



Rewiring the Federal Government for Competitiveness

A New Cabinet Department for the 21st Century

Jonathan Sallet and Sean Pool January 2012

The first report in a series on U.S. science and economic competitiveness from the
Doing What Works and Science Progress projects at the Center for American Progress

About this series on U.S. science and economic competitiveness

The U.S. Congress in late 2010 asked the Department of Commerce to complete two studies as part of the reauthorization of the America COMPETES Act. The first, which was released on January 6th, 2012, at the Center for American Progress, focuses on U.S. competitiveness and innovation. The second, due to Congress in early 2013, offers specific recommendations for developing a 10-year national innovation and competitiveness strategy.

We applaud the commissioning of these reports but believe we cannot afford to wait that long to take action. That's why we convened in the spring of 2011 the group of experts listed on the following page. We spent two days in wide-ranging discussion about the competitive strengths and weaknesses of our nation's scientific endeavors and our economy, before settling upon the topics that constitute the series of reports we publish here. Each paper in the series looks at a different pillar supporting U.S. science and economic competitiveness in a globally competitive economy:

- “Rewiring the Federal Government for Competitiveness”
- “Economic Intelligence”
- “Universities in Innovation Networks”
- “Manufacturers in Innovation Networks”
- “Building a Technically Skilled Workforce”
- “Immigration for Innovation”

The end result, we believe, is a set of recommendations that the Obama administration and Congress can adopt to help the United States retain its economic and innovation leadership and ensure that all Americans have the opportunity to prosper and flourish now and well into the 21st century.

Many of our recommendations are sure to spark deep resistance in Washington, not least our proposal to reform a number of federal agencies so that our government works more effectively and efficiently in the service of greater U.S. economic competitiveness and innovation. This and other proposals are sure to meet resistance on Capitol Hill, where different congressional committees hold sway over different federal agencies and their policy mandates. That's why we open each of our reports with this one overarching recommendation: Congress and President Obama should appoint a special commission to recommend reforms that are packaged together for a single up-or-down vote in Congress. In this way, thorough-going reform is assured.

This new commission may not adopt some of the proposals put forth in this series on science and economic competitiveness. But we look forward to sharing our vision with policymakers as well as the American people. President Obama gets it right when he says, “To win the future, we will have to out-innovate, out-educate, and out-build” our competitor nations. We need to start now.

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Introduction and summary

One fact and one imperative appear to be on a collision course. Federal spending will decrease in the coming years, yet the importance of boosting our nation's science and economic competitiveness cannot be overstated. How do we reconcile the two?

The traditional language used in such circumstances is to seek more bang for the buck. But even that's not good enough anymore. The federal budget has to deliver the "best" for the buck, meshing the most efficient use of taxpayer resources with the most effective structure. That is particularly true where the federal government works with businesses, workers, communities, universities, and state and local governments to grow our economy. The historical evolution of federal functions and the jurisdictional scope of congressional committees no longer justify the current grab-bag organization of trade, technology, economic growth, and workforce functions in our federal government.

Today, there are more than 3,000 federal assistance programs that provide grants, loans, credit enhancements, and financing and technical assistance to firms, educational institutions, nonprofits, and local governments to pursue job-creating activities related to science and economic competitiveness. These programs are currently administered separately by the Economic Development Administration, Employment and Training Administration, Small Business Administration, Department of Housing and Urban Development, Department of Agriculture, and a swath of other federal agencies. Beyond assistance programs, other federal efforts that affect competitiveness—such as industry contracts, regulatory frameworks, and existing management structures—are equally fragmented.

That is why we propose reorganizing the functions of the Department of Commerce, moving significant portions of the current agency to other parts of the executive branch, and bringing in competitiveness-relevant functions from agencies outside the Department of Commerce. The purpose: to create a new,

focused Department of Competitiveness that integrates federal policy around four interconnected areas of competitiveness:

- Trade
- Technology
- Economic growth
- Workforce development

Where federal efforts are focused on general-purpose outcomes, such as export promotion and infrastructure technologies, we suggest that they be placed within the new department to boost their effectiveness. Where federal efforts are specialized and mission-specific but share overlapping constituencies with the new department's work, we propose the creation of a new "Common Application"—a single point of access to related federal programs—to ensure that programs also work smoothly across governmental agencies in a manner that is most convenient for their users, such as small businesses and universities.

It is a testament to American ingenuity and our talented people, within and outside government, that we get the outcomes that we do from the many disjointed existing efforts. Our science successes range from the sequencing of the human genome to social networking technologies, and our economic successes range from our nation's leading edge biosciences industries to the job-creating power of new industries proliferating across the Internet. Yet the press of global competition requires that we do better—much better.

