



Prepared Testimony and  
Statement for the Record of

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On Behalf of  
TeleCommunication Systems, Inc.  
and  
TechAmerica

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Hearing on

The Effect of Federal Policies on Competition and Innovation

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Mr. Chairman, Ranking Member Edwards, and Members of the Subcommittee, my name is Tom Brandt, and for the past 15 years I have been the Chief Financial Officer of TeleCommunication Systems Incorporated, based in Annapolis, Maryland. Our company is in the wireless communication technology business, selling highly reliable and secure solutions to wireless carriers and government agencies including military special operations and 9-1-1 services for public safety. I work for the founder and CEO, an African American 1978 alumnus of the naval academy, who started the company in 1987 and initially grew it with the help of some SBA programs. We raised venture money in part from a Small Business Investment Company ("SBIC") in the late 90s, went public in 2000, and now employ about 1,500 people and hold more than 200 patents.

In my testimony today, I am also representing TechAmerica, the leading advocacy organization for U.S. companies committed to enterprise based on technology and innovation. My company is one of about 1,000 member companies of all sizes comprising the technology industry's only grassroots-to-global network, with presence in state capitals around the United States, Washington, D.C., Europe (Brussels) and Asia (Beijing). TechAmerica's roots go back to an initiative by David Packard in the late 1940s to link the emerging Silicon Valley to Washington.

Thank you for allowing me the privilege of sharing with you perspectives on the opportunities and challenges surrounding our nation's innovation policies. The U.S. technology industry is the driving force behind productivity growth and jobs creation in the United States and is the foundation of the global innovation economy. I appreciate this Committee's attention to this topic, and I commend you for advancing the dialogue on how our nation's innovation policies can drive growth in our economy, and enable American companies to successfully compete in the global market to meet demands for the future.

I would like to submit for the hearing record TechAmerica's "Technology Roadmap," which highlights policy areas where Congress can act to help advance America's innovation economy. Our hope is that the recommendations included here will help to inform public discussion and facilitate meaningful debate toward the development of a national technology vision and strategy.

### **The U.S. Innovation Economy**

The importance of innovation—creating new ideas, products, and services—cannot be overstated. And in this global, highly competitive economy, it is increasingly the intangible inputs of research and development (“R&D”), education, and entrepreneurial risk-taking that drive that growth. Innovation is key to creating new industries, and therefore key to the creation of American jobs.

Our country is home to institutions that have nurtured many of the best and brightest minds on the planet. And that intellectual prowess has benefited our economy in countless ways. Yet we all know that the process of bringing innovation to life is not simple. There is a critical path along which many stakeholders – including entrepreneurs, technologists and policy makers – play important roles.

Historically, our government has helped pave that path with policies that encourage innovation on many levels. Yet the global environment has changed significantly in the last decade and the United States is no longer as dominant in entrepreneurship and innovation. The best hope for the U.S. to maintain its edge in rising global competition is by fostering and expanding our most prized intellectual asset: innovation.

Over the past 30 years, innovation has given the U.S. and the rest of the world wave after wave of technological advancement and generated millions of high-skilled jobs.

On average, each tech job supports three jobs in other sectors of the economy. The multiplier effect for information technology jobs is even higher — nearly 5 to 1. Information technology has a proven track record of economic success, having recently accounted for more than a third of U.S. gross domestic product growth and nearly two-thirds of corporate capital investment.

Information and communications technologies (ICT) generate some of the fastest-growing business sectors, based on continuous innovation. The United States is the leading innovator in this space, responsible for a third of all ICT-related patents filed and over 70 percent of global software research and development. To ensure that successive waves of innovation begin in the U.S., and that U.S. workers benefit from “the next big things,” we must evolve the necessary infrastructure and environment.

The ICT sector represented by TechAmerica wants to help ensure that high quality new U.S. jobs emerge in a global, competitive and technology-based economy, through encouraging and rewarding high skill levels and entrepreneurship. Unfortunately, the U.S.'s ability to adapt, compete and innovate alongside emerging workforces in China, India and other countries is impeded by a systemically weak education system, a dearth of R&D funding, a visa policy that limits access to the brightest foreign-born minds, and a business climate heavy with regulatory and tax burdens. Our public policy should be crafted to enable the U.S. to remain the world's innovation leader.

Access to strong basic research, the best and brightest minds, access to capital, and an infrastructure that supports the entrepreneur are in fact the precise components that have historically allowed the U.S. to thrive on the innovation spectrum. And these same drivers will determine our fate going forward.

