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# Tech Policy Toolbox

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**ITIF** | INFORMATION TECHNOLOGY  
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As a non-partisan think tank focusing on the rapidly evolving intersection of technology, innovation, and public policy, one of the Information Technology and Innovation Foundation’s most important roles is to develop actionable ideas that policymakers can trust to foster innovation, growth, and progress. This report provides a menu of such ideas for the 114th Congress. It is not intended to be a comprehensive analysis of all tech policy issues currently up for debate, but rather lays out new ideas for Congress and the administration to consider. It is organized by topic area with short summaries of each idea and citations for additional details. For any questions or for more information, please contact ITIF at [mail@itif.org](mailto:mail@itif.org) or (202) 449-1351.

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## INNOVATION & COMPETITIVENESS

### Competitiveness

#### **Congress should create a U.S. Economic Competitiveness Commission.**

It's impossible to have a vibrant economy without a globally competitive traded sector. Dozens of nations have specific strategies to ensure they do, and so should the United States. To that end, Congress should create a 13-member commission that provides an independent assessment of U.S. competitiveness in traded sectors, including but not limited to manufacturing. A report released every other year should offer targeted recommendations to improve the country's position across key economic sectors. House and Senate leaders from the respective parties each should appoint three members and the administration one member.

*More details:* Stephen Ezell and Robert D. Atkinson, "Fifty Ways to Leave Your Competitiveness Woes Behind: A National Traded Sector Competitiveness Strategy" (Information Technology and Innovation Foundation, September 2012), <http://www2.itif.org/2012-fifty-ways-competitiveness-woes-behind.pdf>.

#### **Congress should create a new traded sector analysis unit within the federal government.**

No federal entity is responsible for competitiveness analysis. Statistical agencies see their job as accumulating facts, not analyzing them. So Congress should task the National Institute of Standards and Technology with creating a new traded-sector analysis unit that prioritizes interpretation and analysis. It should assess key indicators of overall U.S. competitiveness performance—such as FDI, jobs, output, and market share—and it should develop strategic policy road maps for key traded sectors.

*More details:* *Ibid.*

#### **Require Office of Management and Budget's (OMB's) Office of Information and Regulatory Affairs (OIRA) to incorporate a "competitiveness screen" in its review of federal regulations.**

Before global trade intensified, the federal government could afford to impose new regulations and give little thought to their impact on competitiveness. But today, regulation can increase costs to an extent that makes globally traded industries less competitive globally. To remedy this, Congress or the White House should require OIRA to review any new, non-trivial regulation to assess its impact on first-order competitiveness, and it should place the highest priority on reviewing and reforming regulations that directly affect traded sectors.

*More details:* *Ibid.*

#### **Create an OMB Office of Innovation Policy Review.**

All too often, federal agencies propose regulations with little consideration given to their effect on innovation. To remedy this, the administration or Congress should create an Office of Innovation Review within OMB. Its mission should be to serve as an "innovation champion" in the regulatory process. It should have authority to push agencies to either affirmatively promote innovation or achieve a particular regulatory objective in a manner least damaging to innovation.

*More details:* Stuart Benjamin and Arti Rai, "Structuring U.S. Innovation Policy: Creating a White House Office of Innovation Policy" (Information Technology and Innovation Foundation, June 2009), [http://www.itif.org/files/WhiteHouse\\_Innovation.pdf](http://www.itif.org/files/WhiteHouse_Innovation.pdf).

#### **Charge every federal agency with crafting and implementing an innovation strategy.**

Every Cabinet agency in the federal government should develop and carry out a comprehensive innovation strategy that covers not just how the agencies themselves can be more innovative, but also how they can spur innovation in the economy. For example, the Department of Transportation should be shifting funding toward building intelligent transportation systems, and HUD should be helping cities create the most innovative "smart city" proposals.

*More details:* "Tech Policy 2016: What the Presidential Candidates Should be Talking About" (Information Technology and Innovation Foundation, June 2015), <http://www2.itif.org/2015-tech-policy-presidential-agenda.pdf>.

