



March 18, 2013

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: *Ex Parte* Submission – ET Docket No. 13-44; RM-11652

Dear Ms. Dortch:

On Thursday, March 14, 2013, Danielle Coffey and Brian Scarpelli of the Telecommunications Industry Association¹ (“TIA”) met with Alex Hoehn-Saric and David Goldman, both of the Office of Commissioner Jessica Rosenworcel of the Federal Communications Commission (“Commission”) to discuss the above-captioned dockets and the Commission’s proposed device approval rule changes.²

In this meeting, TIA expressed appreciation for the Commissioner’s focus and attention to the important issue of device certification, and its impact on manufacturers’ and suppliers’ ability to innovate. TIA described to the Commission its existing efforts to streamline the approval of devices. TIA’s Technical Regulatory Policy Committee (“TRPC”)³ specifically addresses this area, and meets several times each year with Commission lab staff to address device approval issues and to share information among stakeholders.

¹ TIA is a Washington, DC-based trade association and standard developer that represents the global information and communications technology (ICT) industry through standards development, advocacy, tradeshows, business opportunities, market intelligence and world-wide environmental regulatory analysis. For over eighty years, TIA has enhanced the business environments for broadband, mobile wireless, information technology, networks, cable, satellite, and unified communications. TIA’s approximately 500 member companies’ products and services empower communications in every industry and market, including healthcare, education, security, public safety, transportation, government, the military, the environment, and entertainment. TIA is an accredited standard development organization for the ICT sector by the American National Standards Institute (ANSI).

² Amendment of Parts 0, 1, 2, and 15 of the Commission’s Rules regarding Authorization of Radiofrequency Equipment; Amendment of Part 68 regarding Approval of Terminal Equipment by Telecommunications Certification Bodies, ET Docket No. 13-44, RM-11652 (rel. Feb. 15, 2013).

³ TIA’s Technical Regulatory Policy Committee, or TRPC, advocates public policy positions related to the streamlining clarifying the mechanisms of the FCC equipment certification processes and procedures through interaction with the Federal Communications Commission (FCC), its Office of Engineering and Technology (OET) and its Laboratory, and other governmental bodies, including but not limited to those issues which are affected by related TIA standardization activities. *See* <http://www.tiaonline.org/policy/tia-policy-committees-divisions>.

TIA is also interested in this issue as an American National Standards Institute (ANSI)-accredited standard developer for the telecommunications industry. One of TIA's standards committees – TR-41⁴ – develops the standards incorporated by reference into Part 68 of the FCC's rules which exist to ensure that terminal equipment attaching to the public switched telephone network ("PSTN") does not harm the network. The administrative aspect of these rules is managed by a non-profit called the Administrative Council for Terminal Attachments, or the ACTA.⁵

TIA also described to the Commission its existing efforts to work directly with the Telecommunications Certification Bodies ("TCBs"). TIA's members, representing manufacturers and vendors of information and communication technology ("ICT") constantly work with TCBs to ensure the sufficiency of submissions to the Commission's Office of Engineering and Technology ("OET") Laboratories. In addition, TIA is a liaison between the TCB Council⁶ and the ICT manufacturer and vendor community, and will be delivering a presentation to the TCB Council members on emerging technology trends in licensed and unlicensed technologies in April 2013.

TIA noted its general support of the Commission's decision to re-examine the device approval process after more than a decade. Generally, TIA stated its belief that the Commission should proceed in this rulemaking with four overarching goals:

1. Increase speed of product review
2. Increase certainty in the product approval process
3. Address subpar TCBs while encouraging the continued success of TCBs that perform well and meet their criteria
4. Encourage TCBs to fulfill their post-market surveillance obligations in a way that does not impede the marketing of certified equipment.

Noting its support of the Commission's efforts and that the NPRM appears to effect the goals listed above, we discussed specific ways to improve the submissions of

⁴ TIA's TR-41 Engineering Committee (User Premises Telecommunications Requirements) develops voluntary standards for telecommunications TE and systems, specifically those used for voice services, integrated voice and data services, and Internet protocol ("IP") applications. Together with its three subcommittees and their working groups, the committee develops performance and interface criteria for equipment, systems and private networks, as well as the information necessary to ensure their proper interworking with each other, with public networks, with IP telephony infrastructures and with carrier-provided privateline services. In addition, TR-41 develops criteria for preventing harm to the telephone network, which becomes mandatory when adopted by the Administrative Council for Terminal. See <http://www.tiaonline.org/all-standards/committees/tr-41>.

⁵ See <http://www.part68.org/>.

⁶ The TCB Council is a non-profit entity that provides a forum for periodic dialogue between the FCC and the TCB's and to facilitate on-going activities geared toward the improvement of TCB technical and administrative performance. See <http://www.tcbcouncil.org/>.

TCBs to the OET Labs in order to decrease delays in time-to-market that result when the OET Labs must request clarification or corrections from TCBs. TIA noted that this is particularly important for emerging technology areas currently covered by the Commission's "exclusion list" and the permit-but-ask ("PBA") processes. Possible solutions noted include the possibility of a "tiered" approach to addressing noncompliant TCBs, ensuring adequate training for TCBs, and public recognition of TCBs that consistently meet the Commission's requirements.

TIA also provided the meeting attendees with the TIA 2013 Playbook.⁷ This deliverable provides an overview of the ICT market, technologies and policies that drive innovation and investment.

Pursuant to Section 1.1206 of the Commission's rules,⁸ this letter is being electronically filed via ECFS and a copy of this submission is being provided electronically to the meeting attendees.

Respectfully submitted,

TELECOMMUNICATIONS INDUSTRY ASSOCIATION

By: /s/ Danielle Coffey

Danielle Coffey
Vice President & General Counsel, Government Affairs

Brian Scarpelli
Senior Manager, Government Affairs

TELECOMMUNICATIONS INDUSTRY ASSOCIATION
1320 Court House Road
Suite 200
Arlington, VA 22201
(703) 907-7700

cc: Alex Hoehn-Saric, Policy Director, Office of Commissioner Jessica Rosenworcel
David Goldman, Senior Legal Advisor, Office of Commissioner Jessica
Rosenworcel

⁷ See <http://www.tiaonline.org/policy/tia-2013-playbook>.

⁸ 47 C.F.R. § 1.1206.



Manufacturers and suppliers of
Information and Communications
Technology present...

TIA 2013 PLAYBOOK

An overview of the ICT market, technologies,
and policies that drive innovation and investment

tiaonline.org

TIA POLICY PRIORITIES

INDUSTRY OUTLOOK

TIA BENEFITS



Key Contacts

For more information on TIA's public policy positions and activities, please contact one of the TIA government affairs staff members below:

GRANT SEIFFERT

President
+1.703.907.7701
gseiffert@tiaonline.org

DANIELLE COFFEY

Vice President &
General Counsel,
Government Affairs
+1.703.907.7734
dcoffey@tiaonline.org

JOSEPH ANDERSEN

Energy & Environment
+1.703.966.0685
jandersen@tiaonline.org

DAVID GRAY

Associate,
Government Affairs
+1.703.907.7710
dgray@tiaonline.org

ERIC HOLLOWAY

Director, International &
Government Affairs
+1.703.907.7712
eholloway@tiaonline.org

BRIAN SCARPELLI

Sr. Manager,
Government Affairs
+1.703.907.7714
bscarPELLI@tiaonline.org

DILEEP SRIHARI

Director, Legislative &
Government Affairs
+1.703.907.7715
dsrihari@tiaonline.org

MARK UNCAPHER

Director, Regulatory &
Government Affairs
+1.703.907.7733
muncapher@tiaonline.org

Other departments:

CHERYL BLUM

Vice President,
Technology & Standards
+1.703.907.7436
cblum@tiaonline.org

HERB CONGDON, PE

Associate Vice President,
Technology & Standards
+1.703.907.7703
hcongdon@tiaonline.org

JOHN JACOBS

Sr. Vice President, Membership,
Marketing & Business Development
+1.703.907.7747
jjacobs@tiaonline.org

ANDREW KURTZMAN

Vice President &
Corporate Counsel
+1.703.907.7413
akurtzman@tiaonline.org

TALY WALSH

Vice President,
Networking & Intelligence
+1.703.907.7744
twalsh@tiaonline.org

Telecommunications Industry Association

CONNECTIVITY, INNOVATION, LEADERSHIP, AND RESPONSIBILITY are Core Values of TIA. Our mission is to turn those values into initiatives that benefit our membership and the manufacturers and suppliers of global networks.

