lead when you are in an international arena in which that alliance, which is, you know, so much more substantial than—I mean, I guess it is one—you know, there is one point of which I suppose the United States and Europeans could be allied in terms of development of standards and then we begin to, you know, set the pace. But if that alliance is something different, it makes for a different competitive environment for U.S. companies.

Mr. WENNBLOM. Well, standards should be about the best technology and innovation and growth for everybody, so if we can bring to the table as industry good technology and good ideas, I hope we—and my experience, we can build alliances for people to see it that way. It is not perfect, and we need to be diligent at that, but I think at the end of the day, alliances based on what is the best technical approach are pretty powerful.

Ms. EDWARDS. And Mr. Bhatia, could you also describe where there are instances where principles that we undertake in our standards development, and Ms. Saunders, you may have a comment about this too, that have become commonly accepted principles in the international arena?

Mr. BHATIA. Thank you. Yes. Let me just clarify one thing for the benefit of those who may not know the facts. The United States is the most dominant player in the ISO and IEC arena because of our size of our economy and because of who we are. We occupy permanent seats in both of those organizations' boards, five of them, six now. China has been included. We have that ability to direct, if you will, most of the strategies and implementation. We don't control everything but we have a lot to say, and oftentimes we are heard.

In terms of—I am sorry, you were asking about?

Ms. EDWARDS. I was asking about—

Mr. BHATIA. Oh, the principles?

Ms. EDWARDS. Yes.

Mr. BHATIA. Yeah, we have what we call essential requirements in the United States which are carried out by ANSI. Over 260 standards developing organizations in this country are accredited by ANSI and they are judged against these essential requirements. These are criteria which focus on things like proper balance, participation, right to object, right to question, due process, consensus, resolving disputes. All of these are also mentioned in the OMB A-119, the circular, which makes it a national process, if you will, officially. WTO principles also follow similar lines, and most of the major developing countries have adopted these processes and their national bodies follow those principles as well. I think for the benefit of those who may not know the details, there are only about 15 to 20 major countries, developed economies, that are producing the documents. The rest of the world are users. So most of the development today in the technical arena internationally comes from these handful of countries, and the rest of the world becomes the user of that final solution. So I think we have an opportunity to work very closely with our partners, and quite frankly, the industry concerns in the United States often are aligned with the industry concerns in Germany, and the industry concerns in Japan, and the industry concerns in China—perhaps once they get mature. Right now they are not there. So I think that is going to become a big harmonizer of the future, so to speak.

And to reflect on your question, are the strategies different for different sectors, the answer is absolutely yes. In the areas where we have significant international trade, I think it is almost essential that we have an internationally recognized standard, which is something that is domestically focused, it is a unique sector, it is a limited application. A country-specific document or a regional document like a NAFTA-type document or document for the Americas may suffice for a while, but the key is to create standardization and then move towards the harmonization process towards a global standard eventually.

Chairman QUAYLE. Thank you, Ms. Edwards. I now recognize Mr. Sarbanes for five minutes.

Mr. SARBANES. Thank you.

Anybody can answer this question. It is sort of a freestyle question. But, you know, a lot of talking, more and more, the President is talking more and more about how we restore American manufacturing, how we bring back some of these jobs from overseas and the manufacturing processes that we have lost overseas over the last few decades, and I am just wondering, I don't—help me make the connection if there is one, but can you relate what we have been talking about here today in terms of the standards and how that affects businesses of all sizes to this other conversation that we are having about trying to restart the American manufacturing sector in a vibrant way and bringing some of these jobs back and so forth. Maybe they don't relate, but I would love your perspective on that, anybody who wants to—

Mr. SEAY. I will just put some comments in. From the standpoint of having standards, I mentioned before that I personally believe standards are a good thing because they set a bar and they set a bar for participation, and we talked about before, is the timing of standards an issue. From our standpoint, it is only an issue that

you have got to get above this bar so that the product you produce is a safe product.

The issue we get where there is the potential of manufacturing loss is because countries that are not respecting appropriate standards, they do have the ability to produce equipment that is far more economical, economical in appearance, seeming to be the same level of equipment but not performing either as reliably as it should or not performing as safely as it should. And I think that the challenge gets to be that there is a temptation that is out there when you can go to a country that doesn't have these regulations but their price points will be 50, 60 percent less, and a lot of that is because the standards, at least in our industry, are not being adhered to. The ASTM standards are not being adhered to. We are a good example of that because of the level of quality that is required for a safe industry, and the performance in the United States as an example which lives up to ASTM, we are keeping the manufacturing jobs here. There is a reason that we are shipping millions of pounds to Indonesia of steel, fabricated steel. It is because the company in this case that we work with in Indonesia, Trans Studio, a very high-level conglomerate media company, they have a respect for standards. They have respect for electrical standards as well as standards in our industry, so they establish those as a minimum guideline so, if you want to participate in their projects, you have to meet those guidelines. So that helped us keep those jobs here and we will continue to do that.

Mr. SARBANES. So, I mean, put simply, if you are a country that believes you deliver a high-quality, high-standard product, you are going to want to develop these standards internationally that are at that level because that is going to obviously help you compete. Any other thoughts on that before my time runs out?

Mr. GRIMALDI. Yeah, I have got some thoughts on that, and that is really the basis for our company. In a down economy, we built a manufacturing company from the ground up and have grown it consistently year after year, and we have actually been able to bring business back, manufacturing business, from India and China and places like that, and it is looking at where we can be competitive. The global marketplace is going to change for U.S. companies and we can't—you have to look at where that niche is, what we can focus on and what we do well and what your customers are after. If it is price and it is a commodity item, it is difficult to compete here, but if you are looking at somebody that is looking for something that meets standards consistently that they can have control over, that they want IP protection and a timing issue and they want to have—they want to be able to see their products being manufactured, so it ends up being more of a high-tech, high-end process, and you create a specialty niche there, and I think that is where companies in the United States, when they want to grow and increase manufacturing, they have to look for those opportunities. They have to be agile. They have to be willing to change. You have to look at when your product becomes more of a commodity item and you can't be competitive anymore, you have to be willing to shift and look for new opportunities and new products to manufacture here, so I think it is alive and well here and growing if you look at the right opportunities.