To its credit, the Obama administration, recognizing the disjointedness of these many different programs, has launched a series of initiatives to harness the best of these efforts into a new national innovation and competitiveness strategy for the 21st century.¹ President Obama has also issued a presidential memorandum instructing agencies to assess possibilities for government reform for competitiveness.² And already likeminded federal agencies with missions and money that clearly overlap are teaming up to offer competitive grants to develop cutting-edge technologies and the workforce needed to commercialize them in energy efficiency, advanced nuclear technology, and solar-made fuels, just to name a few.³ These efforts have another common purpose—to tap the comparative advantages of key regional economies and scientific centers of learning so that federal efforts align with the unique competitive strengths of our nation—our bottom-up scientific development and economic engine.

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These competitive-grant programs offer policymakers some clear lessons on how our federal government can play to the strengths of our scientists, our engineers, our entrepreneurs, our financiers, our experienced workforce, and our eager students at universities, community colleges, and high schools across the country. What's missing is a federal government structure that also plays to these strengths, is institutionalized effectively, and delivers efficient and competitive federal funding to fuel the bottom-up economic capabilities of our economy.

Simply put, government structures from the 19th and 20th centuries no longer conform to the demands of the 21st. Budget exigencies and economic-growth objectives require that the economic-growth efforts of the federal government be reconstituted so that our nation:

- Makes the most efficient use of federal resources
- Aligns most effectively with the businesses that create business plans and the state and local governments that implement regional growth strategies
- Encourages bottom-up growth strategies attuned to the unique needs of the United States' many regional economies

There has never been a U.S. cabinet-level agency like the one we propose. And there has never been a time when it is needed more than it is today. This new department would retain many of the existing functions of the Department of Commerce centered on economic growth and business formation, but would add to their critical mass while reducing redundancies across the federal government. Bringing together key competitiveness functions around trade, technology, training, and economic growth under one umbrella will elevate the effectiveness and the status of the newly created department within the government, and increase the influence of its secretary in the cabinet.

Today, national macroeconomic policies are managed by the White House, the Department of the Treasury, and the independent Federal Reserve Board. Mission-specific economic policies find their home in agencies that include the Departments of Education, Energy, Housing, Labor, and Defense, and the National Institutes of Health. But economic growth is not simply a matter of macroeconomic policy plus the sum total of mission-specific policies. The creation of businesses, the hiring and training of workers, and the growth of communities stem as well from opportunities fostered by governments seeking to boost economic growth in all sectors of the economy in all the different parts of our nation.

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Crafting a new Department of Competitiveness would align federal programs more effectively and efficiently with the realities of our uniquely American competitive strengths. That process can start right now, before legislation is passed, with an executive order that, as explained below, improves the efficiency of current microeconomic policies. And that same goal would be the charge of the new Department of Competitiveness.

Any plan to revamp the Department of Commerce must ultimately find a home for the National Oceanic and Atmospheric Administration, or NOAA. A recommendation about the most appropriate location for NOAA is beyond the scope of this report. But regardless of its ultimate home within the bureaucratic landscape, NOAA must maintain its structural integrity and fiercely protect the preeminent role of science in management of our nation's oceanic and atmospheric resources. Further, NOAA must ensure that its regulatory decisions remain free of undue pressure from external sources. As the conversation about government reorganization continues to evolve, the Center for American Progress's environment and ocean policy teams will be developing specific recommendations about an appropriate structure for this agency.

Similarly, in addressing the issue of what to do with the federal government's various economic statistics functions, we quickly found that the scope of the question outgrew the space in this paper. One approach, as CAP suggested in its "Focus on Competitiveness" paper, would be to bring the Census Bureau and the Bureau of Economic Analysis together as part of a consolidated economic statistics agency. We asked George Washington University research professor Andrew Reamer to write a separate paper for this series titled "Economic Intelligence." He makes a number of practical, achievable recommendations to upgrade our national statistics efforts for the 21st century.

Uniting these four focus areas—trade, general-purpose technology, place-based economic growth, and workforce training—under one department would increase efficiency and enable the government to more effectively create and implement a truly comprehensive strategy to foster American innovation and economic competitiveness. The result would be more and better job creation and sustained economic growth.

We do not assert that the recommendations are unquestionably correct. In particular, we understand that questions of coordination can arise even if functions are managed within the same department; there is no single, perfect solution. But

Uniting these four focus areas—trade, technology, workforce training, and economic growth—under one department would increase efficiency.

we hope that this paper begins a real dialogue about what it would take to design and implement a coherent national competitiveness strategy insulated from the quadrennial shifting of political fortunes.

In the main pages of this report, we detail our vision for this new Competitiveness Department, including an overview of its new functions and an explanation of which existing agencies, programs, offices, bureaus, and programs might be incorporated and why. We then examine how to better network and integrate other mission-specific innovation programs in the departments of Defense and Energy, and the National Institutes of Health, with the new work of the rewired Department of Competitiveness. First, though, here is our proposal in a nutshell.