Companies that join TIA share a common vision for the future of the Information and Communications Industry — a vision that informs their strategic planning and satisfies their business goals. TIA members gain exclusive access to the latest intelligence on information and communications technologies and participate as industry leaders to create standards and advise on government and industry policy.



**IF YOU THOUGHT
THE WORLD WAS SHRINKING,
YOU HAVEN'T SEEN ANYTHING YET.**

TIA Innovation Agenda

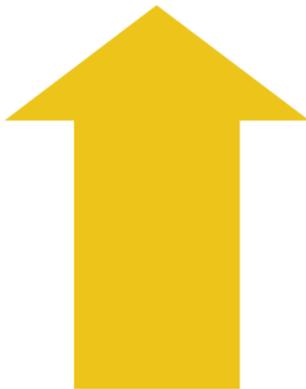
ADVANCE GLOBAL COMPETITIVENESS THROUGH:

- ▶ Market Access and Trade
- ▶ Research and Development
- ▶ Education and Talent
- ▶ Tax Reform



DRIVE INVESTMENT THROUGH:

- ▶ Broadband Deployment
- ▶ Market-Based Regulations



ENABLE FORWARD-LOOKING TECHNOLOGIES WITH:

- ▶ Spectrum Availability
- ▶ Global Cybersecurity
- ▶ Green ICT and Smart Grid
- ▶ Accessibility
- ▶ Public Safety





Innovation Reaps Benefits

THE TIA ROADMAP will drive investment in broadband networks and applications, accelerating social and economic development by:

- ▶ **CONNECTING** communities and enterprise customers with the essential 21st century infrastructure.
- ▶ **SUSTAINING**, redefining, creating, and multiplying jobs.
- ▶ **ENHANCING** productivity, enabling teleworking.
- ▶ **INCREASING** eco-sustainability and smart grid deployments through intelligent technologies.
- ▶ **OFFERING** new tools for public safety and homeland security.
- ▶ **IMPROVING** public health facilities through telemedicine, digital hospitals, and e-records.
- ▶ **FACILITATING** e-government.
- ▶ **FOSTERING** powerful educational tools in the classroom and boosting distance-learning capabilities.
- ▶ **MAKING** the power of communications accessible to all.



Innovation Drives Jobs & Economic Growth

- ▶ **ICT COMPANIES ACCOUNTED** for **3.5 million jobs**, with average compensation for ICT workers more than 80 percent higher than for the workforce overall.
- ▶ **ICT FIRMS CONTRIBUTE** about **\$1 trillion to the U.S. GDP** through both direct and indirect contributions — about 7 percent of the U.S. economy.
- ▶ **ICT'S DIRECT CONTRIBUTIONS** to GDP have **increased nearly 25 percent since the 1990s**, growing from 3.4 percent per year in 1991–1993 to an average of 4.2 percent per year in 2005–2009 — gains unmatched by any other industry.
- ▶ **EFFECTIVE IMPLEMENTATION OF THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012** will fund the development and initial deployment of a nationwide wireless broadband data and communications network for public safety agencies and would lead to the creation of an estimated **100,000 new jobs in ICT industries** and, over time, produce indirect or spillover **benefits of an estimated \$4 billion to \$8 billion per year.**

Recapture Global Competitiveness

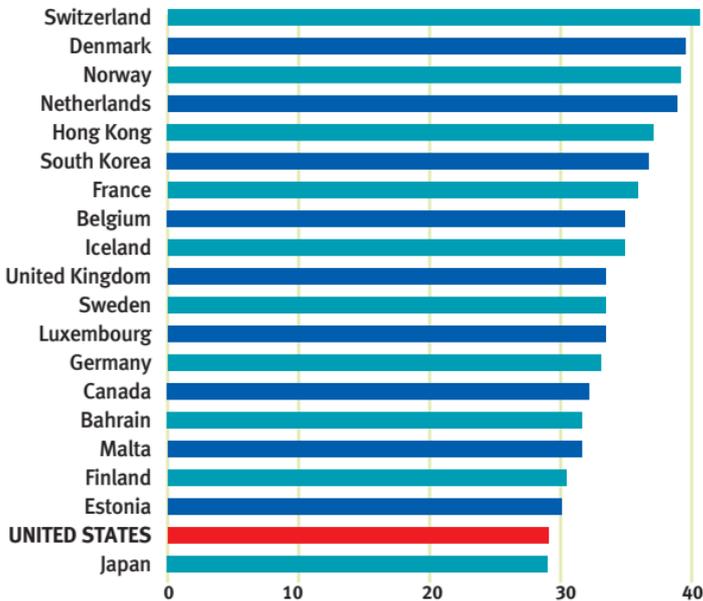
LAWMAKERS CAN RECAPTURE GLOBAL COMPETITIVENESS THROUGH:

- ▶ **MARKET ACCESS & TRADE** — Securing access to international markets by promoting trade liberalization and a market-based, technology-neutral approach to regulation in international markets.
- ▶ **RESEARCH & DEVELOPMENT** — Strategic and robust U.S. investment in telecommunications research, including permanent tax incentives for innovation, multi-year federal research plans, and a commitment to long-term research will enable the United States to remain a technology industry leader.
- ▶ **EDUCATION & TALENT** — The future of the ICT industry in the United States depends on providing the necessary support for education in science, technology, engineering, and mathematics (STEM) for our students, while enacting immigration reforms to allow companies to attract and retain the best and brightest minds from around the world.
- ▶ **TAX REFORM** — U.S. firms are disadvantaged by virtue of the fact that the U.S. corporate tax rate is now the highest in the world. TIA will press for comprehensive reform that will cut the U.S. corporate tax rate to a level that will enhance the international competitiveness of U.S. firms, while moving towards a competitive territorial system for taxation of foreign earnings.

The United States Must Achieve Leadership in Broadband

Broadband Penetration 2012 (Percent)

Source: TIA's 2013 ICT Market Review and Forecast



- ▶ **THE UNITED STATES LAGS BEHIND OTHER DEVELOPED NATIONS** in broadband deployment.
- ▶ **THE UNITED STATES RANKED 19TH** in broadband deployment in 2012, falling from its 17th place ranking in 2011.
- ▶ **THE UNITED STATES MUST NOT BE OUTPACED** by major trading partners in deployment of cutting-edge technologies and networks.
- ▶ **LACK OF BROADBAND CONNECTIVITY INHIBITS JOB CREATION** in the United States.

