UNITED STATES STANDARDS STRATEGY

TRANSPARENCY · OPE... ...IMPAR...
EFFECTIVENESS A... ...EVANCE · ...
CONSENSUS · PE... ...ANCE BASE...
COHERENCE · DU... ...ROCESS · TECH...
ASSISTANCE · FLE... ...TIMELY · BAL...

ANSI
American National Standards Institute

The United States Standards Strategy (USSS) is a revision of the *National Standards Strategy for the United States (NSS)* that was originally approved in August 2000. The Strategy affirms that the U.S. is committed to a sector-based approach to voluntary standardization activities, both domestically and globally. It establishes a standardization framework built upon the traditional strengths of the U.S. system—consensus, openness, and transparency—while giving additional emphasis to speed, relevance, cross-sector interactions and dependencies, and the needs of public interest constituencies. The strategic and tactical initiatives contained within this framework are developed so they can be referenced by diverse interests to meet their own national and individual organizational objectives.

The *Strategy* has been developed through the coordinated efforts of a large and diverse group of constituents representing stakeholders in industry, standards developing organizations, consortia, consumer groups, government, and academia. Throughout each revision cycle, participants expressed a commitment to developing the USSS in a way that was open, balanced, and transparent. The result is a document that represents the vision of a broad cross-section of standards stakeholders, reflecting the essential diversity of the U.S. standards system.

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Weights and measures may be ranked among the necessaries of life to every individual of human society. They enter into the economical arrangements and daily concerns of every family. They are necessary to every occupation of human industry; to the distribution and security of every species of property; to every transaction of trade and commerce; to the labors of the husbandman; to the ingenuity of the artificer; to the studies of the philosopher; to the researches of the antiquarian; to the navigation of the mariner, and the marches of the soldier; to all the exchanges of peace, and all the operations of war. The knowledge of them, as in established use, is among the first elements of education, and is often learned by those who learn nothing else, not even to read and write. This knowledge is riveted in the memory by the habitual application of it to the employments of men throughout life.

- John Quincy Adams, from the Report on Weights and Measures by the Secretary of State, made to the Senate on February 22, 1821

Standards are the infrastructure for innovation, a critical component in bringing technologies from the lab to the market. Standards create a common language for trade and improve quality of life by enhancing safety, security, interoperability and the environment.

- Dr. Walter G. Copan, Under Secretary of Commerce for Standards and Technology and Director of the National Institute of Standards and Technology, 2020

INTRODUCTION

Standards are more essential today than at any other time in our nation's history.

While the standards environment has changed since the inception of the *United States Standards Strategy* 20 years ago, voluntary consensus standards continue to be at the foundation of a sound U.S. economy, secure critical infrastructure, and public health and safety.

The United States is a highly diversified society with a market driven economy, and its standards system reflects this diversity, encompassing multiple and varied standards sources. The system produces standards that are consistent with the principles of the World Trade Organization (WTO) Agreement on Technical Barriers to Trade (TBT) and the WTO TBT Committee Decision on international standards.

The U.S. standards system promotes the public good, elevates national health and safety, drives innovation and U.S. competitiveness, and contributes to a fairer and more liberalized global trading system. The public and private sectors provide the people, resources, technical contributions, and intellectual vitality that underpin the U.S. standards system. The active involvement of industry and government at all levels (i.e., federal, state, and local), is key to both the vision and implementation of a standards strategy for the United States.

The American National Standards Institute (ANSI) is the coordinator of the U.S. private-sector voluntary standardization system and the official U.S. representative in regional and non-treaty international standards development bodies – the International Organization for Standardization (ISO) and, via its U.S. National Committee, the International Electrotechnical Commission (IEC). ANSI brings together a cross-section of public- and private-sector interests to reexamine the principles and strategies that guide how the U.S. develops and uses standards and participates in the international standards development process.[1]

This *United States Standards Strategy* provides a vision for the future of the U.S. standards system in today's globally competitive economy.