The proposal

We suggest the creation of a new cabinet agency able to wield the many existing tools of the federal government to better coordinate inherently interrelated trade, technology, training, and economic growth programs in order to enhance the competitive stance of our national economy. (see Diagram 1) This agency would be built primarily around the existing structures of the Department of Commerce and Small Business Administration, but would also assume relevant trade, technology, workforce training, and economic growth functions from other agencies where such consolidation could help increase economic competitiveness.

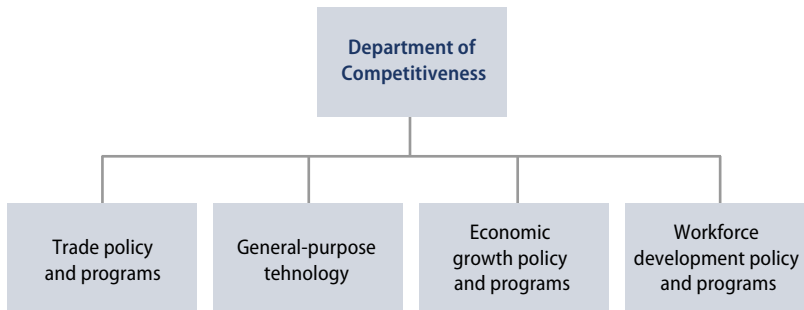
Several key aspects of this proposal would strengthen existing federal efforts around innovation and competitiveness:

- Bringing together the hundreds of direct assistance programs that support innovation through trade, technology, workforce training, and bottom-up economic coordination under a “Common Application”
- Integrating the existing parallel networks of brick and mortar and virtual federal offices across the many regions of the United States
- Acting as a hub of interagency coordination around particular mission-specific technology goals such as energy, healthcare, or defense innovation, and streamlining regulatory compliance procedures

Each of these main components of the proposal are discussed in more detail in the following sections.

DIAGRAM 1

New Department of Competitiveness overview



Across all of the four of these new functions within the Department of Competitiveness, federal agencies inside and outside of the new department would:

- Coordinate regulatory compliance
- Make federal policy and management decisions
- Operate loan, grant, export, technical, counseling, and other kinds of assistance programs for small business, industry, and public entities
- Directly contract with key private actors

All of these activities are currently undertaken by many departments with only ad hoc coordination around the common goal of fostering the best possible environment for innovation and economic competitiveness. Strategically managing these activities together would address key gaps in governance, leading to several important benefits:

- Increase efficiency by bringing together related functions of government
- Streamline interaction between businesses, universities, and other economic actors and the federal officials, regulators, and program officers with whom they must interact
- Increase visibility and accessibility of existing grant, loan, technical, and other assistance programs
- Exploit potential synergies among businesses, universities, inventors, investors, community lenders, and regional economic development organizations whose economic goals share a regional and/or sectoral focus
- Allow for more strategic use of existing and complementary policy tools in the four interrelated domains affecting competitiveness: trade, technology, training, and economic growth

Since innovation is among the most important long-term drivers of economic growth and job creation, helping the private sector overcome barriers to innova-

tion is an indispensable ingredient to promoting economic competitiveness.⁴ Studies show that one of the first steps to fostering innovation is forming networks of innovation participants, such as institutions of higher education, federal laboratories, small startup businesses, financial institutions, community and microenterprise development organizations, workforce training providers, industry, and local and state governments. Contrary to the widespread belief that innovation comes exclusively from scientists in laboratories, all of these different players have a role to play in innovation and job creation.⁵ When these players act together, it makes innovation possible in ways it wouldn't be acting separately.

A new cabinet agency able to manage the federal government's existing efforts to aid all innovation participants in a coordinated and strategic way would go a long way toward strengthening bottom-up economic growth, supporting small businesses, and creating jobs. In the following sections, we'll turn briefly to each of the key components of our proposal, and then discuss the rationale behind each of them in turn.

A new common application program for trade, technology, workforce training, and economic growth

The centerpiece of the new Department of Competitiveness would be a new common application program for all four facets of the new department's responsibilities—trade, technology, workforce training, and economic growth. A common application—not unlike the common app for college admissions—would make the effort of applying for several related programs at this new department far easier, faster, and less expensive.

The current structure of federal programs is uncoordinated and lacks an overall strategic vision. (See Appendix A on page 34 for a list of many of the existing programs that currently lack coordination.) To illustrate the problem, take the example of an entrepreneur working to start a small business and create jobs around the commercialization of a new idea in an underserved region. Today, such an entrepreneur might be eligible for a dozen assistance programs spread across several different agencies. But finding and applying to them all separately is prohibitively costly.

Furthermore, if the business plan involved the commercialization of university research, that university too could be eligible for different programs from entirely separate agencies, for example through the Small Business Technology Transfer grant program administered separately by 11 agencies. And, if the business plan required a particular kind of workforce talent, local workforce training

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organizations (such as community colleges or career counseling providers) would be eligible for still separate assistance programs.