Market Access and Trade

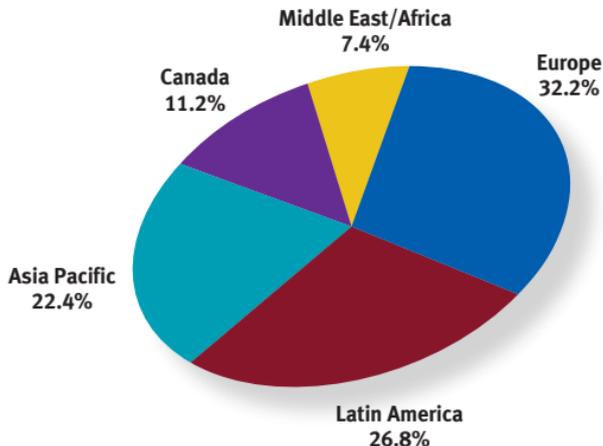
TIA POLICIES SECURE ACCESS TO INTERNATIONAL MARKETS by promoting trade liberalization and a market-based and technology-neutral approach to regulation in international markets:

- ▶ **BUSINESS DEVELOPMENT OPPORTUNITIES** for U.S. suppliers should be facilitated by promoting full, fair, and open competition in international markets.
- ▶ **TRADE AGREEMENTS** that eliminate or reduce traditional market access barriers and technical barriers to trade should be promoted.
- ▶ **EXISTING COMMITMENTS** by signatories to the World Trade Organization (WTO) Border Tax Adjustment (BTA), Information Technology Agreement (ITA), Government Procurement Agreement (GPA), and Agreement on Technical Barriers to Trade (TBT) should be enforced.
- ▶ **COMMUNICATIONS SERVICES** must be liberalized on a technology-neutral basis.
- ▶ **BILATERAL AND MULTILATERAL TELECOM** agreements should provide transparency, independent regulatory authority, nondiscrimination against foreign suppliers, and technology neutrality.
- ▶ **THE DEVELOPMENT AND IMPLEMENTATION** of export control mechanisms that enhance the abilities of companies to export their products overseas should be supported.
- ▶ **THE U.S. EXPORT CONTROL REGIME** should be modernized to increase transparency and clearly delineate jurisdiction between the Commerce and State Departments.

Top Trade Destinations for U.S. Equipment

U.S. Exports of Telecommunications Equipment by Region 2011

Source: TIA's 2013 ICT Market Review and Forecast



- ▶ **IN 2011, EUROPE WAS THE LARGEST MARKET** for U.S. equipment exports, followed by Latin America and Asia Pacific.
- ▶ **IN 2011, THE TOP 10 EXPORT DESTINATIONS** together, which comprised 59 percent of all U.S. telecommunications equipment exports, accounted for \$9.97 billion in telecommunications equipment purchases from the United States.
- ▶ **MEXICO WAS THE LEADING DESTINATION** for the export of American telecommunications equipment in 2011, accounting for \$2.4 billion, down slightly from 2010.

China: SECTOR SNAPSHOT

Telecommunications Subscribers in China (Millions)

Source:
TIA's 2013
ICT Market
Review and
Forecast



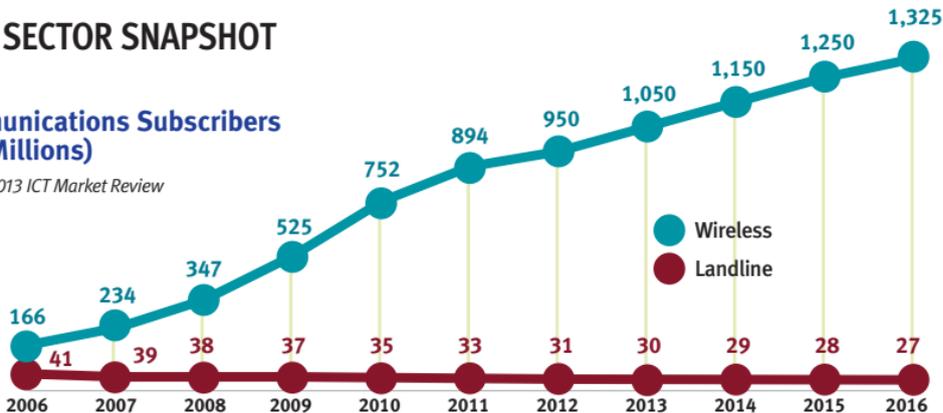
- ▶ **CHINA HAD THE LARGEST TELECOMMUNICATIONS MARKET** in Asia Pacific at \$487 billion in 2012.
- ▶ **CHINA IS THE LARGEST FIXED BROADBAND MARKET** in the world, with 185 million subscribers in 2012.
- ▶ **BY 2016, CHINA WILL HAVE 305 MILLION BROADBAND SUBSCRIBERS**, representing 66 percent of the Asia Pacific region's total subscriber growth.

- ▶ **CHINA HAS THE LARGEST WIRELESS MARKET** in the world, with 1,100 million wireless subscribers in 2012. By 2016, it is expected to grow by another 325 million subscribers to 1.42 billion subscribers.
- ▶ **ALTHOUGH CHINA'S BROADBAND MARKET IS LARGE IN ABSOLUTE TERMS**, penetration in China was only 13.4 percent in 2012. This is expected to grow to 21.74 percent by 2016.

India: SECTOR SNAPSHOT

Telecommunications Subscribers in India (Millions)

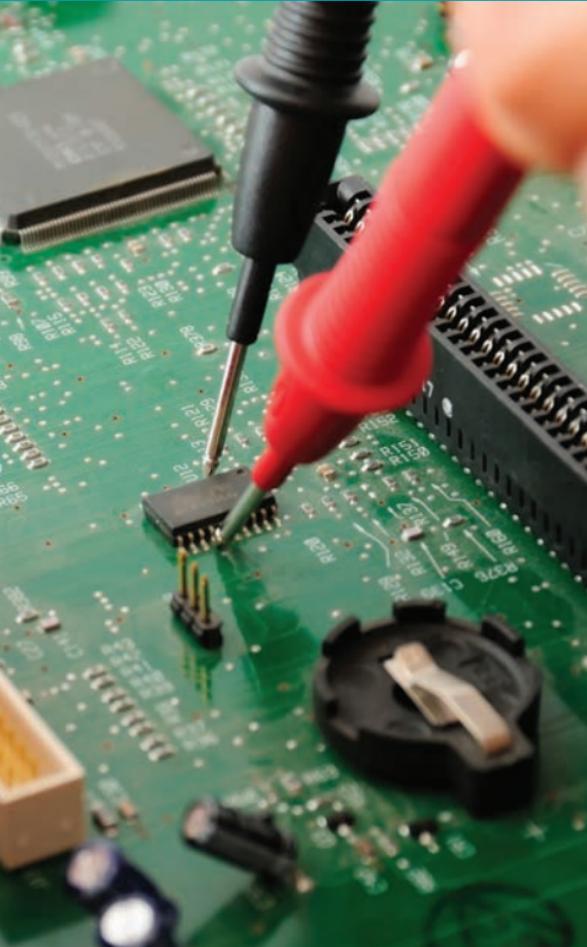
Source: TIA's 2013 ICT Market Review and Forecast



▶ **IN 2012, INDIA HAD THE SECOND LARGEST** wireless market in Asia Pacific with 950 million subscribers, projected to reach 1.33 billion by 2016.

▶ **INDIA ADDED AN AVERAGE** of more than 4.5 million wireless subscribers per month in 2012.

▶ **FIXED BROADBAND REMAINS LIMITED** in India — penetration was 1.16 percent in 2012 — because of poor infrastructure in rural areas, where 70 percent of the population lives.



Research & Development

STRATEGIC AND ROBUST U.S. INVESTMENT IN TELECOMMUNICATIONS RESEARCH including permanent tax incentives for innovation, multi-year federal research plans, and a commitment to long-term research will enable the United States to remain a technology industry leader.

- ▶ **INCREASED FEDERAL RESEARCH FUNDING MUST BE ALLOCATED** for network- and communications-specific, precompetitive basic research.
- ▶ **THE U.S. GOVERNMENT MUST MAKE LONG-TERM COMMUNICATIONS RESEARCH A PRIORITY**, and funds need to be directed to key areas: universal broadband; interoperable mobility; and homeland security-related fields including interoperability, security, survivability, and encryption.

Education & Talent

THE FUTURE OF THE ICT INDUSTRY IN THE UNITED STATES depends on providing the necessary support for education in science, technology, engineering, and mathematics (STEM) for our students while enacting immigration reforms to allow companies to attract and retain the best and brightest minds from around the world.