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1   While it is recognized that the assessment of conformity to standards plays an essential role in the standardization system, the *United States Standards Strategy* focuses solely on standards and does not address the many complexities associated with conformity assessment. See the *United States Conformity Assessment Principles* at **www.ansi.org/uscap**.

STRATEGIC INITIATIVES

The following twelve strategic initiatives are embraced in the *United States Standards Strategy:*

1. Strengthen participation by government at all levels in the development and use of voluntary consensus standards through public-private partnerships.

2. Continue to address the environment, health, safety, and sustainability in the development of voluntary consensus standards.

3. Improve the responsiveness of the standards system to the interests of consumers.

4. Actively promote the consistent worldwide application of internationally recognized principles in the development of standards.

5. Encourage common approaches by governments to the use of voluntary consensus standards as tools for supporting regulatory needs.

6. Work to prevent standards and their application from becoming technical trade barriers to U.S. products and services.

7. Strengthen international outreach programs to promote understanding of how U.S. voluntary, consensus-based, market-driven standards can benefit businesses, consumers, and society as a whole.

8. Continue to improve tools for the efficient and timely development and distribution of voluntary consensus standards.

9. Promote cooperation and coherence in standards activities.

10. Promote and encourage a standards-literate workforce by building standards awareness and competence among various communities.

11. Respect diverse funding models for the U.S. standards system.

12. Address the need for standards in support of emerging national priorities.

IMPERATIVES FOR ACTION

Economic, security, and public health challenges continue to raise the stakes in standards development and are straining resources at the national, regional, and global levels.

Competition for technology-driven advantages is increasingly intense, and the impetus to develop globally accepted standards is greater now than ever before.

GLOBALLY

» Rapidly evolving and pervasive technologies present new standards development challenges. Standardization and the manner in which agreements are reached between suppliers and customers continue to evolve and are influenced by advances in technology.

» Concerns associated with privacy and security cut across all sectors and technologies and present additional standards challenges.

» Services-based solutions represent a significant and rapidly growing factor in the global economy. In particular, digital services are growing ever more pervasive, as evidenced by cloud computing, as just one example.

» Laws and policies that protect patents, trademarks, and other intellectual property are not applied universally or rigorously. The standardization process must respect the rights of intellectual property owners while ensuring users have access to the intellectual property rights (IPR) incorporated into standards.

» Maintaining the integrity and impartiality of international standards development processes continues to be a priority.

» An open, rules-based standards system that is participatory in nature is key to enabling worldwide participation of stakeholders and facilitating an innovative environment that reflects changing needs in the global marketplace.

AT HOME

» Investment by public and private sectors in the development of standards is directly related to the health and resilience of the economy. This investment includes research and development (R&D) to catalyze technology breakthroughs that are then incorporated into technical contributions to international standards.

» Users of standards are increasingly aware of their importance and require a U.S. system that can produce and deliver standards with maximum efficiency and minimum cost, while eliminating duplication and optimizing the benefits of a decentralized system.

» Government agencies at all levels continue to rely on voluntary consensus standards to support efficient regulatory activities. While these standards may be incorporated by reference, either in part or in their entirety, these standards must retain their copyright protection.

» A variety of economic forces, including automation and consolidation in many industries, is increasingly disrupting the supply of jobs and demand for new skills. A standards-literate workforce with demonstrated competencies is better prepared to compete for skilled job opportunities as they emerge.

» The national interest in emerging areas of standardization demands a new level of coordination and effort, and will require the development of new ways for public- and private-sector stakeholders to work together in order to advance national competitiveness.

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. The U.S. standards system is based upon the following set of globally accepted principles for standards development:[2]

TRANSPARENCY

Essential information regarding standardization 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 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.

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2   Adherence to these core principles can also mitigate antitrust risk for those engaging in standards development activities.

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.

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.

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

FLEXIBLE,

allowing the use of different methodologies to meet the needs of different technology and product and service sectors; and to meet convergent needs across sectors where technically relevant;

TIMELY,

so that developed standards meet market expectations and timing; and

BALANCED,

among all affected interests.

