CableLabs®
Cable Television Laboratories, Inc.

Standardization Feedback for Sub-Committee on Standards
Docket No. 0909100442-0563-02

Comments of Cable Television Laboratories, Inc.
March 7, 2011

Cable Television Laboratories, Inc. (CableLabs®) welcomes this opportunity to submit comments in response to the National Institute of Standards and Technology's request for information on the effectiveness of Federal agencies' participation in the development and implementation of standards.[1]

CableLabs is a non-profit research and development consortium of cable television system operators that is dedicated to pursuing new cable telecommunications technologies and to helping its cable operator members integrate those technical advancements into their business objectives. CableLabs was incorporated under the National Cooperative Research and Production Act, which encourages research and development among companies in order to strengthen the competitiveness of the United States in the world marketplace. CableLabs' specifications are developed through an open process with input not only from cable operators, but also from more than 500 consumer electronics, IT, software, content, and other companies, as well as the public. CableLabs does its work cooperatively with manufacturers and developers so that the resulting specifications reflect what manufacturers can actually build for the commercial marketplace. CableLabs also performs certification testing for equipment built to its specifications. CableLabs

[1] Department of Commerce, National Institute for Standards and Technology, Request for Information in Docket No. 0909100442-0563-02, 75 Fed. Reg. 76397 (Dec. 8, 2010). The time for comments was extended in Request for Information, Extension of Comment Period, 76 Fed. Reg. 3877 (Jan. 21, 2011).

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testing follows published, objective tests drafted in cooperation with manufacturers, administered by trained professionals, subject to quality assurance, a review panel, and an appeals process. CablcLabs processes have been emulated by the WiMAX Forum for wireless broadband and other organizations.

After reviewing the market-driven, innovation-inducing approach which currently animates U.S. standards-setting policy, CableLabs offers three case studies of the public-private standards-setting process in order to illustrate three different approaches and lessons learned from those approaches for future U.S. policy.

I. CURRENT STANDARDS POLICY ALLOWS RAPID MARKET INNOVATION BY FAVORING VOLUNTARY CONSENSUS STANDARDS OVER GOVERNMENT PRESCRIPTION

One of the great strengths of U.S. policy, and one which distinguishes it from foreign regimes, is to embrace a market-driven, innovation-inducing environment by avoiding top down government prescription and allowing voluntary consensus standards to emerge—including multiple, competing approaches to similar technological challenges. The National Technology Transfer and Advancement Act (NTTAA) calls for Federal government agencies to use commercially developed "voluntary consensus standards" unless doing so would be against the law or otherwise impractical. OMB Circular A-119 endorses consortia, informal multi-company standards, development activities (including those that implicate "patent pools"), and even single-enterprise standards-setting activities as on the same footing as formal standards-setting organizations in meeting Federal government requirements for "voluntary consensus standards." A flexible approach enables rapid innovation, competition, and consumer choice.[2]

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[2] *See, e.g.*, Phil J. Weiser, *Making the World Safe for Standard Setting*, Univ. of Colorado Law Legal Studies Research Paper Series, Working Paper No. 08-06, at 7, 35 (July 27, 2007; revised October 13 2008) (quoting

Different technologies compete with each other for marketplace dominance. In the cable, video, and entertainment space alone, we have many examples. Dolby competes with DTS audio formats; multiple video codecs compete with each other; different image formats are optimized for different purposes (low memory, detail, faster video processing, etc.); and multiple approaches compete for home networking. MVPDs (Multichannel Video Program Providers, i.e., cable, satellite and telcos) and new entrants alike (for example, online video distributors) engage in service and equipment differentiation and use complex interactions between networks and access devices to innovate quickly and deliver new features to consumers. They do so using different technology, but rapid innovation by one spurs competitive response by others in the market. For example, satellite uses QPSK; cable responds with QAM, DOCSIS 3.0, and tru2way®. Verizon devotes an entire fiber wavelength to its linear video offering and goes all-digital; AT&T switches all channels to gain bandwidth; cable responds with switched digital video of its own. Consumers seek video on tablets and other IP devices, and each MVPD creates applications to make its services available to them and in other new ways. Standards emerge over time as the marketplace and consumers, not the government, make their preferences known. That competition, and continued innovation, also fuels job growth. If, at any time, a single standard had been mandated, that rapid innovation and the human resources required to develop innovative solutions could have been squelched.