In short, the whole of these actors' activities together is greater than the sum of their activities apart.

Under current policy, there is no way to ensure all of the potential innovation participants—the small business, the university lab, and the workforce training provider—would have their bid for assistance reviewed jointly, despite the mutual interdependence of their activities. That's where the consolidation of a number of these existing programs under a new Department of Competitiveness and accessible via a Common Application program would add value.

Bringing together the various existing public financing tools used to support these different activities would help make the most of every dollar spent by each of them. Replacing these existing siloed programs with one program would streamline the application process, provide flexibility, increase efficiency of federal funds, and create value through new synergies.

The 2011 debut of the Economic Development Administration's newest Jobs and Innovation Accelerator program, which encourages joint applications put together by consortia of small businesses, training providers, and regional economic councils, is a great example of how this can work.⁶ By aligning the resources of 16 federal agencies and programs, the program made it easier for 20 public-private consortia in underserved regions around the country to self-assemble around the commercialization of new technologies. The program, at a cost of \$37 million, is expected to leverage \$69 million in private finance and support 339 new businesses, 4,800 new jobs, and new skills training for 4,000 workers.⁷ Despite a tight application period of only 40 days from the funding announcement to the application deadline, the program was vastly oversubscribed, with 121 applications for only 20 winning consortia. This indicates the very real interest that exists for this kind of synergistic and regionally focused federal streamlining.

Our proposal would systematize this thinking and take it to the next level by replacing the dozens of separately managed programs operating in disparate policy silos across a dozen agencies with one, streamlined system capable of bringing to bear a full array of policy tools—grants, loans, contracts, credit enhancement, technical assistance and others—on the challenges of bottom-up, regional innovation, job creation, and growth. Figures 1 and 2 show how many separate programs from different agencies could be aligned to better support their unified goals.

One of the first steps to fostering innovation is forming networks of innovation participants.

FIGURE 1
The status quo is chaotic, redundant, and uncoordinated

Existing federal funding is uncoordinated among many agencies and fails to recognize the importance of connecting related economic competitiveness activities.

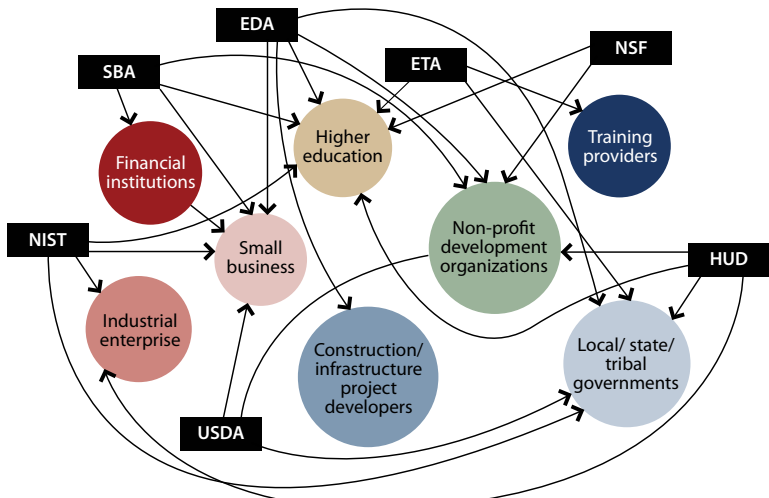
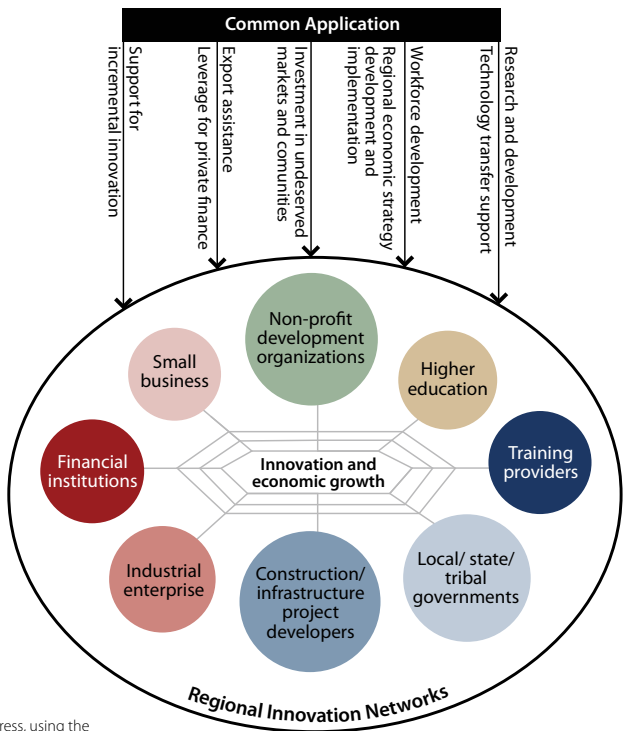


FIGURE 2
The Common Application Proposal helps innovation networks form

A Common Application would eliminate redundancy and unlock new synergies by encouraging network formation, innovation, entrepreneurship and economic competitiveness.