OUR STRATEGIC VISION

Working from these principles, the U.S. standards community is strongly committed to the following strategic vision for standards development:

GLOBALLY

» Globally accepted principles for the development of international standards are universally applied.

» Governments worldwide participate in standards development and rely on voluntary consensus standards as much as possible in regulation and procurement, in lieu of creating additional regulatory requirements.

» A diverse and inclusive standards system supports flexible solutions to global challenges and priorities, and facilitates international trade and market access.

» Digital tools are used effectively for the optimized development of global standards and to facilitate their dissemination throughout a global economy.

» The *United States Standards Strategy* is promoted internationally in governance and technical programs, as appropriate, by the bodies representing the U.S. to international, governmental and non-governmental organizations.[3]

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3   Examples include: ANSI as the official U.S. member body to the International Organization for Standardization (ISO) and, via the U.S. National Committee, to the International Electrotechnical Commission (IEC). In treaty-based organizations, the U.S. State Department and its preparatory process ensure U.S. viewpoints are advanced at the International Telecommunication Union (ITU).

AT HOME

» A cooperative process involving all interested and affected stakeholders produces standards-based solutions that promote and strengthen U.S. global competitiveness.

» All U.S. interests work together to eliminate unnecessary redundancy and overlap.

» The value of standardization is recognized and supported by public- and private-sector leaders through adequate resources and stable funding mechanisms.

» The U.S. standards system responds quickly and responsibly to provide standards that address national and international needs.

MOVING FORWARD

The strength of standardization in the United States is supported by a dynamic infrastructure.

Standardization activities encompass both sector-specific and cross-sectoral approaches. The focus comes from the participants—industry, government agencies, public interest organizations, and talented individuals—and the standards developers through which they work to meet customer needs. Both sectoral and cross-sectoral approaches allow interested parties to address priority issues and develop working methods that fit the problems at hand since no single path in standards development can satisfy all needs. This allows efficient standards development and fosters innovation and competition. When cross-sectoral issues that require broad stakeholder collaboration arise, the infrastructure provided by the American National Standards Institute provides facilitation and mediation.

In any area of standards development, marketplace diversity means that in many cases there is no simple prescription that can be applied to fit all needs. Communities of interest must develop their own plans; the purpose of this strategy is to provide guidance, coherence, and inspiration without constraining innovation, creativity or effectiveness. The *United States Standards Strategy* consists of a set of strategic initiatives with broad applicability that will be applied according to their relevance and importance to particular sectors and other communities. Today's challenge is to bring these areas of expertise together to address issues that cut across sectors and communities, and to bring together diverse parties to develop standards and roadmaps to address standardization needs. Stakeholders are encouraged to develop their own initiatives where needed, and this strategy suggests some that have widespread applicability.

As new standards opportunities continue to arise, the challenge will be to preserve the strengths of the United States' approach

while developing innovative ways in which standards developers, consortia, and other emerging communities of open collaboration—together with government and industry—can collaborate most productively.

These strategic initiatives are supported by specific tactical initiatives that outline the implementation of the *United States Standards Strategy*:

1. STRENGTHEN PARTICIPATION BY GOVERNMENT AT ALL LEVELS IN THE DEVELOPMENT AND USE OF VOLUNTARY CONSENSUS STANDARDS THROUGH PUBLIC-PRIVATE PARTNERSHIPS

Government reliance on voluntary consensus standards continues to grow. Public Law 104-113, the National Technology Transfer and Advancement Act (NTTAA), and the accompanying Circular A-119 from the White House Office of Management and Budget (OMB) remain the cornerstone at the federal level for promoting the use of voluntary consensus standards in lieu of government-unique standards, while still maintaining flexibility for agencies to best meet their missions. Our vision of the future involves building on our successes in this area and encouraging government, consumers, professional organizations, industry, and other stakeholders to engage standards developers as partners to create solutions to support national and international objectives. The key to such partnerships is participation, which requires support and resources from government policy makers at all levels. Tactical initiatives include:

» **ANSI, standards developers, government, and industry** should partner to identify proposed, coordinated solutions where government interests could be addressed by the use of voluntary consensus standards and work together for a common solution.