- ▶ **ENACTMENT OF IMMIGRATION REFORMS** should increase the number of H1-B visas, eliminate per-country caps, and facilitate the retention of STEM graduates from U.S. universities to improve and strengthen our domestic workforce.
- ▶ **CONGRESS MUST REAUTHORIZE AND FUND THE AMERICA COMPETES ACT (PL 111-358)** and maintain a commitment to invest in STEM education to help ensure that America is educating the workforce of the future.





Tax Reform

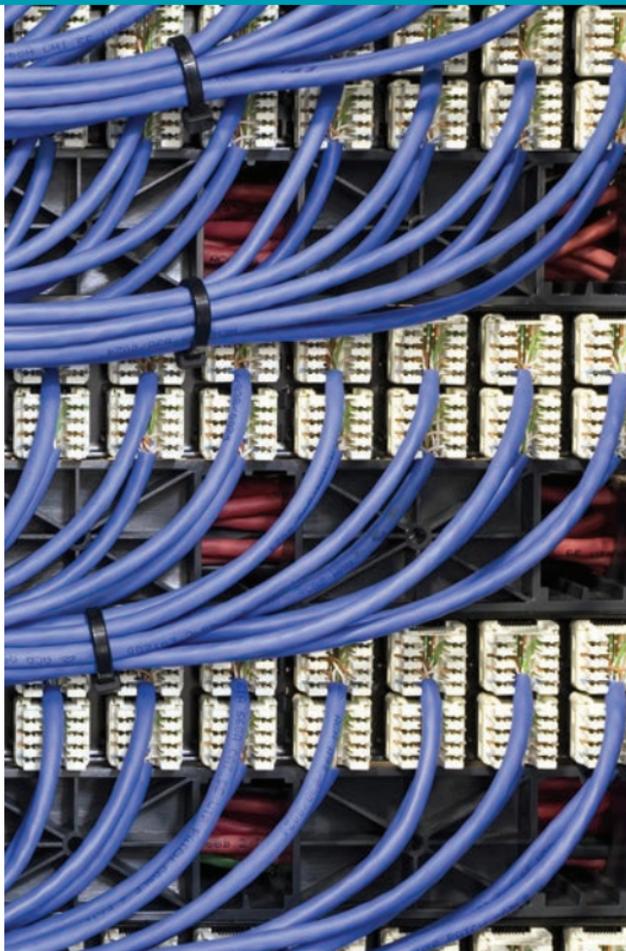
COMPREHENSIVE TAX REFORM will affect the competitiveness of U.S. firms, which are already disadvantaged by virtue of the fact that the U.S. corporate tax rate is now the highest in the world.

- ▶ **THE CORPORATE TAX RATE MUST BE REDUCED** to a level that will enhance the international competitiveness of U.S. firms.
- ▶ **THE UNITED STATES SHOULD MOVE TOWARDS A COMPETITIVE TERRITORIAL TAX SYSTEM** for foreign earnings, which will encourage domestic investment and boost our nation's economy.
- ▶ **A ROBUST TAX INCENTIVE FOR INNOVATION** that is permanent, simpler to claim, and supports investments by both large and small businesses must be included in any comprehensive reform.

Drive Investment

LAWMAKERS SHOULD DRIVE INVESTMENT in broadband networks and services through:

- ▶ **BROADBAND DEPLOYMENT** — Through incremental tax credits, expensing, and bonds, the U.S. government can increase investment in our nation's future and domestic prosperity.
- ▶ **MARKET-BASED REGULATIONS** — A continued light-touch approach to regulation, as well as certainty in the marketplace, will ensure continued investment in a technology-neutral manner.





Broadband Deployment

TIA ENCOURAGES the U.S. government to increase investment in our nation's future and domestic prosperity through the enactment of incremental tax credits, expensing, and bonds.

- ▶ **THE UNITED STATES MUST ENACT PERMANENT TAX INCENTIVES FOR INNOVATION**, which will allow companies to make long-term research plans while being assured that the incentives will continue for the life of the project.
- ▶ **TAX POLICIES SHOULD BE IMPLEMENTED THAT WILL DRIVE INVESTMENT IN BROADBAND** through tiered tax incentives that accelerate as the speed offered by such service increases, recognizing differing tiers and floors depending on the technology deployed.

Broadband Goals

TIA CALLS ON THE ADMINISTRATION, CONGRESS, and other government bodies to adopt a framework that supports the following goals:

- ▶ **UNIVERSALLY AVAILABLE**, high-quality, and affordable broadband connectivity.
- ▶ **CONSUMERS' ABILITY TO CONNECT** to and access content over the Internet.
- ▶ **NETWORK OPERATORS' ABILITY** to engage in reasonable, pro-competitive network management.
- ▶ **TECHNOLOGY-NEUTRAL COMPETITION** among existing and emerging platforms and providers.
- ▶ **INCREASED AVAILABILITY** of unencumbered spectrum in large and contiguous blocks for commercial services, located adjacent to like uses.
- ▶ **UTILIZATION OF MARKET-BASED MECHANISMS** to drive spectrum to its highest and best uses.
- ▶ **UNIFORMITY IN REGULATION**, where appropriate, including federal rules wherever possible.
- ▶ **ELIMINATION OF REGULATORY BARRIERS** to investment and innovation.

Market-Based Regulations

A CONTINUED LIGHT-TOUCH APPROACH TO REGULATION, as well as certainty in the marketplace, will ensure continued investment in a technology-neutral manner.

- ▶ **GOVERNMENT MUST ENHANCE EFFORTS** to stimulate investment and innovation in next-generation broadband.
- ▶ **NETWORK OPERATORS** should have the ability to engage in reasonable, pro-competitive network management.
- ▶ **TECHNOLOGY AND SERVICE NEUTRALITY ARE CRITICAL**, and when regulation is necessary, it should be structured to promote competition among existing and emerging platforms and providers.
- ▶ **GOVERNMENT SHOULD ENSURE UNIFORMITY** in regulation for IP-enabled services through exclusive federal jurisdiction of these services by the Federal Communications Commission, which will lead to increased certainty and investment in the marketplace.
- ▶ **TECHNOLOGY MANDATES** by the government hamstringing innovation and increase consumer costs.

Enable Forward-Looking Technologies

TIA CALLS ON POLICY MAKERS to enable forward-looking technologies through:

- ▶ **SPECTRUM AVAILABILITY** — Innovative, next-generation wireless devices, applications, and services require spectrum availability and mobile broadband use. The FCC and the Administration should move quickly to reallocate spectrum and conduct voluntary incentive auctions, while avoiding burdensome regulations.
- ▶ **GLOBAL CYBERSECURITY** — Global approaches to cybersecurity and critical infrastructure protection are necessary to avoid policies that could negatively impact investment in innovation, market access, interoperability, and global security.
- ▶ **SUSTAINABLE ICT** — Appropriate federal-level policies are critical to driving ICT's potential to reduce energy consumption in other more energy-intensive sectors. Smart grid, smart buildings, and travel substitution are key to energy efficiency and sustainable practices.
- ▶ **ACCESSIBILITY** — By encouraging collaboration among stakeholders and the use of voluntary, consensus-based standards, the U.S. government can increase the accessibility of technology to those with disabilities and encourage innovation, and in doing so will open up new employment opportunities for this vulnerable community.
- ▶ **PUBLIC SAFETY** — Improved access to advanced, interoperable communications tools for first responders and other public officials is essential to the public safety mission.

Consumers Quickly Adapt

- ▶ **CONSUMERS EXPECT CONNECTIVITY** and access to voice, video, and data services any time, any place, with any device, over any network.
- ▶ **NEXT-GENERATION NETWORKS** are revolutionizing the way we share information and communicate, for example, through broadband video and Voice over Internet Protocol (VoIP). A timely transition from the legacy Public Switched Telephone Network “PSTN” to an all-IP network will increase the availability of advanced services.
- ▶ **APPROXIMATELY ONE-THIRD** of American households subscribe to VoIP services.