Source: Science Progress, using the Catalog of Federal Domestic Assistance

Instead of the alphabet soup of parallel and complimentary grant, loan, financing, and assistance programs, one program would be better able to flexibly assess the needs of regional applicants and deliver timely and targeted support to the wide array of players who participate in innovation and job creation. A single, flexible common application program operated by the Department of Competitiveness would address all applications for all the various types of existing support through the lens of network formation. It would have a big-picture view of existing and nascent innovation networks in regions, and would be empowered to dispense project grants, loans, credit enhancement, and programmatic services as needed to help connect innovation players and bring regional innovation and job creation plans to life.

From the vast tables of uncoordinated funding streams in figure 1 and in Appendix A, the common app would serve several functions:

- **Research and development:** Providing low-interest loans and loan guarantees to small businesses for basic research into novel platform technologies.
- **Technology transfer support:** Providing grants and loans to university-industry partnerships centered on tech transfer and commercialization of promising technologies.
- **Workforce development:** Investing in technical education, training, and apprenticeship programs to help link regional workforce capabilities to local demand, and to position workers to take advantage of emerging industries and occupations in their region.
- **Regional economic strategy development and implementation:** Providing project grants and technical assistance to self-assembled regional or industry consortia or development organizations for design and implementation of multi-stakeholder plans that fulfill necessary criteria.
- **Investment in underserved markets and communities:** Leveraging private dollars for small business in underserved or economically distressed communities with increased coordination with larger regional economic development and technology innovation strategies.
- **Export assistance:** Providing loans, loan guarantees, insurance, and other forms of financing assistance, as well as foreign market intelligence and trade negotiations support to small and mid-sized businesses looking to tap foreign demand by selling their products abroad.

Institutions of higher education, federal laboratories, small startup businesses, financial institutions, community and microenterprise development organizations, workforce training providers, industry, and local and state governments—all of these players work together to promote innovation.

- **Leverage for private finance:** Managing and leveraging regional networks of local financiers currently participating in the SBA microloan, Small Business Investment Corporations, and Small Business Development Companies programs.
- **Support for incremental innovation:** Helping industrial enterprise in underserved regions, markets, or strategic industries to acquire necessary human, physical, and financial capital necessary to upgrade, innovate, increase exports, and stay cutting-edge.

To be clear, the federal government already does these things, but not in a way that strategically exploits the synergies between them. Using this extensive list of tools, this Common App program would have tremendous flexibility to coordinate financing assistance, loans, and project grants to tech startups, university-industry partnerships, community development programs, and a wide array of small businesses, as well as larger self-organizing consortia, regional economic development organizations, district organizations, microenterprise development organizations, and the like. We suggest that implementation of the Common Application could increase thoroughness, reduce the administrative burden on business, realize new synergies, and foster new collaboration at the local, regional, and national level.

Having one program able to leverage different tools ensures that every worthy applicant receives the appropriate support to foster innovation, spur job creation, and sustain economic growth. Combining related resources under one administrative roof benefits both the applicant (a streamlined and simple interface where they can see and understand all of the opportunities available), and for the government (increased proximity among related programs, opportunity for enhanced strategic and regional coordination, elimination of redundancy).

Pooling diverse existing competitiveness funding opportunities would be more efficient than the current system of siloed programs because of the reduced administrative burden involved in leveraging multiple, complementary sources of programmatic support. But more importantly, value will be added by fostering new collaboration—both among currently uncoordinated federal programs pursuing similar goals, and among the public and private sector players working to catalyze innovation and growth in their regions.

We discuss how this program would work with the various other agency efforts around the four pillars of trade, technology, training, and economic growth in the main pages of the report.

A new cabinet agency able to manage the federal government's existing efforts to aid all different kinds of innovation participants strategically would go a long way.

Integrating existing, parallel regional networks

Another important reason to create a Department of Competitiveness is to make more efficient the multiple and duplicative networks of local federal offices. The Small Business Administration, Economic Development Administration, Manufacturing Extension Partnership, and Employment and Training Administration, for example, each operate a network of regional and local offices.⁸ These agencies don't even currently agree on how to divide the country into regions, each slicing the nation differently. The duplication of federal offices also means a duplication of rent and overhead.

Existing federal networks are uncoordinated

SBA, EDA, ETA each divide the country into different, uncoordinated regions.