» **ANSI, standards developers, government, and industry** should cooperate in identifying solutions that continue to enable reasonable access by affected parties to voluntary consensus standards that are incorporated by reference into codes and regulations while maintaining their intellectual property protection.

» **ANSI and standards developers** should provide state and local governments with ways to identify where their interests are being addressed and mechanisms for participating in relevant standards development activities.

» **ANSI and standards developers** should raise awareness of policy makers of the benefits of standards developed through open, transparent, consensus-based processes and the importance of active participation in their development by relevant stakeholders.

» **The U.S. government** should work with the private sector to address common standards-related needs and, whenever possible, engage actively in the development of standards to address these needs. Greater alignment and coordination between departments and agencies should also be sought where relevant.

» **The U.S. government** should use existing relationships with state and local government and its responsibilities under the NTTAA to support greater use of voluntary consensus standards that deliver favorable technical and economic outcomes and are widely used in the marketplace.

2. CONTINUE TO ADDRESS THE ENVIRONMENT, HEALTH, SAFETY, AND SUSTAINABILITY IN THE DEVELOPMENT OF VOLUNTARY CONSENSUS STANDARDS

Consideration of the environment, health, safety and sustainability has always been a key concern of the U.S. standards system and will continue to be so in the future. It is important to take a balanced approach to ensure that the needs of all stakeholders are considered and that decisions are based on a preponderance of objective evidence. Active participation by government, consumers, professional organizations, and industry in the development of voluntary consensus standards is essential to forge the trust and synergy needed to develop standards that meet society's needs, today and tomorrow. Tactical initiatives include:

» **Standards developers** should establish specific guidance to encourage participants to consider the environment, health, safety, and sustainability as integral aspects of their work.

» **Government** should participate in voluntary consensus standards development efforts to ensure that they meet public policy objectives related to the environment, health, safety, and sustainability.

» **Industry** should participate in standardization activities and consider the environment, health, safety, and sustainability while ensuring that the resulting standards add value and meet market needs.

» **ANSI** should foster consideration of environmental, health, safety, and sustainability requirements in U.S. and international standards where appropriate.

» **Consumers and consumer representatives** should increase participation in the development of voluntary consensus standards to ensure that they meet public objectives related to the environment, health, safety, and sustainability.

3. IMPROVE THE RESPONSIVENESS OF THE STANDARDS SYSTEM TO THE INTERESTS OF CONSUMERS

The representation of consumer[4] interests in the U.S. standards system is essential. Today's consumers are concerned about such issues as product compatibility and interoperability; energy efficiency and sustainability; the quality of products and services; ease of use and accessibility; the environment, health, and safety; deceptive trade practices; privacy; redress; and social responsibility. The continued growth of the online market means more information and more choices are available to consumers. With its emphasis on balance, openness, and transparency, the U.S. standards system provides a valuable forum for the consumer voice to be heard. However, there are challenges to involving consumers in the standards system, and innovative methods need to be piloted and incorporated to encourage and facilitate their participation. Tactical initiatives include:

» **Standards developers** should identify, encourage, and support appropriate consumer representation in their committees; make virtual attendance at meetings possible through electronic means such as teleconferencing or collaborative meeting tools; and actively solicit consumer comment during public reviews.

» **Industry** should use consumer research as one basis for standardization initiatives and decisions.

» **Government** should strengthen its consumer-related programs and provide standards information and participation programs as appropriate.

» **ANSI** should work with consumer organizations to educate them about standardization, and encourage and support their participation in standards development.

» **ANSI, standards developers, government, and industry** should devote efforts and resources to initiatives that help educate the public about the importance of standards to U.S. health, safety, and competitiveness.

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4   Consumers are defined as those individuals who use goods or services to satisfy their individual needs, rather than companies, government agencies, or other organizations that use goods or services.