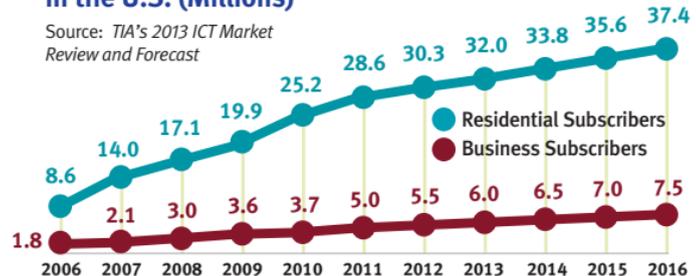
IPTV Subscribers in the U.S. (Millions)

Source: TIA's 2013 ICT Market Review and Forecast



VoIP Subscribers in the U.S. (Millions)

Source: TIA's 2013 ICT Market Review and Forecast



Spectrum Availability

TIA'S SPECTRUM POLICIES ARE FOCUSED ON UNIFYING Congress, the Administration, and the FCC in making more spectrum available for wireless broadband, allowing innovators to speed products to the market while ensuring maximum efficiency in use and global spectrum harmonization in order to prevent digital gridlock for mobile users.

- ▶ **THE FCC AND THE ADMINISTRATION** should promptly reallocate spectrum and expedite voluntary incentive auctions using their new authority from Congress. These auctions will facilitate increased efficiency in frequency use, encourage sharing arrangements where necessary, and allow current licensees and the federal government to reap financial benefits from making spectrum available for wireless broadband.
- ▶ **GLOBAL HARMONIZATION AND COORDINATION** of spectrum allocations should be a priority.
- ▶ **GOVERNMENT SHOULD ADOPT FORWARD-LOOKING**, market-oriented spectrum management policies, seek additional spectrum allocations for mobile broadband services, and finalize any remaining issues regarding deployment of an interoperable public safety communications network as soon as possible.
- ▶ **TECHNOLOGY AND SERVICE NEUTRALITY ARE KEY** — service providers must be given the flexibility to choose technologies and platforms independently based on commercial and competitive considerations.



A photograph of a telecommunications tower with several large white parabolic satellite dishes mounted on it, set against a clear blue sky.

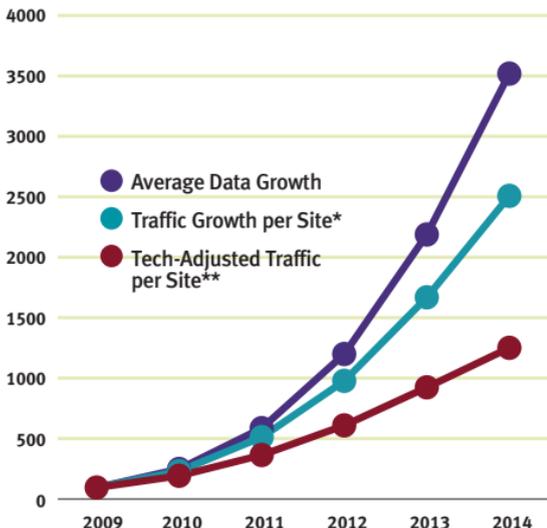
Spectrum Availability, CONTINUED

- ▶ **GOVERNMENT POLICIES SHOULD ENCOURAGE A STABLE** regulatory environment that relies primarily on market forces and avoids government intrusion into new and evolving services.
- ▶ **GOVERNMENT SHOULD MAXIMIZE THE PUBLIC BENEFITS** of spectrum use by controlling harmful interference, fostering competition, and quickly implementing the recommendations of the National Broadband Plan calling for the availability of 300 MHz of spectrum by 2015 and a total of 500 MHz available by 2020, as well as the Presidential Memorandum ordering 500 MHz of federal and nonfederal spectrum suitable for both mobile and fixed wireless broadband use to be made available over the next 10 years.
- ▶ **RESPONSIBLE GOVERNMENTAL AGENCIES SHOULD COORDINATE** to ensure that additional spectrum for advanced wireless services is made available in a timely manner.
- ▶ **SPECTRUM ALLOCATION AND ASSIGNMENT** should be made by open and transparent processes that are market-driven and provide for government/industry consultation. Forward-looking management of radio spectrum is essential to the goals of making telecommunications services accessible and of ensuring that the public derives maximum benefit from spectrum use.

Consumer Demand Will Require Spectrum

Traffic Growth (Percent)

Source: FCC Report – *Mobile Broadband: The Benefits of Additional Spectrum*



* Data demand adjusted for additional cell sites.

** Data demand adjusted for spectral efficiency improvements.

▶ **EACH OF THE MAJOR CARRIERS**

is introducing 4G services on a retail basis, and they will be expanding their networks significantly in the next few years.

▶ **DATA WILL ACCOUNT FOR**

NEARLY 75 PERCENT of overall wireless services spending in 2016. The growth of the data segment is being driven by the explosion in the number of smartphones, whose owners generate more than 10 times the data traffic of standard cellphone owners.



Consumer Demand Will Require Spectrum, CONTINUED

- ▶ **ACCORDING TO ESTIMATES FROM THE FCC**, the average demand for mobile data will exceed capacity by nearly 300 MHz by 2014 — an increase of 3,506 percent relative to 2009.
- ▶ **CLEARED, EXCLUSIVELY-LICENSED SPECTRUM BANDS** allow the most efficient and dependable use of spectrum suitable for mobile broadband deployment and maximize network investment, marketability, availability, and consumer use. TIA supports clearing of re-purposed federal spectrum bands to the maximum extent feasible.
- ▶ **THE MOST PROMISING FORMS OF SHARING** in spectrum bands that cannot be cleared for exclusive licensed use by mobile broadband networks, including those based on LTE technology, are licensed sharing with geographic, frequency, or time-based coordination, including exclusion zones.
- ▶ **SPECTRUM SHARING PRESENTS TECHNICAL CHALLENGES** when required of certain technologies, including LTE, whether based on sensing technology or the FCC's Part 15 unlicensed rules.

Global Cybersecurity

TIA WILL CONTINUE TO ENCOURAGE GOVERNMENT TO WORK SEAMLESSLY WITH INDUSTRY

to secure our nation's networks, businesses, and consumers, calling for policies that enhance trade and promote communications security as a driver of innovation.

▶ **GOVERNMENT AND INDUSTRY**

MUST LEVERAGE A PARTNERSHIP

FRAMEWORK to increase the effectiveness of dialogue between industry and government (domestic and foreign) experts to discuss international standards and best practices. Nations should use internationally accepted best practices relevant to the products at issue (IT or telecom) when developing cybersecurity and critical infrastructure protection policies.

- ▶ **CYBERSECURITY POLICIES** that keep markets open and minimize barriers to trade must be supported.

- ▶ **THE U.S. CONGRESS SHOULD PASS** cybersecurity legislation that facilitates situational awareness during both steady states and times of escalation through improved bi-directional information sharing, enhanced cyber R&D, *Federal Information Security Management Act* (FISMA) reform, better public awareness through education, and greater public-private collaboration without adding regulations, mandates, or increased bureaucracy that will impede investment in innovation and fail to improve the nation's cyber risk profile.

- ▶ **THE UNITED STATES MUST SERVE AS A LEADER** in developing national cybersecurity priorities, risk assessments, and security recommendations for use by both the private sector and government entities.

Sustainable ICT and Smarter Power

TIA ENCOURAGES APPROPRIATE FEDERAL-LEVEL POLICIES DRIVING ICT'S POTENTIAL to reduce energy consumption in other more energy-intensive sectors through smart grid, smart buildings, and travel substitution. Substitution of ICT for outdated technologies is key to improving energy efficiency, creating jobs, and helping U.S. industry compete successfully in global markets.