**Create an interagency task force to combat corporate short-termism.**

Pressure to produce immediate returns discourages companies from investing in research and development, workforce training, and even new machinery and equipment. This destroys long-term value. The administration should create an interagency task force, led by the Department of Treasury along with the Securities and Exchange Commission, to identify steps the federal government can take to limit corporate short-termism and help corporate leaders invest for the future.

*More details: Ibid.*

**Congress or the White House should create a National Industrial Intelligence Council to better assess competitive challenges to the U.S. economy.**

The government lacks the institutional and analytic capacity to assess the threats posed when other countries practice innovation mercantilism—for example, by closing their markets to American products or by stealing American ideas—let alone the ability to recommend effective policy responses. Congress should require the White House to establish a National Industrial Intelligence Council and charge it with developing a well-considered process and structure for understanding the long-term implications of other nations’ economic development strategies on U.S. industrial competitiveness and related defense industrial base capabilities.

*More details: Ibid.*

**Education & Training****Congress should create a New Schools America fund to support states and cities in developing new kinds of schools.**

Educational improvement depends on innovation, which requires new forms of learning and schooling. This fund would encourage states to institute a new governance and funding model to support specialized schools, such as Science, Technology, Engineering, and Math (STEM) schools and those focused on project-based learning, the way Minnesota has done through its pioneering NewSchools organization. These schools should operate autonomously, not under the management of traditional schools.

*More details: Robert D. Atkinson and Merrilea Mayo, “Refueling the U.S. Innovation Economy: Fresh Approaches to STEM Education” (Information Technology and Innovation Foundation, December 2010), <http://www.itif.org/files/2010-refueling-innovation-economy.pdf>.*

**Congress should offer planning grants for regions that want to create alternative types of STEM high schools or universities.**

In recent years, a number of universities have begun offering unique approaches to STEM education. They champion experiential learning models in which all teaching is STEM- or technology-oriented and operated on an interdisciplinary basis. Students have to complete internships and solve real engineering and technical problems. Congress should support this by appropriating \$10 million for the National Science Foundation (NSF) to offer planning grants through its existing Transforming Institution Grants program.

*More details: Stephen Ezell and Robert D. Atkinson, “25 Recommendations for the 2013 America COMPETES Act Reauthorization” (Information Technology and Innovation Foundation, April 2013), <http://www2.itif.org/2013-twenty-five-policy-recs-competes-act.pdf>.*

**Award cash prizes to colleges and universities that succeed in graduating more STEM students.**

Congress should appropriate approximately \$325 million over five years for the NSF to award prizes to colleges and universities that dramatically increase the rate at which freshmen STEM students graduate with STEM degrees—and that demonstrably sustain the increase. Awards could be sized in tiers for small, mid-sized, and large universities. Alternatively, Congress could require NSF to consider an institution’s record on STEM “switchouts” and dropouts as a factor in awarding research grants.

*More details: Robert D. Atkinson, “Why the Current STEM Education Reform Strategy Won’t Work” (Information Technology and Innovation Foundation, April 2012), <http://www2.itif.org/2012-current-edu-reform-wont-work.pdf>.*

### **Congress should create a NSF-Industry Ph.D. Fellows Program.**

Doctoral fellowships are key factors in producing more Ph.D. degrees in STEM fields. But compared to the number of science and engineering graduates, NSF now awards less than half as many research fellowships as it did in the 1960s. Rather than expanding the existing NSF Graduate Research Fellowship program (currently funded at \$102 million), Congress should appropriate \$21 million per year for a new program where NSF and industry match funds on a dollar-for-dollar basis to support an additional 1,000 STEM Ph.D. fellows.

*More details:* Atkinson and Mayo, “Fresh Approaches to STEM.”

### **Congress should require colleges to report their National Survey of Student Engagement scores.**

The National Survey of Student Engagement surveys more than 1,300 colleges about student participation in the various programs and activities they offer for learning and personal development. The data can help show which institutions offer compelling educational experiences—but few publically report their scores. So Congress should require it as a “check-off” criterion in the certifications and representations section of any grant proposal that provides student support.

*More details:* Ibid.