Mr. BHATIA. I think there is a lot more that goes into retaining manufacturing than just standards. I think there is a strategy that needs to be looked at. There is going to be an \$8,000 car and a \$100,000 car. There is going to be a \$10 product and a \$100 product. Customers and consumers are willing to come in at different levels. So we have two responsibilities, one, to create a commercial advantage, a manufacturing advantage, second, to guard against going below the bare acceptable minimum levels of safety performance. So I think good companies will work at that, and standards can help in that area.

I think we also have some obligations that we need to think about that need to come from the public side also. One of the reasons Germany is very successful in exporting its technology and is perhaps now—well, not perhaps, they are the second largest exporter in the world because they work hand in hand with their government, their government programs, their facilitations, their efforts to outreach, their effort to get involved with the buying community in the future and the country of reception, if you will, where the market is going to be of them, and they nurture and develop these markets with a lot of support and help from their Federal Government and from their funding resources, which come beyond just within the company's ways and means.

We also have to think about the financial aspects of sponsoring, if you will, initiatives and knowledge dissemination in the SMEs. We talked about that a little bit but I hope one day we talk about that a little bit more because SMEs are a big source of developing new businesses and new opportunities both in manufacturing and also in exports of other types of products and services.

So I think there is a lot we can do. I see opportunities all over the place, but we need to find ways of funding that, resourcing that, and you guys are empowered to create incentives for this to be done more effectively, and I think we should talk about how we can achieve that.

Mr. SARBANES. Thanks.

Chairman QUAYLE. Thank you, Mr. Sarbanes.

I now recognize Mr. Luján.

Mr. LUJÁN. Thank you, Mr. Chairman.

I want to talk a little bit about that empowerment, and we have five minutes to find consensus and get direction on how to solve this problem, and, you know, as we talk about the seriousness associated with this, in the 111th Congress, we actually had a piece of legislation that moved out of this Committee talking about electronic waste, the components of the—right now the impact on the consumer, I would hope a revenue stream that is not built for the mobile industry, mobile-phone industry built on chargers as we talk about the reality associated with the industry. But what can be done as we talk about voluntary standards where, again, appreciating what happened with USB but also the frustration associated with the other end of that cord. When we talk about electricity that is flowing through that copper, the interchangeability associated with what goes into the socket, whatever country you are, it seems to me that we should at least find some common ground there and eliminate what is happening on the waste side as well as with consumers, with some seriousness associated with direction

on what could be done there to either encourage that voluntary component or see what could be done on our end.

Mr. WENNBLOM. Thanks for your question. Two main points. The first is that one of the reasons why you have seen change in the connector that is based on USB in various phones is because technology has changed and requirements have changed. The connector in phones today is much thinner than the connector that was originally created for USB, and that has been driven by the needs of phone manufacturers who know that consumers prefer thinner and thinner phones. The thinnest connectors today would have been too expensive when USB was created. So in terms of cost and form factor tradeoffs, it has been necessary to make changes over time. And the other thing that is changing in phones that is very important is battery technology. The chemistry is changing and the form factors are changing, and that has driven some changes in interfaces.

So if we tried to standardize on a connector too soon and required phone manufacturers to use that, that would have interfered with lots of the innovation that consumers appreciate today. So sometimes there are some changes necessary. However, there is also—

Mr. LUJÁN. If I may, then why is it that my iPod charger from four years ago can still power my iPhone and I can get the charge out of it? I mean, I couldn't find one of my chargers, I don't know where I left it, and so I went into my box of chargers, and lo and behold, I had an old iPod charger, plugged it in, plugged in my phone. The old one is kind of neat because it has two little clips on it which they made a little bit smaller, so with the exception of having to pinch those clips now and pull it out, it still charges the phone. This is second-generation iPod to iPhone 4.

Mr. WENNBLOM. The basic voltage for USBs remained the same since it was created. What has changed is the form factor of the connector. I think the connector on your iPhone is actually a proprietary interface based on USB, and because the manufacturer, Apple, has chosen to keep that the same over time for reasons that you would appreciate, your iPod connector still works. So continuity is useful, but there are times for breaks. I was going to say that the USB group has now contributed its technology to IEC for incorporation in an international standard for cell phone charging, and some of the changes we talked about are slowing down a little bit, so I am hopeful in the future you are going to need to change your cell phone charger much less frequently no matter which company you purchase it from.

Mr. LUJÁN. That is encouraging, but nonetheless, as we talk about how technology has evolved and appreciating very much the fact as we talk about the connectivity on the charging component, I think therein lies one of the frustrations associated with standards across the country as we talk about devices that we depend on daily to the complexities associated with rail and roller coasters and everything in between, if you will, when we talk about the magnitude of size as we take into consideration the safety component. But I would also suggest the convenience and commonsense component.

Again, I would hope that a revenue stream has not been developed associated with the charger, if you will, on the device and that

we truly look to see what can be done there which I would suggest would offer ease to the consumer as well as more consumer preference when it comes to me making decisions on what devices that I want to go shopping for. If I know that I have a device that I have all the chargers that I need in the world, hopefully I will stick with that same device unless there is a compelling reason not to go with it. But when I have to make a decision to completely retrofit all of the components for my vehicle, for my home, for whatever mobile components we carry with us, I think it impacts us a bit.

So I appreciate the humor associated with the conversation but also would ask that we take into consideration the seriousness when we talk about something as small as a mobile device.

Thank you for the indulgence, Mr. Chairman.

Chairman QUAYLE. Thank you, Mr. Luján. You never know where a hearing is going to go, but I appreciate your comments, and we actually, with Mr. Wennblom, got a lot of information on how the chargers are developing and the innovation behind it. So I want to thank—

Mr. LUJÁN. Mr. Chairman, if you would yield?

Chairman QUAYLE. Yes.

Mr. LUJÁN. One of the reasons I am so passionate about this is—

Chairman QUAYLE. Because of your box of chargers.

Mr. LUJÁN. It is my box of chargers, but actually this is a conversation I had with my mother years ago about the frustration that she had as well, so it is sensitivity to our moms, but recognizing that this is something that she said can't you do something about that. And so with the empowerment that was talked about, Mr. Chairman, I appreciate that. I yield back.