- ▶ **PROMOTE THE ROLE OF ICT** in sustainable technologies that reduce energy consumption and carbon emissions for new buildings and existing buildings.
- ▶ **STOP “SMART GRIDLOCK”** to unlock the full potential of the smart grid through private and secure access to energy supply and usage data.
- ▶ **PROMOTE TECHNOLOGY NEUTRALITY** in smart grid policy to encourage competition and innovation.
- ▶ **SUPPORT VOLUNTARY ENERGY EFFICIENCY STANDARDS** that facilitate greater efficiency gains without sacrificing innovation.
- ▶ **EMPOWER COMPLEMENTARY PROGRAMS**, like the Sustainable Technology Environments Program (STEP) that go beyond construction into the lifetime operation of new and existing buildings.
- ▶ **SUPPORT FUNDING** for both R&D and deployment of green ICTs such as smart grid, telepresence, guiding automations, and more.
- ▶ **ENCOURAGE GREATER ADOPTION** of telework and videoconferencing to reduce urban sprawl, ease traffic congestion, and facilitate travel substitution.

Accessibility

TIA ENCOURAGES COLLABORATION AMONG STAKEHOLDERS and the use of voluntary, consensus-based standards to increase the accessibility of technology for those with disabilities and to encourage innovation, and in doing so harness technology to open up new communications opportunities to this community.

- ▶ **GOVERNMENT MUST ADOPT PRO-COMPETITIVE POLICIES** that encourage marketplace solutions and rapid deployment of accessible technologies while incorporating technical feasibility, such as the allowance of voluntary, consensus-based standards as safe harbors for compliance with regulations, and the use of blanket waivers for classes of nascent products.
- ▶ **PROACTIVE CONSULTATIONS WITH THE DISABILITY COMMUNITY** and other stakeholders will lead to the incorporation of accessible solutions into member companies' product development process.
- ▶ **THE GOVERNMENT SHOULD PROMOTE THE DEVELOPMENT OF VOLUNTARY, CONSENSUS-BASED INDUSTRY** standards to address accessibility needs, repeating successes such as TIA-1083, which reduces magnetic interference on digital cordless phones for users with hearing aids.



Public Safety

A NATIONWIDE INTEROPERABLE BROADBAND PUBLIC SAFETY NETWORK will give emergency responders access to new realtime video and data applications that are not currently available.

- ▶ **TOP DOWN COMMAND AND CONTROL METHODS** should be rejected because they will impede the public safety users' access to the most appropriate technologies for their specific needs.
- ▶ **A ROBUST FIRSTNET NETWORK** should be developed utilizing a competitive vendor ecosystem that encourages all qualified parties to engage.
- ▶ **NECESSARY MANAGEMENT AND OVERSIGHT MECHANISMS AND STRUCTURES** should ensure appropriate services and deliverability are defined as quickly as possible to provide certainty to stakeholders.

TIA's *ICT Market Review and Forecast* New U.S. Trends, Growth Drivers

FOCUS IS ON cloud computing, machine to machine (M2M), cybersecurity, and sustainability.

- ▶ **CLOUD COMPUTING** allows a more efficient use of infrastructure and lowers operating costs for many companies.
- ▶ **M2M** provides opportunities to lower energy costs and to substitute expensive physical manufacturing and distribution with lower-cost digital distribution.
- ▶ **CYBERSECURITY** prevents the cost of data breaches that can have catastrophic effects on businesses and on national security.
- ▶ **SUSTAINABILITY** leads to reduced spending on energy.
- ▶ **STANDARDS ARE CRITICAL** in the development of these markets. In cloud computing, the development of industry standards would help alleviate security concerns. In M2M, standards are needed so that any M2M device can connect to any network. With respect to sustainability, standards are being developed to assist in economizing on energy use in buildings and to lower power usage in general.

For more information contact:

FLORENCE SUMARAY
Director, Marketing
+1.703.907.7471
fsumaray@tiaonline.org

Statistics in this publication can be found in
TIA's 2013 ICT Market Review and Forecast.

Telecommunications

- ▶ **THE GLOBAL TELECOMMUNICATIONS INDUSTRY ROSE 7.0 PERCENT IN 2012**, down from the 10.0 percent increase in 2011. International spending rose 7.2 percent in 2012, down from the 11.3 percent increase in 2011. In the United States, by contrast, growth improved to 6.2 percent from 5.9 percent in 2011, the largest gain since 2007. International regions still posted a larger increase than the United States, continuing the long-term trend. In 2012, spending in the United States exceeded the level reached in 2008.

Telecommunications Spending in the United States (\$ Billions)

Source: TIA's 2013 ICT Market Review and Forecast

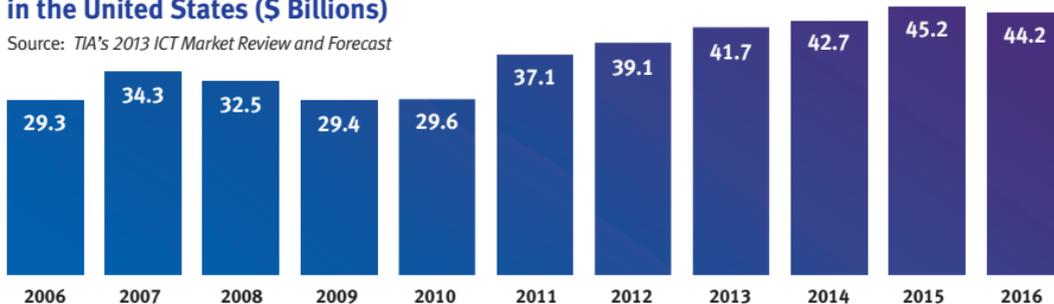


Network Equipment

- ▶ **THE INFRASTRUCTURE MARKET** grew 5.3 percent in 2012, a much slower rate than the 25.5 percent advance recorded in 2011. Spending will increase at a 3.2 percent compound annual rate, reaching \$44.2 billion in 2016.
- ▶ **CUMULATIVE BACKBONE SPENDING DURING THE NEXT FOUR YEARS** will total an estimated \$89.6 billion compared with \$62.8 billion during the past four years, a 43 percent increase.
- ▶ **ALTHOUGH MOST OF THE STIMULUS FUNDING HAD RUN OUT BY 2012**, ongoing fiber deployments to improve broadband service in both speed and coverage and to enhance wireless backhaul will continue to drive infrastructure spending.

Network Infrastructure Equipment Spending in the United States (\$ Billions)

Source: TIA's 2013 ICT Market Review and Forecast



Wireless Equipment

► WIRELESS EQUIPMENT

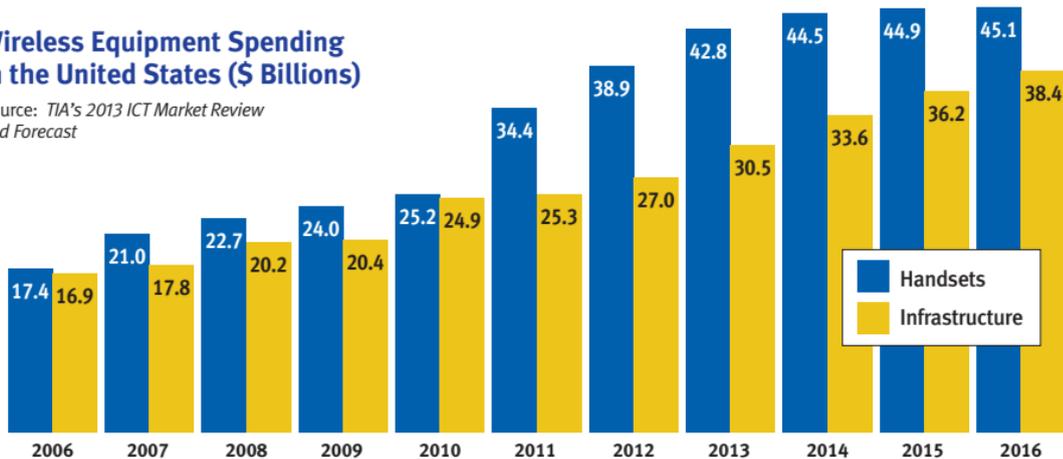
SPENDING ROSE to \$66 billion in 2012 and will be more than \$70 billion annually through 2016.