From a standards perspective, this means that Federal agencies should continue to prefer voluntary consensus standards to governmentally prescribed standards, and should continue to put consortia, informal multi-company standards, development activities, and other standards-setting activities on the same footing as formal standards-setting organizations. Technologies in

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Clinton Administration praise for the model of private standard setting and conclusion that it was "unwise and unnecessary for governments to mandate standards for electronic commerce"), *available at* http://ssrn.com/abstract=1003432.

use across MVPD, media and IT companies—including UPnP, DTCP, Ethernet, DLNA, HTML, MoCA, and MPEG—are not ANSI-accredited standards. CableLabs works actively with such organizations, in order to develop solutions that can be broadly adopted. For example, CableLabs is an active participant at DLNA with cable, satellite, telephone, and CE participants, developing home networking approaches. In turn, one of DLNA's strengths is to strive for guidelines incorporating multiple, rather than exclusive, solutions. For example, it has defined multiple content protection technologies, content formats, output interfaces, and IP transport protocols, rather than setting a single standard. This is sufficient to obtain widespread interoperability, but allows for the reality of network differentiation, a variety of services and approaches, and the need for manufacturers to serve the changing marketplace and a variety of consumer tastes and devices.

Many creative solutions are often initially developed as proprietary implementations in business ventures, consortia, and incubating "founder" groups. From that initial entrepreneurial effort, the de facto best solutions may then later be brought to well-established specifications development bodies, ANSI-accredited standards organizations, or even ITU world standards bodies. It is common in technology to allow design to evolve from competing solutions to specifications and then eventually to move specifications into standards. This is how CableLabs has designed the cable specification development process.

The real test for the success of standards processes is not whether a standard emerges from one particular standards body rather than another, but the extent to which it ultimately gets marketplace adoption. For that purpose, variety is essential. For example, some would argue that the U.S. decision to allow deployment of CDMA (and competing mobile phone standards) preserved CDMA for later incorporation into multimedia 4G, for which its bandwidth

technology is better suited than GSM. As another example, early (French) efforts to legislate DRM interoperability in order to "open" the iPOD were halted. The result in music was enormous investment by competitors into competing platforms, a change in Apple's practices, and greater consumer choice. In video, one result is Ultraviolet, a system designed to break down video silos by embracing multiple DRMs and thereby serve the vast array of devices in consumer hands.[3]

The communications, media, and information technology fields with which we are most familiar are characterized today by an innovation "life cycle." At first, experimentation is diverse and seemingly chaotic, often uses proprietary solutions to respond to marketplace and consumer demands, and is marked by multiple successes and failures. Later, with experimentation, directed field trials, or use cases, targeted consumer input is gathered. One or more solutions may actually reach the consumer market, but still often in proprietary form. As companies seek to reduce costs, generalize solutions, diversify vendors and broaden adoption, common interoperability specifications may be appropriate in specific targeted areas, such as interfaces or lower level architecture. After much of the innovation and experimentation has been allowed to occur in the open marketplace, standards or common specifications may play a role. In our experience, premature standardization can short circuit innovation and shortchange consumers.