Chairman QUAYLE. Well, to all moms out there, we will come to a conclusion. But I want to thank Mr. Luján, and I want to thank all of the witnesses for their valuable testimony and the Members for their questions. The Members of the Subcommittee may have additional questions for the witnesses, and we will ask you to respond to those in writing. The record will remain open for two weeks for additional comments and statements from Members. The witnesses are excused. Thank you all for coming. This hearing is now adjourned.

[Whereupon, at 11:36 a.m., the Subcommittee was adjourned.]

ANSWERS TO POST-HEARING QUESTIONS

ANSWERS TO POST-HEARING QUESTIONS

Responses by Ms. Mary H. Saunders

THE HONORABLE BEN QUAYLE (R-AZ)
U.S. House Committee on Science, Space, and Technology
Subcommittee on Technology and Innovation

Promoting Innovation, Competition, and Economic Growth: Principles for Effective Domestic and International Standards Development

Wednesday, February 29, 2012

- 1. Clearly standards are important to manage quality control in global supply chains. How do NIST and ANSI encourage our trading partners to recognize conformance assessments conducted by accredited U.S. providers so that they will be accepted abroad?**

Answer: The National Technology Transfer and Advancement Act directs the National Institute of Standards and Technology (NIST) to coordinate conformity assessment activities with federal, state and local government and with the private sector to reduce redundancy. NIST encourages our trading partners to recognize conformance assessments conducted by accredited U.S. providers in several ways. For example, NIST designates U.S. Conformity Assessment Bodies (CAB) under the U.S./European Union Mutual Recognition Agreement and Asia-Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (MRA) for telecommunications equipment. Under this program U.S. CABs are authorized by our trading partners in the EU and individual APEC economies that have implemented the APEC MRA to test and certify telecommunications equipment to their regulatory requirements. This facilitates the regulatory acceptance of equipment without the need to have testing and certification conducted overseas. The American National Standards Institute (ANSI) is recognized as an accreditor of product certification bodies under this program.

Through the National Voluntary Laboratory Accreditation Program (NVLAP), NIST is a signatory to the Mutual Recognition Arrangement (MRA) of the International Laboratory Accreditation Cooperation (ILAC). The ILAC MRA's goal is to provide confidence in laboratory test results by accredited laboratories in other countries. This confidence is supported by an international peer assessment process in which NVLAP participates actively.

- 2. What steps can the U.S. government and industry stakeholders take to improve established international standards that are outdated and may be harming industry and consumers?**

Answer: Both industry stakeholders and U.S. government participants have an important role to play in ensuring that international standards of interest to them are current and incorporate the state of knowledge and stakeholder consensus. This is essential to ensuring that standards deliver on their

intended purposes, including assuring safety, protection of health and/or the environment, or enabling interoperability. Ensuring that standards are up-to-date also requires the active involvement of standards setting organizations that coordinate standards development work, and provide the needed infrastructure to develop and maintain standards. To ensure that international standards of interest are current, U.S. government and industry can:

- Inform standards setting organizations responsible for specific standards when the standards of interest to them need to be updated due to developments in technology, or knowledge about limitations of the extant standard.
- To the extent possible and resources permitting, participate in the standards setting organization's process for reviewing and updating current standards during their regular review cycle, or during out-of-cycle reviews, where necessary. If interested stakeholders are unable to participate in the standards review process, they should inform the standards setting organizations, or leadership of the standards groups where the standards in question are being considered such that their perspectives and opinions can be considered by the group in an appropriate manner.
- Federal agencies that use standards by referencing them in regulations and procurement can undertake reviews to determine whether the standards they reference are still appropriate and serve their intended purpose. Improved communication and information sharing among agencies with interests in similar issues may also help improve agency awareness about changes in technology that may require updating of standards, or about efforts underway to update standards.

THE HONORABLE RANDY NEUGEBAUER (R-TX)
U.S. House Committee on Science, Space, and Technology
Subcommittee on Technology and Innovation

Promoting Innovation, Competition, and Economic Growth: Principles for Effective Domestic and International Standards Development

Wednesday, February 29, 2012

- 1. What can Congress, NIST, and other federal agencies do to respond to countries that intentionally or unintentionally use standards as non-tariff trade barriers? From an economic perspective, is there any way to quantify the harm these technical trade barriers cause to American exporters? What countries are the worst offenders of these barriers to trade?**

Answer: The Office of the U.S. Trade Representative (USTR) leads the Executive Branch's efforts to respond to countries that use standards as non-tariff trade barriers. The overall strategy is to engage with trading partners to address standards-related measures that act as barriers to trade and to prevent the creation of barriers through multilateral, regional and bilateral channels. Last month, the President established an Interagency Trade Enforcement Center, housed at USTR, that takes a whole of government approach to monitoring and enforcing U.S. rights under international trade agreements, and enforcement of domestic trade laws, to ensure that American exporters are able to compete on a level playing field with foreign competitors. USTR publishes an annual report on technical barriers to trade (TBT); last year's report identified TBT measures to be addressed in 17 countries as well as the European Union and its 27 member states. Both the U.S. International Trade Commission and the Organization for Economic Cooperation and Development have studied the economic impact of TBT's on trade. It is difficult to isolate the impact of TBTs from that of other barriers, which include discriminatory customs procedures, and other complex and sometimes nontransparent foreign regulations that are not otherwise TBTs.

- 2. Do you have any concerns about outdated standards in the United States? Do any of these standards inhibit innovation? Is there anything the federal government can and should do better to ensure that all existing standards are relevant and workable for industries and consumers today?**

Answer: Standards development in the United States is largely private sector led, with active participation by U.S. government agency staff in areas relevant to agency missions. Update cycles for standards vary widely and are largely tied to the rate of change of the technology underlying specific standards. In some fields, technology cycles are very short – 6 to 9 months, for example, while in others technology may change much more slowly. As noted in the recently issued White House memorandum on Principles for Federal Engagement in Standards Activities

to Address National Priorities¹, the vibrancy and effectiveness of the U.S. standards system in enabling innovation depend on continued private sector leadership and engagement. One of the strategic objectives for government engagement called out in the memo highlights the importance of the U.S. government promoting standards and standardization systems that promote and sustain innovation and foster competition. Finally, the memorandum directs agencies to coordinate their standards related involvement and to take into account the impact of their standards-related choices on innovation and the global competitiveness of U.S. enterprises.