It is important to recognize that the global environment for innovation has changed dramatically in the last decade – creating both opportunities and threats to U.S. innovation. Technology has indeed made the world flat and our companies today all employ global strategies when it comes to markets, product development and operations. The global markets offer our companies tremendous growth opportunities – provided the U.S. maintains open trade provisions. Yet, at the same time, there has been a significant rise of venture capital and entrepreneurial activity in regions outside the United States such as Asia, Eastern Europe and South America. As entrepreneurialism grows on a global scale, we face a new competitive environment in which innovation can be developed anywhere.

Foreign governments are increasingly aggressive in promoting favorable tax policies, improving their legal, accounting and intellectual property structures, and boosting their R&D spending to foster innovation in their countries. The U.S. needs to meet the challenge of foreign competitors or risk losing our technological edge.

### **A Tax Code To Help Our Companies Be Globally Competitive**

Many nations have adjusted their tax codes to incentivize innovation, attract investment, and enhance the competitiveness of companies within their borders. Yet, in just days, the United States will lead the world with the highest corporate tax rate. We need to change that. Lower corporate tax rates would help U.S. companies attract capital to compete, as well as encourage

foreign companies to invest in the United States, resulting in increased employment and higher wages for American workers.

Other countries are aggressively encouraging research and development activities, but the U.S. research and development credit expired – again – at the end of last year. This incentive influences the choice of location among companies looking to open or relocate research facilities. As foreign governments actively recruit American companies to move their research operations abroad, the credit helps to encourage companies to invest in R&D using employees in the United States. It is time for Congress to make this incentive clear, predictable and permanent.

In order to grow and compete, U.S. companies must take their ingenuity and investment well beyond our borders because 95 percent of the world's population lives outside the United States. Today, even small business is global business and our nation's technology companies must be able to thrive in the global market or we risk falling further behind other world-class competitors in the tax arena. The reality is expanding operations overseas enhances U.S. productivity and is essential for future growth, and this is why TechAmerica supports moving towards a competitive territorial system. Thankfully, Congress and the Administration have begun the process of considering comprehensive tax reform, recognizing the competitive disadvantage our current system inflicts on our global businesses.

### **A Permanent and Strengthened R&D Credit**

We believe that investing in research, especially during these challenging times, is crucial to repowering the American economy. The R&D tax credit has a proven history of encouraging additional investments in research and promoting U.S.-based, high-wage job growth in companies of all sizes. It is disproportionately difficult, expensive and risky for smaller companies to engage in R&D activities, but permanent enactment of a strengthened credit would go a long way toward encouraging companies of all sizes to make R&D investments. Ultimately, it would stimulate U.S. innovation and lead to growth in jobs, wages, consumption and exports – all contributing to a stronger economy and a higher standard of living for American workers.

Strengthening and permanently extending the R&D tax credit, which expired at the end of 2011 and has yet to be renewed, would provide the certainty and resources business owners need in order to be able to plan and invest in U.S.-based research with certainty well into the future.

This will help stimulate short-term business investments with long-term benefits to the U.S. economy.

Since the R&D tax credit is only available for certain qualified research performed in the United States, it is really a U.S. jobs provision, since more than 70 percent of the benefits of the credit are attributable to the wages and salaries of workers performing research in the United States. The enactment of a strengthened and permanent credit will serve to both maintain and create new high-paying, high-skilled research jobs in the United States.

### **Federal Investment in Basic Research**

The government also has a critical role to play in the area of basic research. It is from this pipeline of scientific advances in fields such as information technology, life sciences and now, clean technology, that the technology industry has historically drawn many innovations. Often, early stage research into new discoveries is first funded with federal dollars in a university or government lab and then commercialized by angel and venture investors.

For these reasons, TechAmerica has supported the America Competes Act and continues to support the spirit in which it was passed in 2007. In order for the U.S. to maintain its competitive advantage and economic leadership, we must continue to aggressively promote a public policy agenda that rewards risk takers and embraces innovation at a national level. The United States spends more than any other nation in the world on R&D, but its relative position (measured by the share of such investment in national income) has been falling even as other countries increase their investments in research.