Allowing multiple approaches in standards also provides choices in intellectual property. CableLabs, like many voluntary standards organizations, establishes an IP policy to avoid "hold

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[3] *See* Press Release, Digital Entertainment Content Ecosystem (DECE) LLC, *Digital Entertainment Content Ecosystem (DECE) Completes Design Of Ultraviolet™* (Jan. 6, 2011), *available at* http://www.uvvu.com/press/CES_JAN_6_2011_Press_Release_1_5_11_FINAL.pdf; Press Release, Digital Entertainment Content Ecosystem (DECE) LLC, *Digital Entertainment Content Ecosystem Unveils UltraViolet™ Brand* (July 20, 2010), *available at* http://www.uvvu.com/press/UltraViolet_Brand_Launch_Release_07_20_2010_FINAL.PDF.

up" IP situations. We have utilized both RAND (reasonable and non-discriminatory) and royalty-free terms in order to reduce the risk of IP "hold up" and thereby promote development and implementation of a common specification. But we do not believe that there is a single IP answer for all standards and all implementations. Some may call for royalty-free, some may call for RAND, some may take the further step of setting up patent licensing pools (as we did with MPEG-2 and OCAP). Allowing multiple voluntary standards solutions also allows the market to offer a choice of IP approaches. Addressing private commercial IP rights is something the government is not generally equipped to handle.

Three case studies of the public-private standards-setting process will illustrate the wisdom of continuing this flexible approach.

II. LAWFUL INTERCEPT

Lawful Intercept is the process by which law enforcement agencies (LEAs) conduct electronic surveillance as authorized by judicial or administrative order. Communications providers must provide LEAs, with the appropriate warrant, certain call identifying information and/or call content as prescribed in the Communications Assistance for Law Enforcement Act (CALEA). Failure to meet CALEA subjects communications providers to fines. As broadband penetration and voice-over-IP (VoIP) applications grew, Federal law enforcement authorities began to seek a means for receiving the same types of call identification and call content for calls placed over a VoIP service as for calls made with traditional wireline telephones. Lawful intercept obviously represents a core government functionality, but a standard means for meeting CALEA obligations was not being addressed by the major local exchange carriers or providers of "over-the-top" voice services. As broadband penetration grew, the need became urgent.

The government did not mandate a particular standard, but left it up to standards bodies to create CALEA safe harbors. CableLabs administers and publishes the voluntary consensus specifications used by the cable industry for services such as managed voice communications over IP. This specification is known as the PacketCable™ specification. The FBI defined the lawful surveillance needs of the LEAs, and CableLabs was then able to update the PacketCable specifications in order to meet such needs. Unlike other organizations that chose to work with the Administration at arms length, CableLabs' close working relationship with the FBI enabled a better understanding of the LEAs' lawful surveillance problems and a cooperative approach to solutions. This resulted in a CALEA safe harbor that not only addressed the government's needs, but did so in a manner that preserved the privacy of cable subscribers not subject to LEA warrants, and accounted for the practical and technical aspects of the cable system. This specification effort received special FBI commendation and is now also an international standard. By coming to a private consortium, the government was able to work with us directly to draw on our expertise; our institutional knowledge of the technology; our ability to shape specifications with appropriate regard to actual costs; our knowledge of the practical application of technology; our ability to address associated intellectual property issues through commercial solutions; our familiarity with actual and possible implementations; our familiarity with multiple standards-setting options; our relationships with key companies and individuals; and our ability to build consensus and revise standards dynamically.

The version of the PacketCable Electronic Surveillance Specification published on July 23, 2004, provided solutions to all of the issues the FBI identified in a practical, efficient and least-cost manner that also preserved privacy.[4] A similar Cable Broadband Intercept

[4] Specifically, CableLabs succeeded by July 2004 in resolving every issue on the FBI's "wish list" for CALEA compliance by cable's VoIP services, including:

Specification was issued on June 11, 2007, to effectuate lawfully authorized broadband electronic surveillance in accordance with CALEA. As a result, in spite of technological differences and complexities, LEAs will receive the same types of call identification and call content for calls placed over a PacketCable-compliant VoIP service as in calls made with traditional wireline telephones. The FCC accepted the Cable Broadband Intercept Specification and the PacketCable Electronic Communications Surveillance Specification as CALEA "safe harbors." The PacketCable Electronic Communications Surveillance Specification is now also an international standard. Equipment built to the PacketCable specification has since been deployed widely. CableLabs provides PacketCable certification testing, which includes tests to show conformance to the CALEA requirements.