¹ http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-08_1.pdf

**Responses to Questions for the Record from the
U.S. House of Representatives Committee on Science, Space, and Technology**

**Hearing: *Promoting Innovation, Competition, and Economic Growth:
Principles for Effective Domestic and International Standards Development***

Responses submitted on March 29, 2012

Statement of

S. Joe Bhatia, President and CEO
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Questions from the Honorable Ben Quayle (R-AZ)

1. *How do trade associations and technical committees ensure balanced input and participation from all stakeholders?*

One of the core principles of ANSI – and the standards community at large – is that of inclusion; that those who have an interest in an issue should have the opportunity to be at the table when standards are developed. That includes businesses, consumers, government, academia, industry associations, and companies of all sizes.

As described in the principles of the *United States Standards Strategy* (www.us-standards-strategy.org), standards must be based on:

Openness: “Participation is open to all affected parties.”

Impartiality: “No one interest dominates the process or is favored over another.”

Consensus: “Decisions are reached through consensus among those affected.”

ANSI procedures assure the opportunity for balanced input and participation within:

- ANSI-Accredited Standards Developers
- ANSI-Accredited U.S. Technical Advisory Groups (TAGs) to the International Organization for Standardization (ISO)
- U.S. National Committee (USNC)-approved U.S. TAGs to the International Electrotechnical Commission (IEC).

ANSI accreditation of a standards developing organization (SDO) demonstrates that the SDO’s procedures in connection with the development of American National Standards meet the Institute’s essential requirements for openness, balance, consensus, and due process. Currently there are 226 ANSI-Accredited Standards Developers and approximately 10,000 approved American National Standards (ANS).

All U.S. TAGs to ISO technical committees are accredited by ANSI, and all U.S. TAGs to IEC technical committees are approved by the USNC. This accreditation / approval assures that U.S. TAGs operate according to procedures that assure openness, balance, and impartiality in the development of U.S. positions on and contributions to ISO and IEC technical work.

The following excerpts from ANSI's procedural documents describe the requirements that are in place for the development of American National Standards, and for U.S. participation in ISO and IEC activities in order to assure openness, balance, and impartiality:

- *ANSI Essential Requirements*: Due process requirements for American National Standards (www.ansi.org/essentialrequirements)

1.3 Balance

The standards development process should have a balance of interests. Participants from diverse interest categories shall be sought with the objective of achieving balance. If a consensus body lacks balance in accordance with the historical criteria for balance, and no specific alternative formulation of balance was approved by the ANSI Executive Standards Council, outreach to achieve balance shall be undertaken.

2.3 Balance

Historically the criteria for balance are that a) no single interest category constitutes more than one-third of the membership of a consensus body dealing with safety-related standards or b) no single interest category constitutes a majority of the membership of a consensus body dealing with other than safety-related standards.

The interest categories appropriate to the development of consensus in any given standards activity are a function of the nature of the standards being developed. Interest categories shall be discretely defined, cover all materially affected parties and differentiate each category from the other categories. Such definitions shall be available upon request. In defining the interest categories appropriate to a standards activity, consideration shall be given to at least the following:

- a) producer;
- b) user;
- c) general interest.

Where appropriate, additional interest categories should be considered.

Appropriate, representative user views shall be actively sought and fully considered in standards activities. Whenever possible, user participants shall be those with the requisite technical knowledge, but other users may also participate. User participation should come from both individuals and representatives of

organized groups. There are several user categories:

1. User-consumer: Where the standards activity in question deals with a consumer product, such as lawn mowers or aerosol sprays, an appropriate consumer participant's view is considered to be synonymous with that of the individual user – a person using goods and services rather than producing or selling them.
 2. User-industrial: Where the standards activity in question deals with an industrial product, such as steel or insulation used in transformers, an appropriate user participant is the industrial user of the product.
 3. User-government: Where the standards activity in question is likely to result in a standard that may become the basis for government agency procurement, an appropriate user participant is the representative of that government agency.
 4. User-labor: Where the standards activity in question deals with subjects of special interest to the American worker, such as products used in the workplace, an appropriate user participant is a representative of labor.
- ANSI Procedures for U.S. Participation in the International Standards Activities of ISO, Annex B, "Criteria for Development and Coordination of U.S. Positions in the International Standardization Activities of the ISO and IEC" (www.ansi.org/internationalprocedures)

B4.1 Openness

Participation shall be open to all U.S. national interested parties who are directly and materially affected by the activity in question. There shall be no undue financial barriers to participation. Participation shall not be conditional upon membership in any organization, or unreasonably restricted on the basis of technical qualifications or other such requirements. Timely and adequate notice of the formation of new activities related to international standards shall be provided to all known directly and materially affected interests. Notice should include a clear and meaningful description of the purpose of the proposed activity and shall identify a readily available source for further information.

B4.2 Balance

The process of developing U.S. positions shall provide an opportunity for fair and equitable participation without dominance by any single interest. Dominance means a position or exercise of dominant authority, leadership, or influence by reason of superior leverage, strength, or representation. The requirement implicit in the phrase "without dominance by any single interest" normally will be satisfied if a reasonable balance among interests can be achieved. Unless it is claimed by a directly and materially affected person (organization, company, government agency, individual, etc.) that a single interest category dominated the

development of the U.S. position, no test for dominance is required.

In defining the interest categories appropriate to U.S. TAG membership, consideration shall be given to at least the following:

- Producer
- User
- General interest

Where appropriate, more detailed subdivisions should be considered.

2. *Clearly standards are important to manage quality control in global supply chains. How do NIST and ANSI encourage our trading partners to recognize conformance assessments conducted by accredited U.S. providers so that they will be accepted abroad?*

International recognition of accredited conformity assessment is based on the Multilateral Recognition Arrangement (MRA) process among the world's accreditation bodies coordinated through the International Accreditation Forum (IAF), where nearly all the U.S. trading partner states are represented. This recognition is based on regular peer evaluations among the accreditors. Accreditations performed by the accepted participants of the MRA are then deemed by IAF to be equally reliable.

3. *What steps can the U.S. government and industry stakeholders take to improve established international standards that are outdated and may be harming industry and consumers?*

It is vital for the U.S. to maintain its key role in developing and maintaining globally relevant, responsive standards that not only assure U.S. competitiveness and innovation, but also protect health, safety, and the environment.