4. ACTIVELY PROMOTE THE CONSISTENT WORLDWIDE APPLICATION OF INTERNATIONALLY RECOGNIZED PRINCIPLES IN THE DEVELOPMENT OF STANDARDS[5]

A key goal of international standardization is to define requirements that products and services should meet to be acceptable in global markets. To ensure broad acceptance, members of the standards community have made considerable progress in establishing internationally accepted principles on how such standards are to be developed. Our strategy seeks to encourage the consistent interpretation and application of these principles. Tactical initiatives include:

» **The U.S. standards community** should work to improve global relevance by promoting participation in standards processes by a broad cross-section of both domestic and international stakeholders, particularly in markets where the relevant products, services, and systems are used.

» **Stakeholders in the U.S. standards system** should seek, directly or through the U.S. national body where representation is by country, to reinforce the sectoral approach, where relevant, to standards development in regional and international forums and highlight the benefits of this approach, and to encourage cross-sectoral collaboration, where appropriate.

» **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, international regulatory harmonization, and legislative and regulatory approaches.

» **The U.S. government** should support the integrity of the international standards system and strengthen the rules-based processes of relevant organizations.

» **The U.S. government and industry** should strongly and visibly coordinate their work in bilateral, regional, and international forums to promote the consistent interpretation and application of internationally recognized principles on standardization.

U.S. stakeholders participate in standards development bodies around the world to achieve multiple objectives. The goal of all international standards forums should be to achieve globally relevant and internationally recognized and accepted standards that support trade and commerce while protecting the environment, health, safety, and security. To advance this goal, U.S. stakeholders should pursue the following tactical initiatives:

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5   "Internationally recognized principles," including those highlighted in the Principles section of this document, are contained in the WTO Technical Barriers to Trade Agreement and the WTO TBT Committee Decision on Principles for the Development of International Standards. The text can be viewed online at **http://www.wto.org/english/docs_e/legal_e/17-tbt.doc.**

» Promote the consistent application of principles as elaborated in the TBT Agreement for developing standards in international standards development organizations, including the principles on global relevance.

» Work with all stakeholders to ensure that voting procedures in international standards development bodies respect all views.

» Encourage standards development forums to work together to address the need for cross-sector standards for converging technologies that affect the interests of various stakeholder communities.

5. ENCOURAGE COMMON APPROACHES BY GOVERNMENTS TO THE USE OF VOLUNTARY CONSENSUS STANDARDS AS TOOLS FOR SUPPORTING REGULATORY NEEDS

Many standards are developed that support regulatory needs, or are used to do so even if the standards were not initially developed to meet a specific regulatory need. Governmental approaches to regulation, however, often differ, resulting in incompatible national and regional standards that add unnecessary expense and may limit trade. Global commerce will be facilitated if governments apply common approaches to the use of standards as tools to support regulatory needs. Standards developed through a voluntary consensus process have proven effective at meeting both regulatory and market needs in a variety of sectors. Tactical initiatives include:

» **Governments** should be encouraged to adopt compatible approaches to using standards to meet regulatory needs, and partner with all stakeholders to develop standards that have global acceptance.

» **Standards developers and industry** should work with governments to develop voluntary consensus standards that support multi-jurisdictional regulatory needs.

» **ANSI and U.S. government** should work together to improve the understanding among domestic and international stakeholders of the benefits of using voluntary consensus standards in regulation.

6. WORK TO PREVENT STANDARDS AND THEIR APPLICATION FROM BECOMING TECHNICAL TRADE BARRIERS TO U.S. PRODUCTS AND SERVICES

Standards have become more prominent as potential barriers to market access for products and services. Differing standards can significantly raise the cost of exporting to and importing from international markets or even prevent market access. The facilitation of global trade requires that more attention be given to preventing standards and their application from becoming market access barriers and to addressing barriers that do arise. Tactical initiatives include:

» **The U.S. government** should work with its counterparts in other countries and through intergovernmental organizations to ensure that standards facilitate global trade and to minimize potential trade barriers.