FBI Assistant Director Kerry E. Haynes explained the importance of meeting the core government need: "real-time technical interception capabilities are to the war against terrorism what radar was to the Second World War - without it our ability to see enemies approaching is extremely limited." He also praised the specification produced through FBI-CableLabs cooperation as "an extraordinary example of law enforcement and industry collaboration in the public interest. It stands as a model for future industry-law enforcement cooperative efforts."[5]

- Subject-initiated conference calls - provides law enforcement with the content of subject-initiated conference calls.
- Timing Information - allows law enforcement to correlate call identifying information with call content.
- Subject-initiated dialing and signaling - provides law enforcement with access to all subject dialing and signaling information such as use of flash hook (call waiting) and feature keys.
- In-band/out-of-band signaling - notifies law enforcement whenever subject's service sends a tone or other network message such as if a line is ringing or busy.
- Party Hold/Join/Drop - allows law enforcement to identify the active parties to a subject-initiated call.
- Dialed Digit Extraction - provides law enforcement those digits dialed by a subject during a call.

[5] Press Release, Federal Bureau of Investigation, *Federal Bureau of Investigation Calls Cablelabs®' Release of Its Packetcable™ Electronic Surveillance Technical Specification "A Positive Development" For Cable Industry Compliance With The Communications Assistance For Law Enforcement Act (CALEA) And The Lawful Access Needs Of Federal, State And Local Law Enforcement* (Sept. 7, 2004), *available at* http://www.fbi.gov/news/pressrel/press-releases/federal-bureau-of-investigation-calls-cablelabsae-release-of-its-packetcabletm.

CableLabs regards its experience in providing for lawful intercept through the PacketCable Electronic Surveillance and Cable Broadband Intercept Specifications as strong validation of current U.S. standards-setting policy to use commercially developed "voluntary consensus standards" where practical, and to treat solutions from consortia, informal multi-company standards, development activities, and even single-enterprise standards-setting activities on the same footing as formal standards-setting organizations. The many benefits of this approach were illustrated in CableLabs' work on lawful intercept. A core government functionality was not being met in the market, but, by working cooperatively with CableLabs and utilizing its existing expertise, relationships, and specification and certification processes, the needs were met. The government did not prescribe a standard. It did not insist on a lengthy formal ANSI process. It did not require the FCC to legally "reclassify" new services as legacy services, which would have introduced regulatory confusion and suppressed broadband investment. Instead, it worked with a private consortium to fine-tune existing voluntary consensus standards. And as a voluntary "safe harbor," rather than a prescribed agency rule, the standard allows the industry to rely on the specification but to preserve the opportunity for continued rapid evolution and alternative innovative methods for compliance that keep pace with ever changing broadband networks.

The use of private consortia, specification and certification programs is a highly effective tool for voluntary consensus standard development. It enables specifications to be drawn rapidly to translate business needs into efficient technical requirements, which are, in turn, validated through test plans and certification programs. In many cases, this approach helps to build markets and to accommodate rapid innovation without awaiting what can be a far lengthier

formal standards development organization (SDO) process, or an even lengthier, and more rigid, government rulemaking process.

For example, it was through the CableLabs DOCSIS® specification—for which CableLabs was recently awarded an Emmy for enabling the delivery of television via broadband—that DOCSIS was cultivated as a global standard. The DOCSIS specification was born from private collaboration, developed through the more formal CableLabs specification and testing process, then became an ANSI standard, and then an ITU worldwide standard. New DOCSIS 3.0 network innovations—such as "bonding" channels to enable speeds of 100 Mbps—follow the same path. The success of the DOCSIS specification has not only revolutionized broadband, but has demonstrated the renewed ability of the United States to exercise global leadership through research and development and the rapid establishment of voluntary consensus standards without awaiting government mandate or formal SDO processes. Today, the National Broadband Plan can point to its 100 Mbps performance capabilities as a national goal,[6] without needing to invent a DOCSIS 3 standard to get there.