The U.S. standards system acknowledges that there are multiple paths to an "international standard." Whether we are talking about work done through ISO and IEC technical committees, or the many SDOs and consortia that operate on the international stage, what matters is that the standards meet marketplace needs and were developed according to the principles of the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement, which are also consistent with ANSI's *Essential Requirements* for standards development. The process must be consensus-based, open, with balanced participation – and include all other elements that are the hallmarks of our standards system in this country.

Because voluntary consensus standards are driven by marketplace needs, any organization working to develop international standards is motivated to keep their

standards up to date. Stakeholders with concerns about a standard's content are always encouraged to reach out to the SDO responsible for that standard and get involved in its development and/or maintenance.

For example, where there are concerns about an established international standard that was developed by ISO or IEC, U.S. government, industry, and other stakeholders are encouraged to approach ANSI to discuss the issue. As the sole U.S. representative to ISO, and, via the U.S. National Committee (USNC), the IEC, ANSI enables U.S.-based technologies and experts to have a prominent role in those standards organizations. With the support and backing of U.S. trade associations, SDOs, industry, and government agencies, our experts play leadership roles on nearly all ISO and IEC technical and policy committees to advance U.S. interests.

If a U.S. Technical Advisory Group (TAG) has already been formed to liaise with the international technical committee responsible for the standard in question, then concerned stakeholders can work with the TAG in order to raise their issues. If a U.S. TAG is not in place for the standard in question, then concerned stakeholders can work through ANSI to establish a TAG in order to discuss the issue at the ISO or IEC table.

The key to the nation's continued success on the global stage is to make sure that all U.S. stakeholder needs are taken into account, that we approach ISO and IEC with a clear and strong national position, and that we effectively leverage relationships with our partners internationally to gain support for these positions. To that end, ANSI is always focused on attracting greater and more diverse participation by government, industry, and other stakeholders in ISO and IEC activities. Doing so will assure that the broad spectrum of views from the public and private sectors are taken into account as U.S. positions are formed. To facilitate this greater level of engagement, ANSI has been working to improve access to publicly available information on TAG activities, and is coordinating efforts with federal agencies to ensure that all interested government stakeholders are aware of opportunities for participation.

When it comes to the development of American National Standards (ANS), the *Essential Requirements* make provisions for the revision and maintenance of all ANS, and ANSI accredited standards developers are required to undergo an audit at least once every five years. ANSI's auditing process is intended to confirm adherence to ANSI's procedures, and to increase the level of credibility and the effectiveness of due process for all persons who are directly and materially affected by the development of an American National Standard.

Questions from the Honorable Randy Neugebauer (R-TX)

1. *What can Congress, NIST, and other federal agencies do to respond to countries that intentionally or unintentionally use standards as non-tariff trade barriers? From an economic perspective, is there any way to quantify the harm these technical trade barriers cause to American exporters? What countries are the worst offenders of these barriers to trade?*

The development and application of standards, technical regulations, and conformity assessment (e.g., testing, inspection, certification, etc.) has a significant impact on global trade. When developed and applied in an effective manner, standards and conformance open global markets for U.S. products and services. However, intentional or unintentional misapplication of standards and conformance can create trade barriers for U.S. exporters.

The U.S. government should continue its efforts to aggressively address individual trade barriers as they arise in international markets – both through advocacy and enforcement. These efforts not only help the companies affected by specific barriers, but also send a message about the importance of fair and open trade and the U.S. commitment to ensuring that our trading partners fully implement any relevant trade agreements. To advance the diverse interests of U.S. stakeholders, the U.S. government should continue to seek full implementation of the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Agreement and annexes, as well as decisions taken by the WTO TBT Committee. Committing even more government resources to such activities can only be beneficial.

Overcoming Technical Barriers to Trade

A big problem we face in the global market is that all too often, standards are used as barriers by other nations. In emerging markets such as China and India, government agencies are creating hundreds – even thousands – of new standards and product requirements each year, with limited industry input in many cases. This can make it difficult for U.S. businesses looking to get into those markets. One of ANSI's key priorities is to help U.S. companies – large and small – negotiate this complex landscape and gain the market-growth advantages of standards and conformance, and overcome any barriers placed in the way of unobstructed trade relations.

To give one recent example, in the midst of fulfilling an \$8.5 million contract, a U.S. SME ran into problems with Chinese customs, who improperly impounded a key component, claiming it failed to meet Chinese certification requirements. After a series of unproductive meetings with Chinese freight forwarders and customs officers, ANSI worked with the China Certification and Accreditation Administration (CNCA), which agreed to intervene on behalf of the U.S. company. At the same time, the U.S. government raised the issue with Chinese officials, emphasizing China's WTO obligations. In a short time after the initial contact, the SME obtained the necessary certification and was able to enter the market. China's acknowledgement in this case of

its obligation under the WTO should also benefit other U.S. exporters to China who may face similar certification-related obstacles to trade.

In India, sometimes even Indian companies have a hard time accessing the standards and regulatory systems – in fact ANSI was instrumental in bringing together Indian government and the Indian private sector standards organizations in a first ever trilateral MOU with ANSI.

Such efforts at transparency and inclusiveness are critical to the competitiveness of U.S. industry – and SME’s in particular – in the global market. Standards and technical barriers to trade (along with IPR issues), are consistently listed by U.S. companies of all sizes as the chief impediments to furthering U.S. trade exports. But when used effectively, consensus-based international standards are not an obstacle – they are part of the solution. Together with effective conformity assessment solutions, they have the capacity to remove barriers to trade and fuel business growth for large and small companies.

While large corporations may have the resources to develop global strategies and to overcome barriers to trade, SMEs often lack such in-house abilities. ANSI has worked closely with NIST in developing an online StandardsPortal (www.standardsportal.org) that provides the key information needed to help U.S. SMEs – and all companies – compete effectively in emerging markets such as China, India, and Korea.

The StandardsPortal is an incredible free resource for U.S. exporters, as well as for those nations looking for guidance in best practices in standards development. It helps companies answer such questions as:

- * What technical requirements must my product meet to enter and compete in this particular market?
- * How can I get early warning about changes to these requirements?
- * How can I ensure that my company’s perspectives are heard and considered in the development of national requirements and policies that could affect my business?