» **The U.S. government** should work with other WTO members to seek full implementation of the Technical Barriers to Trade (TBT) Agreement and annexes as well as decisions taken in the WTO TBT committee. No additional principles or criteria other than those in the TBT Committee Decision on International Standards are used in order to recognize a standard as an international standard.

» **Government and industry** should identify and eliminate or minimize the effect of technical barriers to trade that result from technical standards and their application.

» **U.S. private sector and government representatives** should work with their counterparts in other countries to ensure that standardization is not used to develop trade barriers in organizations where representation is on a national basis.

7. STRENGTHEN INTERNATIONAL OUTREACH PROGRAMS TO PROMOTE UNDERSTANDING OF HOW U.S. VOLUNTARY, CONSENSUS-BASED, MARKET-DRIVEN STANDARDS CAN BENEFIT BUSINESSES, CONSUMERS, AND SOCIETY AS A WHOLE

Voluntary, consensus-based, market-driven standards offer enormous benefits to businesses, consumers, and society, facilitating innovation and strengthening economic competitiveness. But this is often not well understood by many outside the United States. U.S. stakeholders should do more to help foreign stakeholders understand the benefits of this approach, which is embodied in the U.S. standards system. Tactical initiatives include:

» **U.S. stakeholders** should promote policies and procedures in international forums that encourage the development of standards that are voluntary, consensus-based, market-driven, and globally relevant.

» **Government and private sector** outreach efforts should be focused on countries that are developing or re-structuring their standards systems and offer important market opportunities.

» **Standards developing organizations** should look to encourage remote/virtual participation. This will facilitate contacts with non-U.S. stakeholders — particularly in developing markets — and will enhance their participation in standards-related activities.

» **ANSI** should play a leadership role in promoting dialogue with foreign standards organizations and in reinforcing outreach efforts of industry, standards developers, the U.S. government, and other stakeholders.

8. CONTINUE TO IMPROVE TOOLS FOR THE EFFICIENT AND TIMELY DEVELOPMENT AND DISTRIBUTION OF VOLUNTARY CONSENSUS STANDARDS

Today, the U.S. standards system is defined by its use of online collaborative tools to support the timeliness, relevancy, and compatibility of standards while maintaining adherence to our principles. In the spirit of process improvement and in response to changing customer needs and evolving new technologies, all stakeholders in the U.S. standards system should continue to work together to build on these successes. Tactical initiatives include:

» **Standards developers** should continue to improve the working processes for voluntary consensus standards development and use state-of-the-art tools to facilitate global participation.

» **Standards developers** should continue to implement consistent processes to validate translated materials and facilitate expeditious global distribution of standards.

» **Industry, government, and consumers** should provide standards developers with feedback on their needs and how well standards developers are meeting those needs.

» **U.S. participants** should encourage similar improvement in the processes and tools used in the organizations where they participate.

» **ANSI** should provide a venue for educating standards professionals on tools for digital literacy.

9. PROMOTE COOPERATION AND COHERENCE IN STANDARDS ACTIVITIES

The diversity of the decentralized U.S. standards system encourages competition and innovation and is responsive to different customer needs. The power of the system lies in a broad spectrum of approaches, flexibility, and collaborative mechanisms. Tactical initiatives include:

» **ANSI** should review its procedures to make sure that standards receiving the American National Standard (ANS) designation are relevant and to ensure that good faith efforts are made to minimize conflict with other standards.

» **ANSI** should proactively engage standards developers and others involved in standards-related activities in constructive, rich conversations related to cooperation and collaboration.

» **The standards community** should consider collaboration and information exchange opportunities to identify areas of need to make standardization processes more efficient and coherent, and formalize agreements as appropriate.

» **Industry, consumers, and government** should proactively engage with multiple standards developers to increase efficiencies in standards development activities and encourage interoperability among products, processes, and systems.

» **Government** should provide timely information on proposed regulatory actions in order to minimize conflict with existing or proposed standards.