### **Congress should add expenditures on employee training to the R&D tax credit.**

Training and ongoing education are critical drivers of productivity growth and rising worker incomes. And a key way workers get skills is through training provided on the job by employers. But U.S. companies invest much less in training today than they did a decade ago. Therefore, to spur greater workforce training while at the same time lowering the effective corporate tax rate, Congress should employee training expenses to be added to qualified research expenditures under the R&D tax credit.

*More details:* Robert D. Atkinson, “Effective Corporate Tax Reform in the Global Innovation Economy” (Information Technology and Innovation Foundation, July 2009), [http://www.itif.org/files/090723\\_CorpTax.pdf](http://www.itif.org/files/090723_CorpTax.pdf).

### **Congress should establish a Young Entrepreneurial Fellowship Program within the Small Business Administration (SBA).**

With funding of \$5 million per year, this would be a modest SBA program to support the living expenses of 25 young entrepreneurs starting new businesses for two years each. An outside panel of entrepreneurs would help SBA review proposals and business plans from applicants. The fellows would also receive mentoring and other technical assistance as they build businesses. If just one of the 25 fellows creates a successful enterprise, the program would likely pay for itself in job creation and increased tax revenue.

*More details:* Democratic Policy Committee, “Fresh 50 x 5: 250 New Ideas for Senate Democrats” (annual caucus report incorporating recommendation from Rob Atkinson at the Information Technology and Innovation Foundation, 2007).

## **Manufacturing**

### **Congress should create a national system of “manufacturing universities.”**

Much as it did in the 1860s to establish land-grant colleges for “agriculture and the mechanic arts,” Congress should establish an initiative to designate 20 institutions of higher education as “U.S. Manufacturing Universities” as part of a push to strengthen the country’s position in the increasingly innovation-driven global economy. They would revamp their engineering programs with particular emphasis on work that is relevant to manufacturing firms and provide engineering students with real-world work experience.

*More details:* Robert D. Atkinson and Stephen Ezell, “Cut to Invest: Support the Designation of 20 ‘U.S. Manufacturing Universities’” (Brookings Institution, “Remaking Federalism | Renewing the Economy,” January 2013), <http://www.brookings.edu/about/programs/metro/remaking-federalism>.

**Create Manufacturing Reinvestment Accounts for small and mid-sized enterprises.**

Congress should establish a 401(k)-like deferred-investment program that would give small and mid-sized manufacturers greater resources to bootstrap themselves by allowing them to make tax-deferred investments through manufacturing reinvestment accounts. The funds would be available for tax-free withdrawal if used for research and development, workforce training, or capital equipment investments. Connecticut has already put such a program in place.

*More details:* Ezell and Atkinson, “National Traded Sector Competitiveness.”

**Congress and the SBA should assist small and medium-sized enterprises in traded sectors in obtaining access to credit, in part by creating a 95 percent loan guarantee program.**

Particularly in the wake of the recession, small manufacturers are having a difficult time accessing credit from financial institutions. To help small manufacturers that have work orders in hand get credit, Congress should enact a 95 percent loan guarantee program for small manufacturers under the SBA 7(a) guarantee program. The Federal Reserve also should consider relaxing some of the stringent guidelines it has placed on local banks with regard to the liquidity ratios SME manufacturers must meet to be eligible for commercial loans.

*More details:* Ibid.

**Congress should direct the Small Business Administration to shift its focus toward traded-sector firms.**

The SBA treats all industries alike in its funding priorities, but some play a bigger role than others in driving economic growth and job creation, particularly those in industries that engage in global trade. Congress should require the SBA to analyze all of its financing by sector and develop a plan to significantly increase the share going to traded-sector firms. Congress should then require that a significant share of SBA lending—both guarantees and direct lending—go to fund scale-up activities for small and mid-sized traded-sector firms.

*More details:* Ibid.

**Taxes****Offer young, innovative firms refundable R&D tax credits in lieu of carry-forward or carry-backward provisions on business losses.**

Investing in R&D is risky, but it creates large social and economic benefits. That is why the United States and most other countries offer R&D incentives. Unfortunately, the incentives only benefit firms that are profitable. Offering refundable R&D tax credits in lieu of using carry-forward or carry-backward provisions on business losses will help young firms that aren't yet making money. Australia, Canada, France, Norway, and the United Kingdom have already adopted this method of incentivizing R&D in young innovative firms.