Investment in R&D is a significant driver of technological progress and economic growth. U.S. industry and the Federal Government are the primary pillars of financial support for the U.S. R&D. Sources of these basic research funds have historically included the NIH, NIST, DOD, DARPA and, most recently ARPA-Energy. Continuing to support federally funded research through these agencies will nurture the symbiotic relationship between the government and private investment capital. Essentially, the private sector picks up where government funding leaves off. We hope to see a continued commitment at that level or above going forward, so that American companies can bring the exciting work taking place in those labs to the global market. We also ask that policy makers continue to exhibit the same patience they have shown in the past for the high-risk and long-term nature of the innovation process. This support is critical to our ability to see our projects through to success. TechAmerica is pleased to see that

federal R&D investment would rise to \$142.2 billion under the President's FY 2013 budget request, representing a 1.2 percent or \$1.7 billion increase above FY 2012 estimated funding levels.

TechAmerica urges the Committee to remain committed to doubling the budgets of the National Science Foundation, Department of Energy Office of Science, and the National Institute of Standards and Technology labs. The President's Plan for Science and Innovation (a key pillar of A Strategy for American Innovation announced in September 2009 and revised in February 2011), the America COMPETES Act of 2007 (P.L. 110-69), and the America COMPETES Reauthorization Act of 2010 (P.L. 111-358) have all identified NSF, DOE SC, and NIST as critical to preserving America's place as the world leader in innovation. Congress and the President have shown strong support for these agencies, but appropriations in recent years have not achieved the sustained increases authorized by the COMPETES legislation.

TechAmerica supports the President's FY2013 discretionary funding request for NIST of \$857 million (excluding transfers), an increase of \$106 million over FY 2012. More than half of the proposed increased funding would be focused on advanced manufacturing research both at NIST laboratories and through a new industry-led consortia program. We believe this budget request will address pressing needs for standards and measurement work in emerging technology areas and provide seed funding to encourage industry and academia to come together to address common technology problems too large for individual institutions to tackle. Moreover, this budget is consistent with the President's Plan for Science and Innovation and the goals of the America COMPETES Reauthorization Act of 2010, both of which call for significant increases in basic federal R&D funding to make America more competitive.

TechAmerica would like to also voice support for a \$10 million NIST initiative in the President's FY2013 Budget that will support the technological infrastructure, including standards, underpinning broadband communications networks, which have become as essential to today's economy as the electrical power grid was to the Industrial Revolution. To compete effectively in this global business environment, communities and companies will need reliable, secure access to huge amounts of data, available anytime, anywhere. However, the U.S. currently lacks the technology to ensure adequate capacity to achieve a large-scale network capable of this vision. There has been a 5,000 percent growth in demand for wireless internet data in the last three years. Currently, 3 percent of wireless smart-phone customers use up to 40 percent of the total available cell-phone bandwidth causing bottlenecks in mobile broadband access. Service providers are striving to address the rapid increase in demand, but additional technologies and

approaches are needed. Advances in broadband technology or network capacity alone will not be sufficient to meet the future needs of a hyper-connected world.

This initiative will help support continued operations of the 700 MHz Public Safety Broadband Demonstration (PSBD) Network and to make modifications to allow additional use as a platform for addressing interoperability and performance questions on non-PS next generation communications technologies. It will address three key areas to enable significant innovation in communications in both the commercial and public safety sectors. Benefits expected from funding of the advanced communications initiative include the development of a U.S. broadband network with greatly expanded capacity that requires only a marginal increase in capital and operating expenditures. In addition, it is expected to establish a testbed and build collaboration with the telecommunications industry to help lay the groundwork for an interoperable public safety communications network that seamlessly delivers voice, data, and video to first responders and other emergency personnel through whatever communication avenues are available. My company is engaged in deploying next generation 9-1-1 service in several states and has routed about half the country's wireless 9-1-1 calls for the past decade, so we are highly interested and involved in ways that technology enhancements can significantly improve public safety.

### **Refinement of U.S. Intellectual Property Law**

I previously mentioned the 700 MHz Public Safety Broadband Network and TCS's significant position as a vendor of 9-1-1 wireless services. I am confident that every member of this committee recognizes the importance of 9-1-1 services, a vital national service that protects the lives and property of every American. Unfortunately, today 9-1-1 is threatened by what the Federal Trade Commission has termed Patent Assertion Entities, or "PAEs." The business model of PAEs focuses on purchasing and asserting patents against manufacturers already using the subject older technology, rather than the traditional and beneficial practice of developing and transferring new technology via purchased patents. PAEs have increasingly focused on the mandatory provision of 9-1-1 services by wireless carriers as proof of infringement with significant financial consequences for both the carriers and their 9-1-1 vendors, like TCS.