10. PROMOTE AND ENCOURAGE A STANDARDS-LITERATE WORKFORCE BY BUILDING STANDARDS AWARENESS AND COMPETENCE AMONG VARIOUS COMMUNITIES

In recognition of the intrinsic role of standards as enablers of innovation, technology commercialization, resilient infrastructure, and U.S. competitiveness, efforts to build a standards-literate workforce should be prioritized in the United States. Standards education programs should be inclusive and address the needs of groups within the United States appropriately. Tactical initiatives include:

» **Standards developers, industry, academia, technical and trade schools, ANSI, and government** should collaborate to develop new or enhance existing standards education programs that build awareness of the value of standards and the standardization process to U.S. prosperity and quality of life. Education, training, and retraining programs should be tailored to relevant audiences, including industry executives, individuals who participate in the development of standards, implementers of standards, university and college students, young and emerging professionals, and other interested parties.

» **Education providers** should develop educational modules or significantly enhance educational resources in collaboration with educational systems that introduce the concept of standards and their importance to younger students (K-12) in an effort to familiarize them with standards activities early on and foster their interest and involvement when they choose a career path.

» **Universities, colleges, and technical and trade schools** should work to incorporate consideration of standards in fields of study such as engineering, health care, science, data science, technology, government and public policy, business, economics, and law.

» **Industry and standards developers** should develop or significantly enhance early- and mid-career training programs that introduce the concepts of strategic standardization and the value of standards and standards professionals to private sector company leaders.

» **All stakeholders** should use information and communications technology to the fullest extent possible to facilitate the development of e-learning and standardization education programs.

11. RESPECT DIVERSE FUNDING MODELS FOR THE U.S. STANDARDIZATION SYSTEM

There is no single method of funding the U.S. standards system, and the U.S. recognizes the need to protect the pluralistic manner in which the standards system is funded. The tactical initiatives that support this strategy focus on the need to educate and influence policy makers and decision makers, and stress the need for the individual organizations that comprise the U.S. system to be able to maintain their various funding models.

Tactical initiatives include:

» **Standards developers** should seek the participation and support of industry and government for voluntary consensus standards development. They should educate public sector policy makers, corporate leadership, and consumers on the value of the diverse U.S. standards system, including their roles in the support of the National Technology Transfer and Advancement Act.

» **Industry** should support standards development through participation of their experts, funding of research, and sharing of information useful in defining and setting standards requirements. They should also utilize and support the use of standards to produce goods, provide services, install products, and conduct all other aspects of business activity in their respective sectors.

» **Government** should advance and respect policies at home and abroad that ensure the continued ownership and control of the copyrights and trademarks of standards developers, including material incorporated by reference and the protection of intellectual property contributed in the standards development process.

- » **Government** should provide financial and legislative support and promote the principles of our standards system globally. Global competitiveness of U.S. industry depends critically on standardization, particularly in sectors that are technology-driven.

- » **Governments** at all levels, in their consideration of policies and legislation, should recognize the societal benefits of standards development organizations and their role in public health and safety; enable participation of their experts; and share information useful in defining and setting standards requirements. They should also utilize and support the use of standards to meet regulatory and procurement requirements.

- » **All elements of the U.S. standards system** should support policies that allow U.S. standards developers to participate in international standards development activity without jeopardizing intellectual property rights in their standards and that recognize the flexible funding models that exist within the United States. These funding models are critical to the continued effectiveness, responsiveness, and strength of the U.S. standards system.

12. ADDRESS THE NEED FOR STANDARDS IN SUPPORT OF EMERGING NATIONAL PRIORITIES

The U.S. standards system has contributed significantly to meeting a diverse range of private- and public-sector needs in a variety of industries and in response to emerging national and international concerns. With the rise of cyber and other security threats, public health emergencies, as well as increasing competition in global markets, the U.S. standards system must be prepared to respond to emerging national priorities as they are identified. Tactical initiatives include:

- » **Government** at all levels should seek early collaboration with industry and standards developers to identify standards needed to meet emerging national priorities.