*More details:* Robert D. Atkinson and Adams Nager, “The 2014 State New Economy Index” (Information Technology and Innovation Foundation, June 2014), <http://www2.itif.org/2014-state-new-economy-index.pdf>.

**Congress should establish an investment tax credit.**

Private sector investment in new tools has dropped 30 percent in the last 30 years. That must change if we are going to spur productivity growth. Congress should consider establishing an investment tax credit modeled on the Alternative Simplified R&D Credit, which provides a credit of 14 percent on R&D expenditures above 50 percent of the previous three-year average. An investment tax credit could provide a credit (at a lower rate) on all qualifying capital expenditures above 75 percent of the previous three-year average.

*More details:* Tax Reform Options: Incentives for Capital Investment and Manufacturing, 112th Cong. (2012) (statement of Robert D. Atkinson, President, Information Technology and Innovation Foundation), <http://www2.itif.org/2012-senate-finance-manufacturing.pdf>.

### **Congress should increase the Alternative Simplified R&D Credit to boost private R&D.**

The U.S. R&D credit is far less generous than that of most other countries. Congress should either increase the Alternative Simplified R&D Credit from 14 percent to 20 percent—or expand it by enacting a three-tiered credit for qualified expenses that are 50 percent, 75 percent, or 100 percent above firms’ previous three-year averages. At the low end, they would continue to receive a 14 percent credit; in the middle band, they could receive a 20 percent credit; and at the high end, they could earn a 40 percent credit.

*More details:* Robert D. Atkinson, “Expanding the R&E Tax Credit to Drive Innovation, Competitiveness and Prosperity” (Information Technology and Innovation Foundation, July 2007), <http://www.itif.org/files/AtkinsonRETaxCreditJTT.pdf>.

### **Broaden and expand the R&D credit for collaborative research.**

The United States provides a 20 percent credit for collaborative R&D, but it only applies to energy research. Congress should eliminate the energy restriction. Participating in research consortia, whether with companies or universities, has a positive impact on firms’ own R&D investments and productivity, and most collaborative research tends to be more basic and exploratory. Other countries, including Canada, Denmark, Hungary, Japan, France, Norway, Spain and the United Kingdom, already provide more generous incentives.

*More details:* Atkinson, “Effective Corporate Tax Reform.”

### **Congress should expand foreign trade zones to include a value-added tax incentive.**

Congress should include a value-added tax (VAT) incentive for investing in foreign trade zones. At least 143 nations have VATs, which have the advantage of being border adjustable, meaning that exports are not taxed but imports are. This would improve U.S. competitive advantage. If Congress created a VAT in foreign trade zones, establishments in those places would be eligible to pay VAT taxes instead of corporate income taxes, and they would be waived on all foreign exports.

*More details:* Ezell and Atkinson, “National Traded Sector Competitiveness.”

### **Create global knowledge investment zones to attract foreign direct investment.**

The federal government should enable a limited number of global knowledge investment zones in and around research agglomerations (e.g., Research Triangle, NC; Rochester, NY; or Ames, Iowa) to attract high-value-added foreign direct investment. They would compete for the designation by offering incentives such as property tax waivers, and firms eligible to relocate there would receive a generous mix of benefits to spur innovation and jobs, including special R&D tax credits, streamlined access to university technology, and visa preferences.

*More details:* *Ibid.*

### **Similar to countries with so-called “patent box” regimes, Congress should allow U.S. companies to pay a significantly lower corporate tax rate on income from innovation-based products.**

“Patent boxes” are among the most interesting developments in the race for global competitiveness. So named because they appear as check boxes on tax forms, they allow corporate income from the sale of patented products to be taxed at lower rates than other income. If designed to link the incentive to conducting R&D or producing innovation-based products domestically, it would go even further in spurring innovation-based U.S. job creation. By lowering the effective corporate tax rate for knowledge-based firms located in the United States, an “innovation box” also would make it easier for them to take on competitors in other nations that provide robust innovation incentives.

*More details:* Robert D. Atkinson and Scott M. Andes, “Patent Boxes: Innovation in Tax Policy and Tax Policy for Innovation” (Information Technology and Innovation Foundation, October 2011), <http://www.itif.org/files/2011-patent-box-final.pdf>.