► WIRELESS INFRASTRUCTURE EQUIPMENT SPENDING

WILL GROW at a 9.2 percent compound annual rate; and wireless handset spending will grow 3.7 percent compounded annually between 2013 and 2016, totaling a combined \$83.5 billion in 2016.

Wireless Equipment Spending in the United States (\$ Billions)

Source: TIA's 2013 ICT Market Review and Forecast



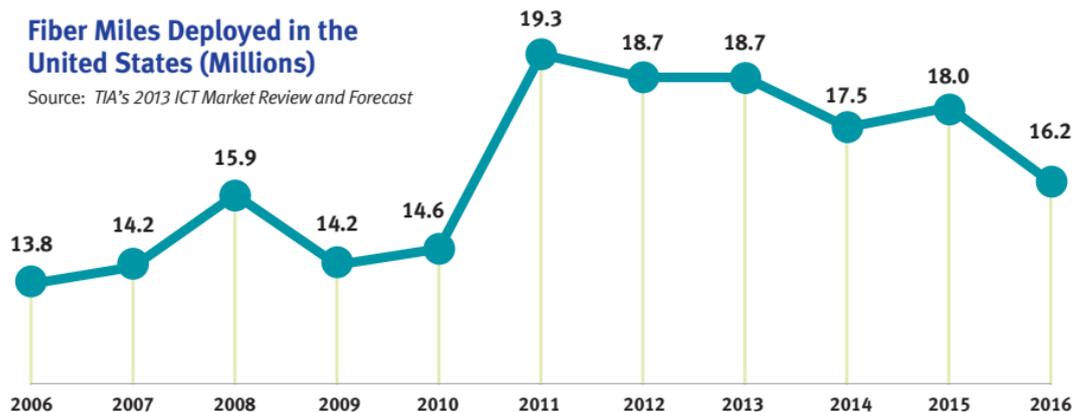
Cable

▶ **CABLE OPERATORS ARE INCREASING BANDWIDTH TO OFFER BI-DIRECTIONAL SERVICES**, including high-speed Internet, which has been augmented by installing DOCSIS 3.0 to deliver Internet speeds of up to 50 Mbps.

▶ **THE COMBINATION OF NEW SERVICE OFFERINGS BY MULTISERVICE OPERATORS**, including cable, stimulated fiber deployments in 2012 to 18.7 million fiber miles. Fiber deployments are forecast to decline at a 3.6 percent compound annual rate to 16.2 million fiber-miles in 2016.

Fiber Miles Deployed in the United States (Millions)

Source: TIA's 2013 ICT Market Review and Forecast

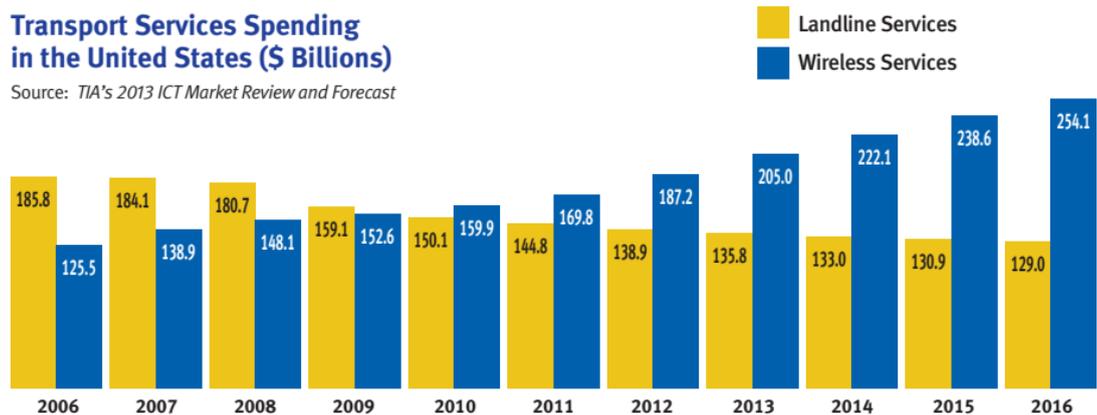


Telecommunications Services

- ▶ **OVERALL LANDLINE SERVICES SPENDING FELL 4.1 PERCENT IN 2012.** Wireless services grew 10.3 percent. SMS, photos, music, games, and wireless Internet access are growing rapidly.
- ▶ **INTERNET ACCESS AND IPTV WILL OFFSET** the decline in the landline voice services market somewhat.
- ▶ **DEVICE MANUFACTURERS WILL OFFER CONTENT-BASED SERVICES** and applications, which are fueling the demand for wireless service.

Transport Services Spending in the United States (\$ Billions)

Source: TIA's 2013 ICT Market Review and Forecast



Emerging Network Services

EMERGING NETWORK SERVICES — unified communications, videoconferencing, public room services, audioconferencing service bureau spending, and Web conferencing — are the fastest-growing components of the telecommunications market. Spending rose 18 percent to \$8.7 billion in 2012, led by an 18.1 percent increase in Web conferencing.

▶ **UNIFIED COMMUNICATIONS**

ROSE 8.1 percent to \$1.7 billion.

▶ **VIDEOCONFERENCING**

PUBLIC ROOM SERVICES INCREASED 3.2 percent to \$1.3 billion.

▶ **AUDIOCONFERENCING**

SERVICE SPENDING GREW 4.7 percent to \$3.3 billion.

▶ **WEB CONFERENCING ROSE**

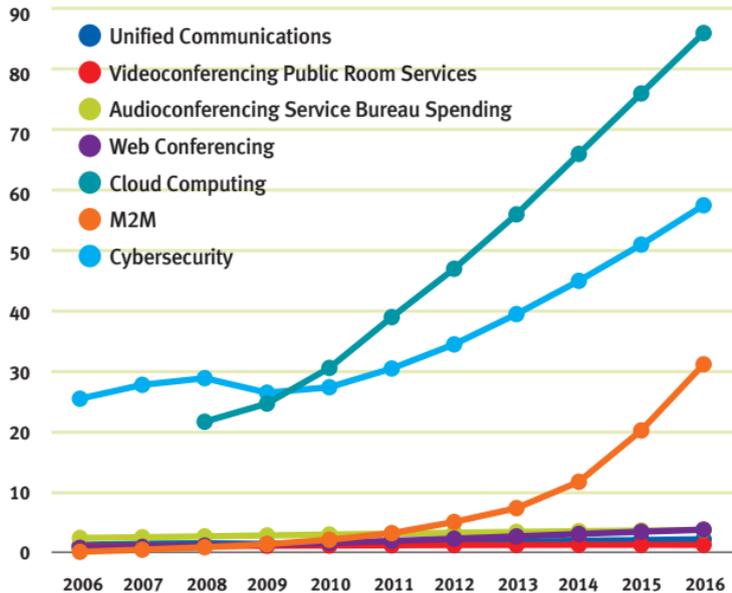
18.1 percent to \$2.4 billion.



Specialized Services

Spending on Specialized Services in the United States (\$ Billions)

Source: TIA's 2013 ICT Market Review and Forecast



Percent compound annual growth rate (CAGR) expected from 2012 to 2016 for specialized services:

Unified communications
6.8 percent CAGR

Videoconferencing
0.6 percent CAGR

Audioconferencing
3.3 percent CAGR

Web conferencing
13.1 percent CAGR

Cloud computing
16.3 percent CAGR
Cloud computing services first became available in 2008.