ANSI also offers our members the guidance of an ongoing Manufacturers’ Roundtable for companies doing business in and with China. And we work extensively with Indian officials as part of our U.S.-India Standards and Conformance Cooperation Program, among other initiatives, to facilitate trade and increase transparency between the U.S. and India.

2. *Do you have any concerns about outdated standards in the United States? Do any of these standards inhibit innovation? Is there anything the federal government can and should do better to ensure that all existing standards are relevant and workable for industries and consumers today?*

Market-driven and sector-specific, our national standards system is fueled by private-sector standards developers that have the technical expertise, speed, and responsiveness needed to find robust, consensus-based solutions to national priorities.

Because the system is driven by marketplace needs, ANSI does not have major concerns about outdated standards in the United States. If a standard is outdated or no longer relevant, it tends to organically fall out of use as stakeholders turn to an updated or different solution.

However, federal agencies that reference such standards in rules and regulations may not be able, for procedural or other reasons, to make timely updates to rules that accommodate changes in the referenced standards. This may even be the case when the agency's own analysis supports the use of the updated standard for the purpose of the rule. In other cases, regulated industries, especially small and medium-sized enterprises (SMEs), prefer the older methods because they are unable to update their own equipment to meet the newer standard. Currently there does not seem to be enough flexibility to enable agencies to meet the regulatory needs and make use of updated standards without imposing an extraordinary burden on the agency. At times this situation can create difficulties where an agency continues to reference a particular standard that has been superseded. Such a situation may create confusion and frustration for manufacturers and purchasers. This may also impede an agency's ability to enforce its health and safety mandates and ensure that only the safest and most-improved products are available (i.e., those that reflect the most recent revision of a standard).

ANSI would encourage the U.S. government to work closely with the private sector to get information about new revisions¹, promoting a process that facilitates more regular updates to those regulations and mandates that make reference to current voluntary consensus standards.

Often an agency must follow a laborious rule-making process to recognize a revision of an accepted standard. ANSI recommends an alternative approach, namely, the adoption of a rule of construction that would give an agency 90 days after the promulgation of a revision of a referenced standard to update the Code of Federal Regulations (CFR). If the agency does not do so within the 90-day period, it will be presumed that the revision of the standard would be accepted as the new standard. An agency could create a due diligence requirement that such a revision has to be noticed in the Federal Register for 30, 60, or 90 days. If no significant opposition has been heard, the revision becomes the new standard. A number of agencies have successfully used this approach.

¹ **Standards Action** is ANSI's key public review vehicle, which is published weekly and is freely available by subscription, or at www.ansi.org/standardsaction. Also included is information on draft American National Standards, governmental and foreign standards, and conformity assessment activities.

Responses by Mr. Philip Wennblom, Director of Standards, Intel Corporation



March 30, 2012

The Honorable Ben Quayle
2321 Rayburn House Office Building
Washington, DC 20515
Attention: Melia Jones

Dear Chairman Quayle,

Thank you again for the opportunity to testify at the February 29, 2012 hearing of the Subcommittee on Technology and Innovation. In response to the questions for the record, I would like to submit these additional comments.

Even well intentioned technical regulations can act as non-tariff barriers and can be a significant market access issue in countries around the world. When voluntary standards are referenced in regulation or made mandatory via other means, the possibility for unwarranted interference with market access exists. Intel works with other companies in our industry and with the United States Trade Representative and the National Institute of Standards and Technology to monitor new regulations and to address barriers to trade.

Efforts to address non-tariff barriers often rely on trade agreements for effective resolution, so it is also important that those agreements be strengthened and improved over time. For example, the provisions in the WTO Agreement on Technical Barriers to Trade (TBT) Agreement dealing with the submission of sensitive business information to conformity assessment bodies are weak. Those provisions need to be strengthened in light of increasing demands by regulators in the large emerging markets such as India, China and other countries for extensive product content and design information for certification purposes. Those demands have been made in the telecom and environmental areas, among others. The governments of those countries often require more information than they need because they do not have experience with the technologies they are trying to regulate. The problem is that

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they also do not have robust trade secret protections in place that safeguard sensitive information given to them, which means it can unintentionally leak out to competitors. The way to minimize the potential for the loss of valuable U.S. trade secrets is to establish a more detailed process as part of the TBT Agreement, and/or in bilaterals the U.S. government negotiates, which, among other requirements, places the burden on the government to justify any information requests and imposes penalties on officials for failure to safeguard such information.

It's very difficult to quantify the overall economic impact of non-tariff trade barriers. Each situation requires unique analysis; much of the necessary data is proprietary and often involves forecasts and estimates. Sometimes it is only necessary to determine that the potential impact is large enough to warrant taking action, so a complete assessment may not be completed before the issue is addressed.

While individual states may have specific technical regulations, for example in the area of energy and the environment, most standards that Intel relies on are globally adopted. Because the information and communications technology (ICT) market is global and relies on global supply chains, we strongly prefer standards that are global. It is a significant complication to comply with different technical regulations in countries around the world. Therefore, for technical regulations, Intel encourages harmonization or alignment across and within countries, but in many areas this is difficult to achieve.

The United States has a strong standards setting system that has been very successful, particularly in the ICT sector. Some ICT standards setting organizations that are based in the U.S. have become global organizations. For those organizations to be recognized globally, they must either partner with a recognized international standards setting organization or demonstrate that they meet the same principles. The relevant principles are outlined in Annex 4 of the Second Triennial Review of the Operation and Implementation of the TBT Agreement: transparency, openness, impartiality and consensus, effectiveness and relevance, coherence, and development dimension. In particular, standards setting organizations should make proactive efforts to encourage participation from all interested parties worldwide. Even when a standards setting organization embraces the TBT principles, many countries are reluctant to recognize that it is an international standards setting organization, which could be an area where additional advocacy from industry and government would be helpful.

To avoid harm to industry and consumers from outdated international standards, both industry and the U.S. government have a responsibility to participate actively in development and maintenance activities. This is a substantial activity requiring commitment of many experts but it is essential.

Regarding outdated standards, many standards setting organizations have procedures to ensure regular review and revision of standards to ensure they remain relevant or are withdrawn – this is one of the principles described in the Second Triennial Review.

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A key benefit of the voluntary standards system is that when a standard is not useful, it is not used. What's most important is that industry and government work together to create the standards that are needed, and ensure that standards are mandated in regulations only where it is essential to protect the public interest.