## Tech Transfer

### **Congress should direct NSF to establish stronger university entrepreneurship metrics and use them to provide stronger incentives for commercializing research.**

Congress should direct NSF to partner with the National Institute of Standards and Technology (NIST) to develop a metric for universities to report entrepreneurship and commercialization information annually, including data on new business starts by faculty, spin-offs, license agreements, patenting, and industrial funding of research. Congress should further direct agencies to factor these metrics into their decisions to award research funds.

*More details:* Ezell and Atkinson, “National Traded Sector Competitiveness.”

### **Congress should fund a pilot program supporting experimental approaches to technology transfer and commercialization.**

A number of organizations are experimenting with novel approaches to bolstering technology transfer from universities (and national laboratories) to industry and accelerating commercialization. Congress should support these novel approaches by including \$5 million in the reauthorization of the America COMPETES Act to fund experimental programs through a grant process managed by the Commerce Department’s Office of Innovation and Entrepreneurship.

*More details:* Ezell and Atkinson, “2013 America COMPETES Act.”

### **Congress should create an “Innovation Voucher” program operated by NIST.**

As in almost a dozen other countries, these vouchers would spur innovation and stimulate knowledge transfer by allowing small and mid-sized enterprises to “buy” expertise from universities, national labs, and research institutions to conduct studies, analyze the innovation potential of new technologies, etc. The vouchers could be introduced at either the federal or state level, but Congress should facilitate this by authorizing \$20 million for NIST to fund a pilot program that select states would operate with matching funds.

*More details:* Ezell and Atkinson, “National Traded Sector Competitiveness.”

### **Congress should create a Spurring Commercialization of Our Nation’s Research program.**

The current system for funding research pays too little attention to commercialization. Congress should establish a program that automatically sets aside 0.3 percent of federal research budgets—about \$250 million per year—to fund university, federal laboratory, and state technology commercialization and innovation efforts. Half would go to universities and federal laboratories for mentoring, entrepreneurship clubs and curricula, seed grants, etc., and half would go to match state programs.

*More details:* *Ibid.*

## IT & DATA

### Cybersecurity

#### **Require the federal government to offer an electronic identification to U.S. residents.**

The government should spur the supply of e-IDs by directing a federal agency to offer them to U.S. residents for a reasonable fee. Individuals should be able to use e-IDs to prove their identities, or attributes about their identities, to electronic systems. Both the State Department and the Department of Homeland Security have systems and processes in place that can be adapted to issue e-IDs. They could be offered as new tokens, such as smartcards or software certificates for mobile phones, rather than on existing ones, such as passports.

*More details:* Daniel Castro, “Explaining International IT Application Leadership: Electronic Identification Systems” (Information Technology and Innovation Foundation, September 2011), <http://www.itif.org/files/2011-e-id-report-final.pdf>.



**Congress should create a robust national standard for data breach notification.**

Congress should establish a uniform federal standard for data breach notification to extricate consumers from the current patchwork of different state requirements that provide uneven protection. Congress should reject all attempts to simply add an additional layer of regulation that would not benefit consumers or industry.

*More details:* Daniel Castro and Alan McQuinn, “Why we need a robust national standard for data breach notification,” Christian Science Monitor, June 10, 2015, <http://www.csmonitor.com/World/Passcode/Passcode-Voices/2015/0610/Opinion-Why-we-need-a-robust-national-standard-for-data-breach-notification>.

**Data Innovation****Congress should codify open-government data requirements.**

Opening up government data for public use enables substantial economic and social benefits and can be a valuable tool to reduce fraud, waste, and abuse. However, all open-data requirements for the federal government are the result of executive actions and thus do not carry the weight of the law. Congress should pass legislation that codifies and improves on these requirements and defines publishing open data as an official responsibility of federal agencies.

*More details:* Daniel Castro and Joshua New, “Accelerating Data Innovation: A Legislative Agenda for Congress” (Information Technology and Innovation Foundation, Center for Data Innovation, May 2015), <http://www2.datainnovation.org/2015-data-innovation-agenda.pdf>.