M2M
57.2 percent CAGR

Cybersecurity
13.6 percent CAGR

International Market

THE INTERNATIONAL MARKET CONTINUED TO REBOUND in 2012, reflecting stabilizing economic conditions following the global recession in 2009.

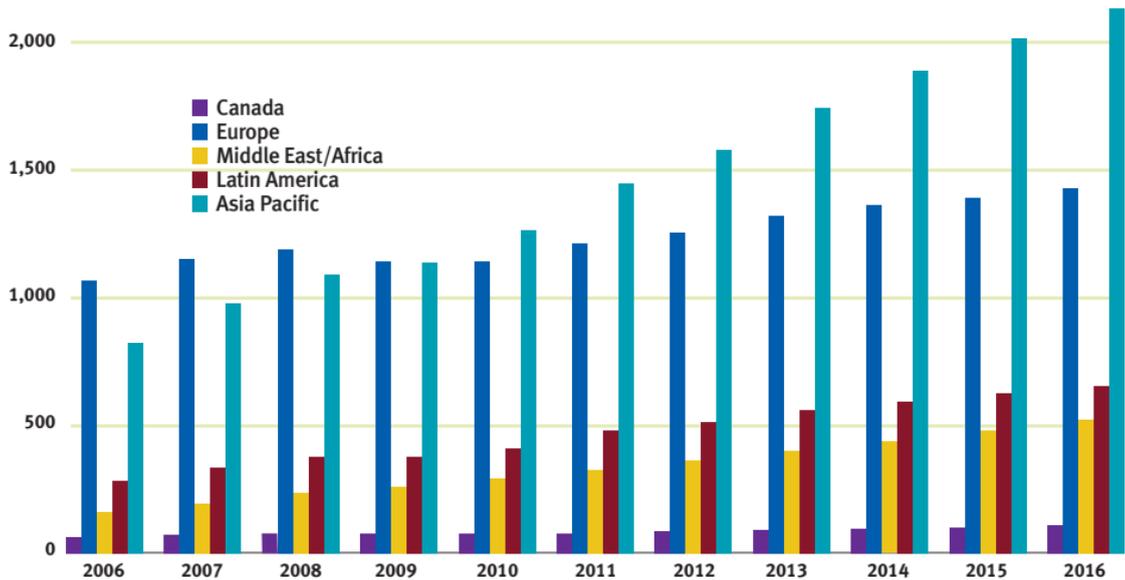
- ▶ **NATIONAL BROADBAND PLANS** throughout the world are generating investment in broadband infrastructures and extending the broadband reach to rural and other unserved areas through fixed and mobile technologies.
- ▶ **LARGE GAINS** in broadband and wireless penetration will fuel growth in the Asia Pacific, with most of the growth generated by China and India.
- ▶ **MIDDLE EAST/AFRICA** will again be the fastest-growing region during the next four years, averaging 10.7 percent growth compounded annually through 2016, fueled by double-digit gains in fixed broadband, wireless services, and equipment.



International Market

International Telecommunications Revenue by Region (\$ Billions)

Source: TIA's 2013 ICT Market Review and Forecast



TIA Standards Program

TIA IS ACCREDITED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) to develop voluntary, consensus, industry standards for a wide variety of telecommunications products and systems. TIA creates specifications for public safety radio equipment, cellular towers, data terminals, satellites, telephone terminal equipment, accessibility, VoIP equipment, structured cabling, data centers, mobile device communications, multimedia multicast, vehicular telematics, machine-to-machine communications, and smart utility mesh networks, among others.

- ▶ **SUPPORTS 12 PRODUCT-ORIENTED ENGINEERING COMMITTEES**, consisting of:
 - 85+ subcommittees and working groups;
 - Representatives from manufacturers, service providers, consultants, and end users, including federal, state and local government.
- ▶ **PROVIDES SECRETARIAT SERVICES** to groups that develop international standards, such as Third Generation Partnership Project 2 (3GPP2) and Technical Advisory Groups (TAGs) for forums such as IEC, ISO, and JTC-1.

ENGINEERING COMMITTEES

- TR-8:** Mobile and Personal Private Radio Standards
- TR-14:** Point-to-Point Communications Systems
- TR-30:** Multi-Media Access, Protocols and Interfaces
- TR-34:** Satellite Equipment and Systems
- TR-41:** User Premises Telecommunications Requirements
- TR-42:** User Premises Telecommunications Cabling Infrastructure
- TR-45:** Mobile and Personal Communications Systems
- TR-47:** Terrestrial Mobile Multimedia Multicast (TM3)
- TR-48:** Vehicular Telematics
- TR-49:** eHealthcare ICT
- TR-50:** M2M-Smart Device Communications (SDC)
- TR-51:** Smart Utility Networks



TIA Standards Mission

SUPPORT STANDARDS DEVELOPMENT

PROCESSES that are timely, cost effective, open, transparent, fair, and nondiscriminatory and driven by commercial interests to find technical solutions to communications needs.

PROMOTE PRIVATE SECTOR SOLUTIONS and commercially-oriented decisions for technology deployment.

WORK WITH TIA POLICY TO:

- ▶ Identify opportunities for the standards process to address technology issues with legislators and government entities.
- ▶ Promote government participation in the standards process as end-users.
- ▶ Work with Congress and executive agencies to ensure a level playing field for all standards worldwide.
- ▶ Provide assistance to trade officials to resolve standards-related and other technical barriers to trade.



In cooperation with BICSI, CompTIA, InfoComm, and the Communications Cable & Connectivity Association, TIA launched the standards development process of the **Sustainable Technology Environments Program (STEP)**. This effort will bring sustainability to the process of planning, designing, integrating and operating technology systems. Technology is part of the solution to the future's economy and STEP will play an important role in coordinating and enhancing the benefits that technological innovation brings to the built environment.

For more information contact:

CHERYL BLUM

Vice President,
Technology & Standards
+1.703.907.7436
cblum@tiaonline.org

HERB CONGDON, PE

Associate Vice President,
Technology & Standards
+1.703.907.7703
hcongdon@tiaonline.org

Learn more about TIA's standards activities at tiaonline.org/standards.

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ABE NEJAD

ICT Journalist/Anchor
+1.703.907.7004
anejad@tiaonline.org

CLAIRE JOHNSON

Producer/Digital Production Manager
+1.703.907.7742
cjohnson@tiaonline.org

TIA continues to lead the way for Manufacturers and Suppliers of Global Networks — and remains the clear choice for your company!

Currently in its 89th year, the Telecommunications Industry Association (TIA) represents the global information and communications technology (ICT) industry through:

- ▶ **TECHNOLOGY AND STANDARDS DEVELOPMENT**
- ▶ **POLICY AND ADVOCACY**
- ▶ **BUSINESS OPPORTUNITIES**
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JOHN JACOBS

Sr. Vice President, Membership,
Marketing & Business Development
+1.703.907.7747
jjacobs@tiaonline.org

ANCILLA BRADY

Director, Member Relations
+1.703.907.7713
abrady@tiaonline.org



TIA Members

THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION'S MEMBER COMPANIES INCLUDE THOUSANDS of information and communications technology (ICT) professionals participating in standards, government affairs, market intelligence, and product-oriented environmental compliance.

Discover how you can gain a competitive advantage in the broadband economy by leveraging TIA's full range of services by contacting TIA's Membership Department at **+1.703.907.7713** or **membership@tiaonline.org**.

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TELECOMMUNICATIONS INDUSTRY ASSOCIATION

HEADQUARTERS

1320 N. Courthouse Road, Suite 200
Arlington, VA 22201-3834
USA

Phone: + 1.703.907.7700

Fax: + 1.703.907.7727

tiaonline.org

AFFILIATE OFFICE

United States Information
Technology Office (USITO)

Suite 1104, 11th Floor, Sun Palace Building
No. 12 Taiyanggong Middle Road
Chaoyang District, Beijing 100028 PRC

info@usito.org



tiaonline.org