Thank you again for the opportunity to provide these additional comments.

Respectfully,

A handwritten signature in black ink, appearing to read "Philip Wennblom".

Philip Wennblom
Director of Standards, Global Public Policy
Intel Corporation

Responses by Mr. Mark Grimaldi, Owner, Equinox Chemicals
QUESTIONS FOR THE RECORD
THE HONORABLE BEN QUALYE (R-AZ)
U.S. House Committee on Science, Space, and Technology
Subcommittee on Technology and Innovation

1. How do trade associations and technical committees ensure balanced input and participation from all stakeholders?

Trade associations, in my experience, do a great job of soliciting input from a representative cross section of members. A great example is SOCMA. I have also found that good trade associations that do not have their own internal agenda, but sincerely work for their members, work hard to ensure that they represent everyone as much as possible. There is no easy way to ensure a balanced input process, as it is difficult for trade associations to always understand the needs or input from every member, so there is always a level of subjective or selective collection of input and then representation from trade associations. This is why we remain active in our trade associations, and work to ensure that we have the best trade association leadership in place to represent our own and our industry wide interests.

Technical committees are very important and when they openly seek and value all the participants' input, they can be very productive. Another key part of having a productive technical committee is ensuring that all of the contributing members are qualified to participate, and have the right intentions. We work hard to participate in technical committees, but we also look very carefully at the other participating members and try to ensure that we can add value to the committee before participating. The committee has to be formed with the proper charter to ensure that it does not get bogged down in distracting issues, and at the same time captures everyone's input. This is almost always accomplished with good leadership and a clear objective.

2. How have non-tariff barriers to trade impacted your company's ability to innovate and compete in foreign markets? What have been the consequences for your company in terms of barriers to entry, or delays to specific timelines and product launches?

NTB's are one of the most significant impacts to our business and to our ability to innovate. We are particularly struggling in the EU right now with barriers like REACH that drastically curtail innovation and our ability to quickly enter that market with new innovation, which not only impacts our long term

competitiveness, but also creates unfair competitive advantages for local companies. The follow-on to this is that now other countries around the world are adopting similar regulations as a "me too" fix and this only magnifies the issues instead of addressing them at the source. We have had several recent product launches over the last three years that have been delayed by as much as 12-24 months due to these regulations. So this not only impacts our ability to compete, but it hurts the consumer and the global market by not letting the best products enter the market in a timely fashion. In our case, we had safer and more environmentally friendly products that could have significant positive impacts on both individual's and entire communities.

3. Complying with multiple standards among the 50 states as well as Federal and international standards adds a significant amount of redundancy and complication to your business. How do your companies deal with the challenge of differing standards, while remaining competitive in the international market? What should U.S. standards development organizations do to ensure that we continue to lead the way in developing globally accepted standards?

This continues to be an ongoing issue and ever increasing expense for us. It is particularly difficult for small and medium businesses to afford the ever increasing burden of multiple standards across the globe. We work very hard to comply with as many standards as possible, but at the end of the day we have to pick and choose the standards that impact our business the most in particular markets, and focus our resources.

This creates an unfair advantage to larger companies that can afford to have entire departments that handle standards across every market. We currently do a good job of focusing our efforts, but it is becoming increasingly hard to complete and will eventually force us to focus our efforts on fewer key markets. It is critically important that the US continue to lead standards development. If not, we will lose our ability to compete in a global market place. The US needs to continue to work closely with trade associations and to seek balanced input from stakeholders.

4. What steps can the U.S. government and industry stakeholders take to improve established international standards that are outdated and may be harming industry and consumers?

The US government needs to continue to work closely with trade associations and to seek balanced input from stakeholders.

QUESTIONS FOR THE RECORD
THE HONORABLE RANDY NEUGEBAUER (R-TX)
U.S. House Committee on Science, Space, and Technology
Subcommittee on Technology and Innovation

1. What can Congress, NIST, and other federal agencies do to respond to countries that intentionally or unintentionally use standards as non-tariff trade barriers? From an economic perspective, is there any way to quantify the harm these technical trade barriers cause to American exporters? What countries are the worst offenders of these barriers to trade?

The US government needs to stand up for US based businesses and put pressure on countries that blatantly create these NTB's. This is a very complex issue and there are as many solutions as there are ramifications to implementing those solutions. I don't think there is a single answer for all of the NTBs. We can very easily quantify the impact to our business, and do on a regular basis in our business plans. From my perspective, the worst offender and the one that has the largest impact on our business is REACH in the EU, along with all of the copy cat REACH regs that are now showing up in other regions and countries outside of the EU.

2. Do you have any concerns about outdated standards in the United States? Do any of these standards inhibit innovation? Is there anything the federal government can and should do better to ensure that all existing standards are relevant to workable for industries and consumers today?

Our current business is not significantly impacted by any outdated standards in the US. The US needs to continue to lead the rest of the world in the standards setting process. I also think the US needs to become more aggressive in responding to standards in other countries that create NTBs.

Responses by Mr. James Seay, President, Premier Rides

**QUESTIONS FOR THE RECORD
THE HONORABLE BEN QUALYE (R-AZ)
U.S. House Committee on Science, Space, and Technology
Subcommittee on Technology and Innovation**

*Promoting Innovation, Competition, and Economic Growth: Principles for Effective
Domestic and International Standards Development*

Wednesday, February 29, 2012

1. How do trade associations and technical committees ensure balanced input and participation from all stakeholders?

Response (Mr. Jim Seay):

As a not-for-profit organization whose standards development procedures are fully accredited by the American National Standards Institute (ANSI), ASTM ensures balance of interest through regulations concerning the establishment and operations of our technical committees - including criteria for ensuring a balance of interest within the voting membership. The regulations stipulate voting procedures, provide detailed requirements for the consideration of all negative votes, and define balance of interest as a requirement to ensure due process in the development of consensus documents. It is of note that at an ASTM F24 meeting, it is not uncommon that the majority of time is often spent on input representing a minority of stakeholders. And this process often results in a more educated final product. This balance of interest is required to produce meaningful standards that have broad global application.

2. How have non-tariff barriers to trade impacted your company's ability to innovate and compete in foreign markets? What have been the consequences for your company in terms of barriers to entry, or delays to specific timelines and product launches?