**Congress should require financial regulators to adopt modern data standards.**

SEC and other financial regulatory agencies have adopted modern, machine-readable, structured data standards for their corporate reporting requirements, but still also require outdated and redundant unstructured data formats, which limits the utility of the data for regulators and the financial sector alike. Congress should require all financial regulatory agencies to adopt modern data-reporting standards and abandon outdated, less useful formats.

*More details:* Ibid.

**Improve the management of geospatial data.**

It is difficult to understand what geospatial data various agencies collect and how these agencies invest in geospatial data infrastructure. This leads agencies to duplicate efforts and waste resources, and it impedes data sharing. Previous coordination efforts have failed to solve the problem. Congress should direct OMB to improve oversight of geospatial data coordination efforts, require agencies to report geospatial data investments in their budget submissions, and encourage local, state, and federal collaboration and data sharing.

*More details:* Ibid.

**Congress should develop robust data on U.S. coastlines.**

Geospatial data on America’s 95,000 miles of coastlines is inaccurate and dated, despite its critical importance to the economy, infrastructure planning, disaster response, and the environment. Congress should create a national coastal mapping information platform that allows the National Oceanic and Atmospheric Administration (NOAA) and other state and federal agencies to develop accurate geospatial data on coastlines and share this data with each other and the public.

*More details:* Ibid.

**Congress should improve education data reporting by upgrading statewide longitudinal data systems.**

Federal funding helps states build and manage statewide longitudinal data systems (SLDS) to collect and manage data on a student’s path through the education system. However, these systems vary greatly between states, often collect incomplete data, and aggregate data to the point where it loses significant value. Congress should mandate that current and future rounds of SLDS grant funding require states to incorporate early learning-through-workforce data in their systems, and make this data as usable as possible.

*More details:* Ibid.

**Congress should establish a globally competitive smart cities project.**

The United States is missing an opportunity to be a global leader in smart cities—cities that rely on networked sensors and data technologies to drive decision-making and improve municipal services and infrastructure, including transportation—due in part to a lack of federal support or guidance. Congress should establish a smart-city pilot program and funding mechanism to spur the development of comprehensive smart-city services that use the Internet of Things.

*More details: Ibid.*

**Establish a national Internet of Things strategy.**

The private sector is developing connected technologies to support smart homes, cities, and infrastructure, but these advancements are piecemeal and fragmented. To encourage a more comprehensive, systematic approach to the Internet of Things, the White House should develop a national strategy that spurs public and private adoption of the Internet of Things.

*More details: Ibid.*

**Internet****Congress should establish a single, national license for telehealth providers.**

Complex state licensing requirements prevent health care providers licensed in one state from providing telehealth services in another. To address this challenge and further enhance development of telehealth services, Congress should establish a single, national license for telehealth providers. For those concerned about infringing on states' rights, the legislation could have a sunset provision if states later create a multistate compact adopting a nationwide licensing standard.

*More details: Daniel Castro et al., "Unlocking the Potential of Physician-to-Patient Telehealth Services" (Information Technology and Innovation Foundation, May 2014), <http://www2.itif.org/2014-unlocking-potential-physician-patient-telehealth.pdf>.*

**Congress should pass Anti-SLAPP legislation to Protect Public Speech Online.**

Congress should pass a federal legislation to remedy strategic lawsuits against public participation (known as SLAPPs) by creating a baseline level of protection for citizens' rights of petition and free expression. A SLAPP effectively censors public speech by invoking the court system to intimidate critics. By enacting legislation, the federal government can both protect the rights of individuals and enable e-commerce to flourish.

*More details: Daniel Castro and Laura Drees, "Why We need Federal Legislation To Protect Public Speech Online," Information Technology and Innovation Foundation, May 2015, <http://www2.itif.org/2015-anti-slapp.pdf>.*

**Privacy****Congress should reform the Electronic Communications Privacy Act (ECPA) to ensure citizens have a right to privacy for electronic data whether it is stored on a device or remotely in the cloud.**

ECPA was enacted in 1986 and has not kept pace with the advancement of technology. For example, there are different levels of protection afforded to the privacy of an individual's data based on where the data is stored and how long the data has been stored. Where possible, the privacy of an individual's communication should be the same regardless of the type of technology used to facilitate the communication.