SBA federal regions

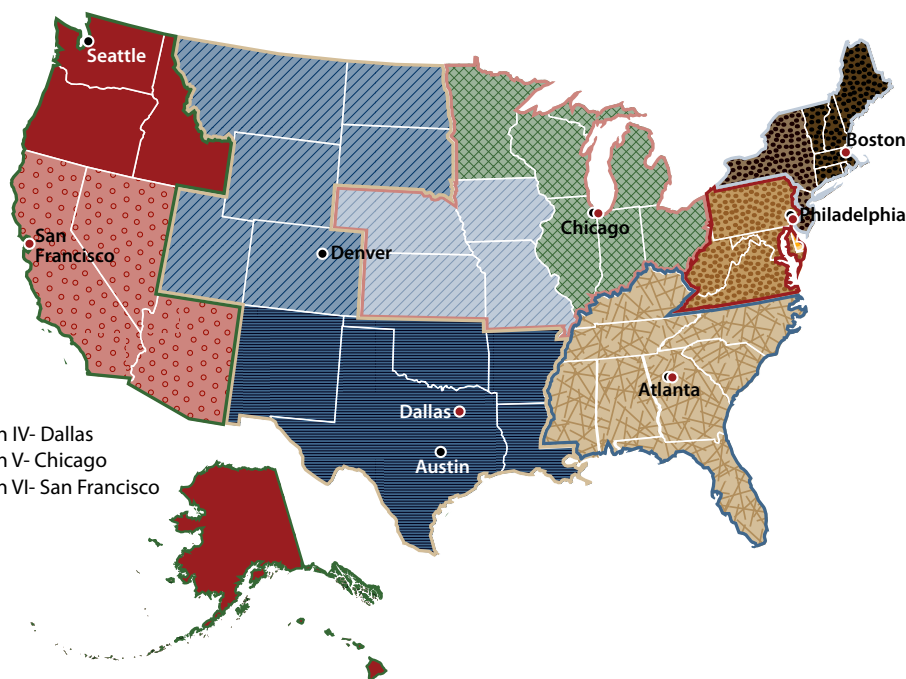
- | | |
|------------|-------------|
| Region I | Region VI |
| Region II | Region VII |
| Region III | Region VIII |
| Region IV | Region IX |
| Region V | Region X |

US EDA regions • HQ

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| Philadelphia | Austin |
| Atlanta | Denver |
| Chicago | Seattle |

ETA regions • HQ

- | | |
|-------------------------|--------------------------|
| Region I- Boston | Region IV- Dallas |
| Region II- Philadelphia | Region V- Chicago |
| Region III- Atlanta | Region VI- San Francisco |



Source: Science Progress, using information from the SBA, EDA, and ETA

Further, like the assistance programs they administer, there is relatively little coordination among these offices today, despite their linked missions. Besides better integrating the delivery of technical assistance, grant-making, and other services to businesses, universities, regional economic development councils, local governments, and work force training providers, merging the various regional offices could improve bookkeeping and broaden available federal competitiveness services in regions, while increasing coordination to make those services more effective.

Integrating these existing parallel networks under the Department of Competitiveness would make the Common App program more responsive to local needs. This new, integrated network of competitiveness offices would be tasked not only with distributing key business, assistance, training, and other services to stakeholders in regions, but also with understanding the local dynamics of regions' economic needs and innovation assets, and leveraging that understanding in crafting the federal response.

A hub of interagency coordination

No reorganization plan will bring together every agency that works on trade or technology and aspects of economic growth. Many key technology agencies and bureaus are technology-specific and must remain separate. Several major cases in point:

- The Defense Advanced Research Projects Agency (\$3 billion), or DARPA, which coordinates competitive grants and contracts with private research and industry to develop the cutting-edge defense technology of the future.⁹
- The Advanced Research Projects Agency-Energy, or ARPA-E (\$300 million), which, modeled after DARPA, competitively allocates public funding for breakthrough clean-energy technologies with the potential to reduce our dependence on foreign energy and our impact on the global climate.¹⁰
- Office of Energy Efficiency and Renewable Energy (\$2.2 billion), a Department of Energy program that uses federal dollars to leverage private funds for clean-energy research and innovation.¹¹
- Office of Science (roughly \$5 billion), a Department of Energy program that operates and manages many of the national laboratories such as the infamous Los Alamos National Laboratory, where secret atomic physics research led to the creation of the atom bomb. These labs and their unique science equipment are used today by universities and industry for basic and applied physical science research.¹²
- National Institute of Food and Agriculture (\$1.5 billion), a Department of Agriculture program that supports research, education, and extension programs in the Land-Grant University System and other partner organizations through grant making and research of current and future challenges facing American agriculture.¹³

A Common Application could foster new efficiencies and new collaboration at the local, regional, and national level.