III. SMARTGRID

Under the Energy Independence and Security Act (EISA) and the American Recovery and Reinvestment Act (Stimulus Act), the National Institute of Standards and Technology (NIST) is bringing together energy providers, manufacturers, service providers, consumers, regulators and other stakeholders to develop "interoperable standards." CableLabs is among the participants in what is obviously an enormously complex undertaking, one that touches on electrical networks, communications networks, almost everything to which they connect, and the many complex interactions and relationships among them.

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[6] *Connecting America: The National Broadband Plan,* at 9 (Mar. 16, 2010).

Our experience has been relatively brief, but it suggests that the intended approach begins from a similar premise: that the government and stakeholders could collect existing standards, identify the gaps, and then facilitate gap filling by working through an industry-driven consensus process. In theory, this could invite innovative approaches from multiple consortia and informal standards bodies on the same footing as formal standards-setting organizations, as called for by OMB Circular A-119.

In execution, the Smart Grid Interoperability Panel should be alert to opportunities for structuring standards in a way that attracts multiple approaches from multiple vendors. For example, we are aware of concerns from State Public Service Commissions that some of the standards being developed and adopted in the Smart Grid Interoperability Panel, such as OpenADR (Open Automated Demand-Response), are predicated on the Advanced Metering Infrastructure (AMI) energy management architecture used *only* by utilities, effectively precluding a competition of ideas in the marketplace, and possibly displacing much of the innovative work by others in home networking and energy management.

One approach that could invite innovation is for the government to identify business requirements (such as a national capability for demand response in homes and businesses) and then permit multiple approaches from multiple vendors to connect with open interfaces providing meter and grid status. Many "non-standard" solutions could meet the national goal, and in time a market standard could be widely adopted through market acceptance. This approach creates a market-driven, innovation-inducing environment in which the government is not called upon to pick winners and losers. Once a market is established, the "right" standard will emerge, not the other way around.

IV. SET-TOP BOXES

In contrast to the previously discussed CableLabs successes, CableLabs offers a third case study as an illustration of what can go wrong when there are major departures from the course we recommend above.

In today's world cable, satellite, and telephone companies offer consumers competing multichannel offerings. We are in a period of rapid innovation and experimentation: Internet, gaming devices, televisions, smartphones, and tablets offer access to multiple sources of Internet video programming through competing set-top boxes or via navigation functionality embedded directly in DTVs, and cable companies are engineering their services to appear directly on "smart" televisions without the need for set-top boxes. It is hard to recall that 15 years ago, Congress felt compelled to adopt a statute directing the FCC to adopt rules promoting a retail market in set-top boxes so that consumers would not be limited to renting a set-top box from a cable company to enjoy multi-channel programming. At the time, DBS was just beginning, telephone companies were prohibited from entering the MVPD business, and broadband did not exist.

In response to that statute, the cable and consumer electronics industry negotiated a 2002 solution based on a removable CableCARD™ and the FCC placed the specific implementation into regulation in 2003. The results did not pan out as hoped. Today, in 2011, consumers access video programming from competing MVPDs and from a staggering variety of Internet sources and Internet-based retail devices that did not exist at the start of the decade, but only a handful of retail devices rely on the CableCARD. Yet, extricating the 2002 solution from Federal regulation has proven quite challenging. Part of the regulations, which mandate one particular digital video interface (IEEE 1394), stayed in regulatory mandate until 2010, even though

Ethernet, USB, and other connectors had long since eclipsed it. The CableCARD itself remains mandated in what is now well more than 20 million set-top boxes, only 2% of which are the retail devices for which they were originally intended. The FCC proceedings addressing the CableCARD consumed enormous resources, often had ill-defined objectives, and frequently displaced the research, development, innovation and commercial negotiations which eventually led to far more innovative approaches.