*More details: Robert D. Atkinson et al., "Winning the Race 2012 Memos" (Information Technology and Innovation Foundation, September 2012), <http://www2.itif.org/2012-top-recommendations-obama-administration.pdf>.*

### **The administration should engage with U.S. trade partners to create a “Geneva Convention on the Status of Data.”**

The United States should engage with its trade partners to establish international legal standards for government access to data through a “Geneva Convention on the Status of Data.” This would create a multilateral agreement establishing international rules for transparency, settling questions of jurisdiction, producing better coordination of international law enforcement requests, and limiting unnecessary access by governments to citizens of other countries. Only by working to establish a global pact can countries hold each other accountable on these issues in the future.

*More details:* Daniel Castro and Alan McQuinn, “Beyond the USA Freedom Act: How U.S. Surveillance Still Subverts U.S. Competitiveness,” (Information Technology and Innovation Foundation, June 2015), <http://www2.itif.org/2015-beyond-usa-freedom-act.pdf>.

## **Transportation**

### **Congress should prioritize intelligent transportation systems by adopting a new “Cement & Chips” approach to infrastructure funding.**

Intelligent transportation systems—the application of information and communications technologies to bring actionable, real-time intelligence to every actor and asset in a transportation network—deliver a cost-benefit ratio at least nine times higher than traditional highway infrastructure investments. Congress should prioritize ITS deployments in the surface transportation reauthorization bill by devoting no less than 5 percent of Highway Trust Funds allocated to states to support digital and ITS-based infrastructure projects.

*More details:* Stephen J. Ezell and Robert D. Atkinson, “From Concrete to Chips: Bringing the Surface Transportation Reauthorization Act Into the Digital Age” (Information Technology and Innovation Foundation, May 2015), <http://www2.itif.org/2015-concrete-to-chips.pdf>.

### **Congress should encourage deployment of intelligent systems by requiring the Transportation Department to provide incentives through the federal highway program for states to adopt tolling.**

Tolling can play a key role in generating the funding to pay for expanded, more efficient roadway capacity. But too many states do not want to support toll-funded projects because they fear public opposition, despite the fact that the public usually supports toll projects that are introduced. Lowering the share of federal funding for non-toll projects from the current 80 percent share to 60 percent, while funding the full 80 percent for toll projects, would provide a stronger incentive for states to establish more toll projects.

*More details:* *Ibid.*

## **TELECOMMUNICATIONS**

### **The National Telecommunications and Information Administration (NTIA) should create a digital literacy and broadband adoption clearinghouse.**

One challenge in expanding the scope and effectiveness of community-based digital literacy and broadband adoption programs is that different communities and organizations often invest in what amounts to “reinventing the wheel.” There is a need for a national organization to track effective practices and compile and disseminate shared tools (e.g., curricula, how-to manuals, and software) that can be easily customized for local initiatives. The NTIA should fund an organization to provide these shared services.

*More details:* Robert D. Atkinson, “Policies to Increase Broadband Adoption at Home” (Information Technology and Innovation Foundation, November 2009), <http://www.itif.org/files/2009-demand-side-policies.pdf>.

### **Congress should expand the Spectrum Relocation Fund.**

The proliferation of wireless technologies, especially wireless broadband, has been a boon to the U.S. economy. Against this backdrop, the time is ripe to improve mechanisms to repurpose existing spectrum allocations. To that end, Congress should expand the Spectrum Relocation Fund to fund relocation studies, general planning of relocation and/or sharing, and research into new, more efficient equipment for federal spectrum users.

*More details:* Robert D. Atkinson and Douglas Brake (comments to the U.S. House Energy and Commerce Committee, April 25, 2014), <http://www2.itif.org/2014-spectrum-white-paper-comments.pdf>.

**Congress should develop a spectrum pipeline.**

Spectrum is a key input to important general-purpose technologies such as mobile broadband and the Internet of Things. To best leverage their potential, Congress should work with the National Telecommunications and Information Administration to develop a long-term pipeline of spectrum to be repurposed for wireless broadband. This spectrum should include a mix of both licensed and unlicensed use.