- » **ANSI** should continue to rise to the challenge in emerging technology areas by creating standardization collaboratives that bring together all affected interests, both public and private sectors, to achieve maximum impact for standards efforts.

- » **Standards developers** should proactively identify standards work in existence, underway, or that could be initiated that could support emerging national priorities.

- » **Industry** should participate actively in efforts to identify needed standards and in the timely development of those standards.

- » **Government, industry, and standards developers** should be proactive in addressing international implications of standards in support of national priorities.
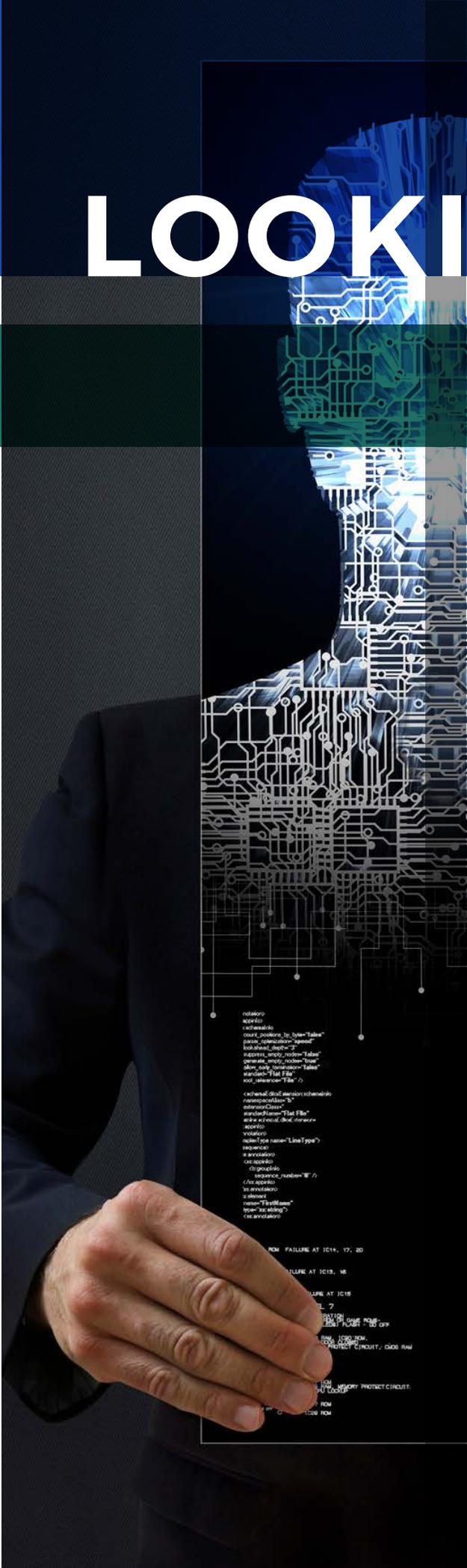
LOOKING AHEAD

This document represents an architecture for achieving goals.

The proof of this strategy will lie in the achievement of those goals. In that sense the document is also a challenge to all those involved in the U.S. standards system—and those who are not currently involved but affected by it—to make the vision a reality. This will happen only when the architecture is translated into action. What hangs in the balance is the competitiveness of U.S. industry, the vitality of the U.S. economy, a balanced global trading system, and the health, safety, and well-being of citizens.

The next steps will engage all concerned in the implementation of this strategy. Tactical issues must be addressed. This will require communication, cooperation, planning, and a commitment to action. In the longer run progress must be measured, and this strategy, like all plans made within the constraints of time, must be revisited and reevaluated. The American National Standards Institute will continue to serve as a mechanism for coordinating and updating the strategy at five-year intervals.

Open and accessible, the U.S. standards system has contributed its technology, in gigantic proportions, to other standardization models and to other societies. It is committed, not only to interests within its own territory, but to international standardization, and to a global trading system that is balanced and without obstacles. This strategy is designed to strengthen the standards system of the United States and all who benefit from it.