- The National Institutes of Health (\$28 billion), which funds and conducts innovative medical research.¹⁴
- ARPA-ED (\$50 million), a new proposal modeled after DARPA and ARPA-E that would pursue breakthrough developments in educational technology such as student learning systems, support systems for educators, and educational tools.¹⁵

These mission-specific programs overlap with the mission, outcomes, and capabilities of many of the agencies we do suggest be included in the new department—they also benefit from operating close to their “clients.” This industry-specific focus makes these agencies better suited to close collaboration with the Department of Competitiveness, rather than outright consolidation.

Nonetheless, the coordination of these efforts would be improved by the creation of the new Department of Competitiveness. Grant programs operated by these agencies could and should be coordinated in some way with the Common Application program we suggest in order to ensure that technology-driven innovation investments are supported by matching investments in local workforce, infrastructure, and exploration of export opportunities.

Thus, we suggest that the new Department of Competitiveness have a deputy secretary in charge of managing the Common Application program as well as serving as the chief of interagency technology coordination. As part of this responsibility, we propose that the second deputy secretary should oversee a cross-matrixed organizational system that establishes Competitiveness Department offices in mission-driven agencies such as the ones above in order to facilitate the most efficient cross-departmental coordination.

Having a new Department of Competitiveness joint office nested in the management-level at each of these agencies will ensure that synergistic tools and expertise are shared between these technology-specific agencies and the other technology, trade, and economic functions of the new DOC. While it is perhaps a bold suggestion to cross-fertilize agencies with jointly run offices from other agencies as a matter of course, it is exactly this kind of cooperative and unconventional thinking that will keep our government and our economy innovative and competitive in the 21st century.

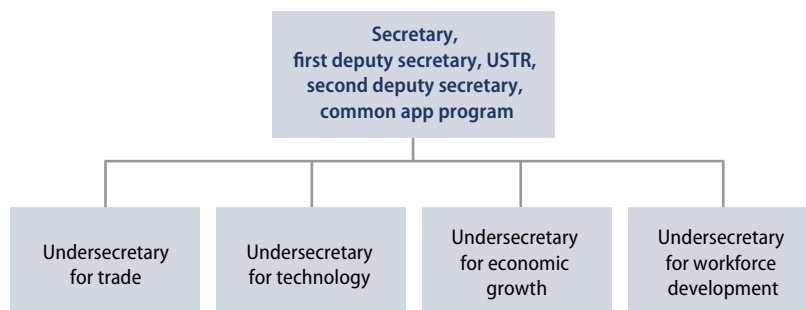
A new Department of Competitiveness would become, by virtue of its size and cohesiveness of its functions, a stronger player within the Cabinet and federal bureaucracy.

Administration of the new department

A new Department of Competitiveness that integrates these functions would become, by virtue of its size and cohesiveness of its functions, a stronger player within the federal bureaucracy and in the president’s cabinet. We envision such a department being headed by a secretary of competitiveness; by a first deputy secretary for trade and competitiveness, who would also serve as the United States Trade Representative; and by a second deputy secretary, who would act as COO of the department and administrator of the Common Application program that we describe below. Each of the four functions—trade, technology, economic growth, and workforce development—would be headed by an undersecretary who would oversee the programs. (see Diagram 2)

DIAGRAM 2
Function foremost

New Department of Competitiveness organizational chart



At the secretarial level would be a policy and strategy office tasked with crafting a biannual, overarching National Innovation and Competitiveness Strategy that integrates the functions of each of the four pillars. In the following sections, we will discuss these four pillars in turn, with attention to opportunities for enhanced strategic coordination and how existing assistance programs would fit within a Common Application program at the new department. We also give a few examples of the kinds of programs that would be good candidates for inclusion, though we recognize that more research is necessary to make concrete recommendations about what programs should and should not be included within the new department. See Appendices B through E for a more in-depth description of how the missions and functions of existing agencies align with the goals of a unified competitiveness agenda in each of the four pillars.

Trade

The business of trade should be collected in one place—where trade negotiations, trade policy, and export efforts can be combined. That is already the focus of the Office of the U.S. Trade Representative, or USTR, which has taken a leadership role in achieving President Obama’s goal of doubling exports in five years.

Presently, there are seven or more federal bureaus and agencies with trade-related missions acting separately, which together spend about \$50 billion each year:

- Office of the United States Trade Representative
- International Trade Administration
- Department of State’s several trade bureaus
- Bureau of Industry and Security
- Export-Import Bank of the United States
- U.S. Trade and Development Agency
- Overseas Private Investment Corporation

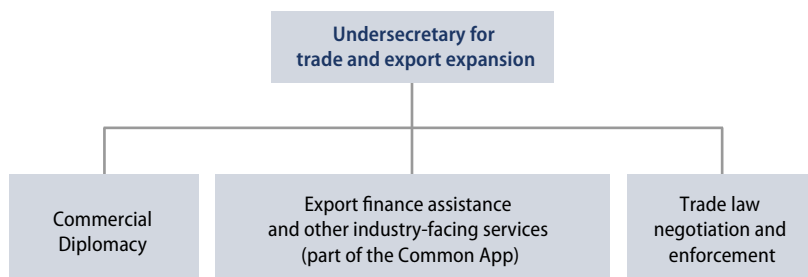
Operating trade-related functions together with related programs in technology, training, and economic growth will make it easier for the competitiveness department to use trade as a tool to drive technology innovation, jobs growth, and U.S. industrial competitiveness. A major priority of innovation-driven economic growth is to ensure new technologies—and the businesses that make them—have access to robust markets. Trade assistance helps firms of all sizes to compete for market share in global markets, access demand, sell more goods, and hire more workers.