For the record, as the owner of over 200 issued patents worldwide and more than 300 pending applications, TCS supports a strong intellectual property system, and we welcomed the September 2011 passage of the Leahy-Smith America Invents Act (AIA) as a watershed achievement in advancing the U.S. intellectual property system. However, the problem of PAEs and their potential to undermine our national 9-1-1 system remains. Until it is addressed, the 9-1-1 system is at risk. I strongly encourage you to investigate and resolve the PAE 9-1-1



problem before it irreparably harms America's safety and security by disrupting our national 9-1-1 system.

### **A Highly Skilled Work Force**

In addition to supporting the research, government must also support the entrepreneurial and technological talent that brings this research to life. TechAmerica wholeheartedly supports investing to improve math and science education for U.S. students, particularly in grades K through 12. Other countries have been devoting more resources to Science, Technology, Engineering and Math (STEM) education for some time. Our understanding is that the U.S. is making strides in these areas, but we must continue our commitment to enhance the proficiency of our students in these areas.

In addition to better educating our own students, it is also critical that we ensure that the best and the brightest scientists and entrepreneurs from all over the world want to come to the United States to innovate and grow their businesses. Investors in entrepreneurial innovation have long supported immigration reform that would make it easier for highly skilled foreign born nationals to build companies in the United States.

Yet U.S. immigration policy is restrictive relative to the policies of foreign countries – while at the same time those countries are proactively growing their own entrepreneurial and innovation ecosystems. As the United States is making it more difficult for foreign scientists and entrepreneurs to enter our country, India, China and other countries are welcoming these bright minds to their shores. Unless we significantly change immigration policy for highly skilled workers, we risk losing the brightest talent to our global competitors.

For this reason, we enthusiastically support the Start Up Visa initiatives that have been introduced in both the House and the Senate. Under these bills, immigrant entrepreneurs can obtain a special visa to build their companies in the United States if they have secured venture capital financing from a qualified investor. The passage of such a bill would send a much needed signal to entrepreneurs around the world that United States wants them innovating here. Companies that are formed here drive innovation here. There is no other way to say it.

### **Investment in America's Small Innovative Start Up Companies**

Whether it's a garage, a basement, or a dorm room, every business has humble beginnings. It's not about where you start. It's where you end up. No other industry produces more, or relies on, startups more than the technology industry. Today, 1 out of every 3 new jobs is created by self-employed startup businesses. My entrepreneur employer got started with his wife and a childhood friend. According to analysis conducted by the Ewing Marion Kauffman Foundation, companies less than 5 years old accounted for nearly all net job creation in the United States between 1980 and 2005. New firms create on average approximately 3 million jobs each year.

Encouraging early-stage investment and growth in these fast-growing, entrepreneurial start-up businesses is one of the best ways Congress can help foster an environment to create new jobs.

One of the greatest challenges facing new start-up companies is gaining access to enough capital to get off the ground in the first few years. Recent Congressional action on the JOBS Act is a positive step in addressing the regulatory burdens small companies face in their efforts to go public. The JOBS Act will encourage and promote economic growth by making it easier for emerging growth companies to access capital and by easing the Initial Public Offering ("IPO") process for these companies. In particular, by providing an "on-ramp" to the public markets, the JOBS Act will provide emerging growth companies with relief from some compliance requirements that are particularly challenging and costly for small companies. A critical step in growing our company was our IPO 12 years ago, and we now employ about 5 times the 295 employees in our 2000 prospectus. We were very fortunate to raise our capital shortly before changes in the environment sharply changed access to such capital for similar stage companies since then.

TechAmerica also supports S. 1965, the Startup Act, introduced by Senator Mark Warner (D-VA) and Senator Jerry Moran (R-KS). This legislation would further address the challenges faced by American startup companies. In 2010, Congress temporarily exempted capital gains taxes on the sale of certain small-business stock held for at least five years. The Startup Act would make this exemption permanent, giving investors an incentive to partner with entrepreneurs and provide financial stability at a critical juncture of firm growth.

To further encourage business development, the Startup Act also reduces the corporate income tax on certain new businesses during the first three taxable years of profit. To fuel access to

capital, the Startup Act would examine whether or not Sarbanes-Oxley compliance could be eased for small issuers, potentially allowing the market to weigh the costs and benefits.

Another significant obstacle facing new businesses is the expense and time required to comply with government regulations. According to the Small Business Administration, firms with fewer than 20 employees spend 36 percent more per employee than larger firms to comply with federal regulations. This legislation requires all government agencies to conduct a cost-benefit analysis of all proposed new regulations with an economic impact of \$100 million or more. This analysis will determine the efficacy of the rule and its potential effects on the formation and growth of new businesses.