The CableCARD saga is a good lesson in what expert economists call "non-market failure." That is, when government intervenes to address what it perceives to be a market failure and directly mandates a standard, it runs a high risk of unintended and undesirable consequences. It may lead to standards that rapidly become obsolete, yet are hard to change. It may redirect the energies of market participants into government advocacy, rather than into innovation and commercial negotiations. There is considerable economic and academic literature documenting that the risks of non-market failure and the costs to innovation are particular high when the government intervenes in new markets that are rapidly evolving—such as we have in the converging communications, media, and IT industries today.[7] Besen and Johnson's seminal

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[7] Paul A. David, *Some New Standards for the Economics of Standardization in the Information Age, in* Economic Policy and Technological Performance (Partha Dasgupta & Paul Stoneman, eds., Cambridge Univ. Press, 1987) at 210, 234 ("The second is a dilemma posed by the realization that governmental agencies are likely to have greatest power to influence the future trajectories of network technologies, just when a suitable informational basis on which to make socially optimal choices among alternatives is most lacking."; "[P]remature reductions of gateway costs may exact unforeseen economic penalties by discouraging investment in R&D programmes aimed at establishing the technological dominance of one system over its rivals."); Michael Katz & Carl Shapiro, *Systems Competition and Network Effects*, J. Econ. Perspectives, Vol. 8, No. 2, Spring 1994, at 113 ("[E]ven if policy-makers try to maximize total surplus, they may lack the information needed to do so. In the case of choosing a standard at the start of the product's life, it may be very difficult to determine which standard is the 'correct' one. Moreover, the government may have a significant informational disadvantage relative to private parties when emerging technologies are involved."); *id.* at 95 ("Although compatibility has obvious benefits, obtaining and maintaining compatibility often involves a sacrifice in terms of product variety or restraints on innovation."); Stanley Besen & Leland Johnson, *Compatibility Standards, Competition, and Innovation in the Broadcasting Industry*, Rand, Prepared for the National Science Found., Nov. 1986, at ix ("*Formal standard setting, either by government or by private parties, should be avoided during the time that the technologies in question are rapidly changing.*") (italics in original) (hereinafter Besen & Johnson); Carl Shapiro, *Setting Compatibility Standards: Cooperation or Collusion? in* Expanding the Boundaries of Intellectual Property (Rochelle Dreyfuss, Diane Zimmerman, & Harry First, eds., Oxford Univ. Press, 2001) at 88 ("The need to adhere to a standard imposes limits on firms' product

study concludes: "[T]he government should refrain from attempting to mandate or evaluate standards when the technologies themselves are subject to rapid change.... It is only after the technologies have 'settled down' that government action is most likely to be fruitful ...."[8] This is why the National Cable & Telecommunications Association (NCTA) has recommended that any approach to questions about video distribution navigation devices should begin with a commitment to consumer choice and be "implemented flexibly to accommodate different network architectures and diverse equipment options, and, to the maximum extent possible, serve as the basis for private sector solutions, not government technology mandates." NCTA's recommendation elaborates:

> We believe these principles should be implemented in ways that facilitate the deployment of different video device options in response to dynamic and varying consumer demands, rather than requiring that all devices include the same features for all consumers. It is also critical to accommodate the flexible use of different architectures – now existing or developed in the future – for accessing multichannel video provider services... None of us can predict with any certainty which is the better or more likely path and it is quite possible that multiple paths will emerge.[9]

V. LESSONS LEARNED

CableLabs draws these lessons from the three case histories examined above:

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design choices. Unlike the first two effects of standardization, this effect is a cost. Limits on design choices can lead to static losses from the reduction in variety. And they can lead to dynamic losses as firms are foreclosed from certain paths of R&D that could result in innovative new products that could not comply with the standards. Note that these limits impose costs both at the time a new product is created, and later when it is possible to introduce a new generation offering greatly enhanced performance."); Joseph Farrell & Garth Saloner, *Converters, Compatibility, and the Control of Interfaces*, J. Industrial Econ., Vol. 40, No. 1, Mar. 1992, at 9-10 ("But standardization has its costs. First, it may retard innovation. Second, the process of standardization may itself be costly.... Third – the problem addressed in this paper – since standardization typically constrains product design, it may limit product variety."); Richard Gilbert, *Symposium on Compatibility: Incentives and Market Structure*, J. Industrial Econ., Vol. 40, No. 1, Mar. 1992, at 2 ("One way to ensure compatibility is to require firms to produce products that conform to set standards. This is, however, a potentially costly requirement. Standards limit flexibility to offer products with specialized characteristics (standards limit product variety) and may constrain technological progress by limiting firms to suboptimal designs.").

[8] Besen & Johnson, *supra* note 7, at 135.

[9] Letter from Kyle McSlarrow, President and CEO, National Cable & Telecommunications Association, to Chairman Julius Genachowski, Federal Communications Commission, GN Docket Nos. 90-47, 09-51, 09-137, CS Docket No. 97-80 (Mar. 12, 2010).

1. We should maintain the approach of the NTTAA and OMB Circular A-119: Rather than assuming the need for government mandated standards, effective public-private partnerships can be created with consortia, informal multi-company standards, development activities, and even single-enterprise standards-setting activities as well as with formal standards-setting organizations.

2. The diversity and flexibility invited by NTTAA and OMB Circular A-119 drives innovation and helps to promote U.S. leadership and competitiveness. We should continue to embrace a market-driven, innovation-inducing environment by avoiding top-down government prescription and allowing voluntary consensus standards to emerge—including multiple, competing approaches to similar technological challenges. As stated in *United States Standards Strategy*, "Voluntary consensus standards are at the foundation of the U.S. economy.... The United States is a market-driven, highly diversified society, and its standards system encompasses and reflects this framework," including "through professional and technical organizations whose membership is on an individual or organizational basis; and through consortia, whose membership is typically technology based."[10]

3. Government intervention is most appropriate (and successful) when it is addressing core government functionalities, such as safety, health, disabilities, and defense, which are not being met in the market. Lawful intercepts are one example. Emergency alert signaling (or common alert protocol) is another. Closed captioning is yet another. We do not believe that the distribution and navigation technologies for entertainment video fall within this category of core government functions, and we believe that market needs are being met and will continue to be met with the participation of expert and highly professional industry participants who are accustomed to working through a wide variety of voluntary standards organizations. Recognizing when intervention is in service of a core government function and when it is not will become even more imperative as various non-core activities are "touched" by an increasingly interconnected communications networks.

4. If government intervention is considered appropriate, it should have clearly defined objectives, should avoid incorporating specific implementations into regulation, and should be flexible to accommodate rapid evolution and innovation. In our first case history, by solving lawful intercept with a "safe harbor," rather than a prescribed agency rule, the solution allows the industry to rely on the specification, but preserves the opportunity for continued rapid evolution and alternative methods for compliance.

5. When deciding whether intervention is appropriate, the government should also consider the risk and cost of "non-market failure." In other words, even when the government believes there is a problem that the market has not yet solved, intervention may actually do more harm than good.

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[10] American National Standards Institute, *United States Standards Strategy*, at 4 (2005), *available at* www.us-standards-strategy.org.

NIST can serve an important role in assuring government commitment to these principles. For example, for transparency purposes alone, NIST could collect and make publicly available the standards activities underway by the different branches. It could identify the specific objectives to be served, and possibly serve as an advisor to other agencies on how well their approach reflects the principles of NTTAA and OMB Circular A-119.

CableLabs appreciates this opportunity to submit comments, and welcomes the opportunity to continue partnering with the Federal government in finding creative technology solutions.

Respectfully submitted,

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