*More details:* *Ibid;* Doug Brake, “Coase and WiFi: The Law and Economics of Unlicensed Spectrum” (Information Technology and Innovation Foundation, January 2015), <http://www2.itif.org/2015-coase-wifi.pdf>.

**TRADE & GLOBALIZATION****Congress should update the charter of the Committee on Foreign Investment in the United States (CFIUS) and give it more resources to address the realities of modern state capitalism.**

CFIUS reviews the potential impact of transactions that give foreign entities control of U.S. businesses. Examiners currently review covered transactions on a case-by-case basis. But Congress should update the CFIUS charter to address the systemic threats posed by modern, state capitalism—particularly state-owned enterprises. Examiners should assess transactions in the broader context of their impact on the whole U.S. defense and industrial base. Congress also should give them more time and resources.

*More details:* Ezell and Atkinson, “National Traded Sector Competitiveness.”

**Create an Office of Globalization Strategy within USTR.**

Too often the U.S. Trade Representative (USTR) fights tariff or trade agreement wars of the past. It is not set up, either institutionally or philosophically, to fight the current war against rampant innovation mercantilism fueled by non-tariff barriers. To help address this, Congress should appropriate \$5 million to create an Office of Globalization Strategy within USTR. Similar to the State Department’s Office of Policy Planning, it would be charged with focusing on U.S. trade policy in the context of globalization and competitiveness.

*More details:* Robert D. Atkinson, “Enough is Enough: Confronting Chinese Innovation Mercantilism” (Information Technology and Innovation Foundation, February 2012), <http://www2.itif.org/2012-enough-enough-chinese-mercantilism.pdf>.

**Within USTR Congress should create an ambassador-level U.S. trade enforcement chief and a trade enforcement working group.**

Creating these new positions would send a clear signal that a key part of USTR’s job is to aggressively bring actions against other nations that are engaged in forms of technology mercantilism that seek to expand domestic innovation capacity and advanced industry exports by manipulating the global trading system.

*More details:* Michelle A. Wein, Stephen J. Ezell, and Robert D. Atkinson, “The Global Mercantilist Index: A New Approach to Ranking Nations’ Trade Policies,” (Information Technology and Innovation Foundation, October 2014), <http://www2.itif.org/2014-general-mercantilist-index.pdf>.

**Congress should institute a 25 percent tax credit for company expenditures for bringing WTO cases.**

Government cannot fully investigate all potential World Trade Organization (WTO) cases on its own. The U.S. private sector is deeply engaged in the problems caused by unfair trade practices, while the government is a step away. Companies do not do more because they have an incentive to be “free riders”—taking advantage of cases filed by the government or prepared by other companies. Companies that do help bring cases are acting on behalf of the U.S. government. So what’s good for GM is, in this case, good for the country.

*More details:* Julia A. Hedlund and Robert D. Atkinson, “The Rise of the New Mercantilists: Unfair Trade Practices in the Innovation Economy” (Information Technology and Innovation Foundation, June 2007), <http://www.itif.org/files/ITMercantilism.pdf>.

**Congress should call on the administration to produce an annual Global Mercantilist Index report that comprehensively documents and ranks trade barriers imposed by America's trading partners.**

USTR's Special 301 Report provides an annual review of countries that maintain inadequate intellectual property protections and enforcement mechanisms, and its National Trade Estimate Report on Foreign Trade Barriers (NTE) provides an effective inventory of significant foreign barriers to U.S. exports and investment. But America lacks a consolidated report that comprehensively identifies all of the innovation mercantilist policies of America's trading partners and ranks the worst offenders.

*More details:* Wein, Ezell, and Atkinson, "Ranking Nations' Trade Policies."

**Congress should increase the resources available for USTR, the Interagency Trade Enforcement Center (ITEC), and the International Trade Administration (ITA) to negotiate new trade agreements and bolster enforcement activities.**

USTR and ITEC are under-resourced, so they lack the capacity to think strategically about the implications of foreign economic and trade policies, and they can't pursue trade enforcement activities as vigorously as is necessary to counter new forms of protectionism. Congress should increase USTR funding to match the administration's FY 2015 budget request of \$56 million and fund ITEC and ITA at the levels proposed in the administration's FY 2016 budget request.

*More details:* *Ibid.*