The Startup Act will help keep entrepreneurial talent and highly skilled workers in the U.S. by establishing a new category of visas for immigrant entrepreneurs. It also creates a pathway for foreign students who graduate from an American university with a master's or Ph.D. in science, technology, engineering or mathematics to receive a green card along with their diplomas so they can stay in this country, launch businesses, and create jobs.

We encourage the Members of the Committee to introduce a House companion measure.

### **Providing Greater Market Access for U.S. Technology Businesses**

The U.S. high-tech industry and the 5.9 million workers that it employs rely on international trade and investment for continued growth, innovation, and job creation. Engaging in international trade buoys GDP growth, enhances productivity, and boosts the ability of small businesses to innovate and create good, U.S.-based jobs.

During the past two years of economic distress, exports have helped to keep the economy afloat. High-tech exports grew 38 percent from 2002 to 2008, according to TechAmerica Foundation's *Trade in the CyberStates 2010 Report*. These technology exports supported 1 million U.S. jobs in 2009. In addition, U.S. high-tech exports were the largest overseas exports in 2009 totaling \$188 billion.

High tech accounts for nearly a quarter of all exporting small businesses, and in 2007, 94 percent of the companies exporting high-tech goods were small companies with less than 500 employees. And the role of small businesses in this area has been increasing. My company is currently deploying our wireless network technology in emerging market carriers in Latin America and Africa.

TechAmerica has been supportive of efforts by the Obama Administration to advance the Trans-Pacific Partnership (TPP) regional trade agreement. The TPP comprises the United States, Australia, Brunei, Chile, Malaysia, New Zealand, Peru, Singapore and Vietnam. These countries represent about 26 percent of global GDP and approximately 17 percent of world trade. The agreement will underpin the rules for international trade and investment in the region for years to come. Ten rounds of negotiations of the TPP agreement were held in 2011, with additional rounds scheduled for 2012. TechAmerica is an active member of the High Tech Trade Coalition which is monitoring those negotiations. TechAmerica supports new countries joining TPP with participants complying with current international norms and obligations, and committing to the high standards currently being negotiated for trade and investment, as well as intellectual property protection and enforcement, building upon the IP Chapter in the US-Korea FTA.

At the same time that the United States is seeking to press foreign governments to open their markets and eliminate barriers to trade, we need to look at U.S. policies that could help small businesses grow their exports.

Small technology companies are generally not equipped to deal with the complexities of the export controls and can be discouraged from exporting by the risks of not properly complying with the rules. We are encouraged by the steps of the Obama Administration to finally move forward with changes that we hope will address these concerns and are working with members of Congress on updated legislation.

Small businesses seeking to export to foreign markets must grapple with finding reliable business partners in other countries, navigating local laws and cultures, understanding the market for their products or services and working out financial issues. We recognize that there are many programs designed to help small businesses but feel that more can be done and better funding can be provided to strengthen the programs aimed at helping U.S. small businesses export their goods and services.

Small business innovation and new firm formation help ensure U.S. products and services remain at the cutting edge. Enforcing existing and pursuing new free trade agreements brings down barriers to entry for the goods and services of small businesses and allows them to market themselves to new consumers around the world.

## **Conclusion**

The United States has harnessed innovation to power economic growth, raise standards of living and enhance the quality of our standard of living. The federal government has played an indispensable role in this success through innovation-friendly policies and incentives. We commend those in Congress who seek to foster an ecosystem where risk taking and entrepreneurship are rewarded. Yet the bar continues to rise as many foreign governments have begun to emulate our success and seek to surpass it. Their successes mean that we no longer hold a monopoly on innovation and its benefits. Standing pat means falling behind.

Make no mistake: The race is still ours to lose. But to maintain our innovation advantage, we must rededicate ourselves to what made us successful: increasing support for basic R&D, improving math and science education, supporting immigration and opening new markets, and improving access to capital through smart tax policies. Without action on these fronts, the United States may find itself in the unfamiliar role of also-ran in the innovation race. The technology industry remains committed to doing our part to ensure this is not the case.

TechAmerica looks forward to working with members of this committee, Congress and the Administration to support the best and brightest ideas and continue to fill a robust pipeline of innovation for our country.

I thank the Committee for the opportunity to discuss these important issues with you today and I am happy to answer any questions.