Response (Mr. Jim Seay):

The standards policies of other countries and regions are more restrictive and can result in U.S. companies (including small companies like mine) having to comply with unfamiliar technical standards that were developed with limited U.S. input. Rather than utilizing the most advanced standards preferred by some U.S. industries, certain foreign governments dictate that international standards can only emanate from organizations such as ISO and IEC where countries are represented by a single "national body" organization.

While it is possible for European standards to make reference to existing standards from ASTM and other standards bodies allowing some limited level of acceptance, there is currently no legal mechanism that exists in the European regulatory infrastructure to

allow standards from U.S. domiciled organizations to achieve the same acceptability as European standards or ISO standards. To this point, the U.S. government should engage their European Commission counterparts and recommend that they incorporate the international standards principles outlined in the Decision of the WTO TBT Committee into its legal framework and, in the context of Europe's New Approach to Technical Harmonization and Standardization, extend the presumption of conformity to any standard that fulfills the essential requirements of a Directive and is developed in accordance with these principles. Implementing this internationally agreed-upon approach would have far-reaching and significant effects to enhance the competitiveness of U.S. companies that trade internationally. Fast moving areas involving advanced technologies stand to benefit the most from the ability to utilize a broader array of international standards through lower costs and less time spent in developing standards.

3. Complying with multiple standards among the 50 states as well as Federal and international standards adds a significant amount of redundancy and complication to your business. How do your companies deal with the challenge of differing standards, while remaining competitive in the international market? What should U.S. standards development organizations do to ensure that we continue to lead the way in developing globally accepted standards?

Response (Mr. Jim Seay):

ASTM International Committee F24 includes regulators (including 20 U.S. state regulators), inspectors, engineers, technicians, designers, owner/operators and other interested parties. These professionals come from Australia, Brazil, Canada, France, Germany, India, Italy, Japan, Russia, Switzerland, the United Kingdom, and the United States. Many of the regulators from around the world serve on the ASTM committee because the ASTM standards are the most utilized technical documents that ensure safety and efficiency in the amusement industry. Working with companies, trade associations and governments, ASTM International helps to promote their technical standards globally based on WTO TBT Agreement principles.

One way in which ASTM conducts promotion is through their Memorandum of Understanding (MOU) program which facilitates communication between ASTM and national standards bodies worldwide, fostering awareness of the standardization systems of all parties involved. The exchange facilitates the development of standards that will aid each country's health, safety, environmental, and economic conditions. These agreements help avoid duplication of effort where possible and mutually promote the standards development activities of ASTM and the national standards bodies participating in the program. As a benefit of the MOU program, technical experts from any of the countries where MOUs have been signed can participate freely as full voting members in the ASTM standards development process.

4. What steps can the U.S. government and industry stakeholders take to improve established international standards that are outdated and may be harming industry and consumers?

Response (Mr. Jim Seay):

Presently 42 of the 50 U.S. states have permanent amusement rides and many of these states incorporate all or part of the F24 standards in their regulations. Regulators should employ a process to review standards as they are revised to ensure that references to standards incorporated into regulations do not become outdated.

At the Federal level, references to voluntary consensus standards in regulations often are out of date as Federal agencies fail to update their references on a timely basis. While standards are often revised to reflect changes in technology or new industry practices, the older versions of the standard remain embedded in regulation unless or until an agency has the ability to work through the administrative process to adopt the more recent version of the standard. The Administrative Conference of the United States recently examined this issue and as action number 11 of Administrative Recommendation 2011-5 recommended that "Congress should consider authorizing agencies to use streamlined procedures to update incorporations by reference".

QUESTIONS FOR THE RECORD
THE HONORABLE RANDY NEUGEBAUER (R-TX)
U.S. House Committee on Science, Space, and Technology
Subcommittee on Technology and Innovation

*Promoting Innovation, Competition, and Economic Growth: Principles for Effective
Domestic and International Standards Development*

Wednesday, February 29, 2012

1. What can Congress, NIST, and other federal agencies do to respond to countries that intentionally or unintentionally use standards as non-tariff trade barriers? From an economic perspective, is there any way to quantify the harm these technical trade barriers cause to American exporters? What countries are the worst offenders of these barriers to trade?

Response (Mr. Jim Seay):

From the standpoint of NIST, they have procedures and processes in place that assist in educating international business partners on the availability of and access to high level standards. Standards are often deemed critical when the environment is such that standards solve a perceived short coming in the regulatory environment. A Federal approach to encourage the adoption of high level standards like ASTM F24 when appropriate could be very beneficial to U.S. manufacturers who execute their work at a high level of quality. As an example, in Bolivia, recent accidents that included fatalities highlighted the poor quality of equipment due to low or non safety standards. ASTM is working to encourage adoption, but Federal assistance combined with NIST support would be very helpful.

2. Do you have any concerns about outdated standards in the United States? Do any of these standards inhibit innovation? Is there anything the federal government can and should do better to ensure that all existing standards are relevant and workable for industries and consumers today?

Response (Mr. Jim Seay):

The standards policies of other countries and regions are more restrictive and can result in U.S. companies (including small companies like mine) having to comply with unfamiliar technical standards that were developed with limited U.S. input. Rather than utilizing the most advanced standards preferred by some U.S. industries, certain foreign governments dictate that international standards can only emanate from organizations such as ISO and IEC where countries are represented by a single "national body" organization.

While it is possible for European standards to make reference to existing standards from ASTM and other standards bodies allowing some limited level of acceptance, there is currently no legal mechanism that exists in the European regulatory infrastructure to allow standards from U.S. domiciled organizations to achieve the same acceptability as European standards or ISO standards. To this point, the U.S. government should engage their European Commission counterparts and recommend that they incorporate the international standards principles outlined in the Decision of the WTO TBT Committee into its legal framework and, in the context of Europe's New Approach to Technical Harmonization and Standardization, extend the presumption of conformity to any standard that fulfills the essential requirements of a Directive and is developed in accordance with these principles. Implementing this internationally agreed-upon approach would have far-reaching and significant effects to enhance the competitiveness of U.S. companies that trade internationally. Fast moving areas involving advanced technologies stand to benefit the most from the ability to utilize a broader array of international standards through lower costs and less time spent in developing standards.