Building upon the interagency coordination already occurring through National Export Initiative and the Office of the USTR would allow a Secretary of Competitiveness to effectively manage U.S. trade policy as a tool in national innovation and competitiveness strategy. Bringing together the currently dispersed trade functions across government into one place will also eliminate redundancy and allow for more strategic utilization of existing trade tools. (see Diagram 3)

DIAGRAM 3

Organizing for exports

The new Office of the Undersecretary for Trade



Trade is a tremendously important aspect of our national economy. In 2010 the United States exported \$1.3 trillion worth of goods—including commodities, manufactured products, technology, and services—and imported \$1.9 trillion. While a large part of this \$600 billion trade deficit is driven by imports of fossil fuels, and nondurable manufactured goods such as clothing, foods, and commodities, more troubling is the recent deficit in high-tech trade. While U.S. industries once dominated global high-tech markets, since 1999, U.S. businesses have bought more high-tech goods than they have sold. Today the deficit reduces annual GDP by 0.6 percent per year, and the deficit is only getting worse.

As our colleagues Christian Weller and Luke Reidenbach noted in their 2011 report, the quantity and quality of U.S. trade relationships in high-tech sectors have profound implications on long-term economic growth, jobs, wages, and standards of living. A more strategic approach to high-tech export expansion is needed to reverse the recent declines of U.S. trade in these industries.¹⁶

An integrated Department of Competitiveness could help boost the success of these critical U.S. industries through a shared focus on trade, technology, training, and economic growth. Under current law, commercial diplomacy, bilateral and multilateral trade negotiations, trade dispute arbitration and enforcement, trade counseling, market intelligence, export finance assistance services, and technical standards setting are managed as separate, or even unrelated, activities.

Managing them jointly as part of a strategic competitiveness plan would recognize these efforts for what they are: useful tools to ensure U.S. businesses compete on a level playing field in the global marketplace. From this perspective, the trade-

based competitiveness tools that currently exist in the federal government can be roughly divided into three broad categories:

- Trade negotiations
- Overseas enterprise assistance
- Enforcement

Better coordinating these three interrelated domains—currently scattered among the organizations listed above—could yield significant new synergies.

So let's look at a brief example of industry-facing trade services could be better utilized to promote domestic success.

When U.S. companies export goods and services abroad, the result is new jobs. There are presently four different agencies wholly dedicated to providing domestic small businesses and industry with trade assistance services such as trade counseling, market intelligence, and export financing and technical assistance: the Export-Import Bank, the Overseas Private Investment Corporation, the U.S. Trade and Development Agency, and the International Trade Administration. What's more, the Economic Development Administration and Small Business Administration, though not wholly concerned with trade, also operate programs that provide duplicative industry-facing trade services.

Why should exporters or would-be exporters have to look to four or even six different agencies to find the loans, loan guarantees, and other financing assistance and technical assistance they need to get access to international market demand for their products? Eliminating this redundancy by making these tools accessible through a Common Application makes sense. It would make it easier for businesses and manufacturers to get the help they need to access foreign markets and bring in valuable and job-creating commercial export agreements.

Integrating the management of bilateral and multilateral trade negotiation and enforcement would be helpful as well. Currently such work is undertaken by various bureaus at the State Department, at the White House office of the USTR, and the International Trade Administration. Policies such as foreign direct investment rules, intellectual property rights, and market access all play significant roles in determining the success or failure of U.S. high-tech trade efforts and would thus be valuable tools in the implementation of a national competitiveness strategy.

Allowing innovative manufacturers to access trade, technology, and training services together through a single point of contact would make innovation and job creation easier across all of the nation's regions.

Besides streamlining government interaction for businesses, bringing industry-facing services together with trade negotiation and enforcement also would provide better insight to our commercial diplomacy efforts.

A word on the USTR is appropriate. Some worry that the effectiveness of our trade negotiations will be decreased if the function of the USTR is moved out of the Executive Office of the President. The concern is fair, but we think that a creative approach can be found that marries the greater efficiency in governmental operations with the greatest efficiency for our negotiators. It is true that other critical elements of governmental operations such as those housed in the State Department and Defense Department are not situated in the White House, and we think that the same can be accomplished here. That is why, for example, we propose that the new cabinet department include *both* a Secretary of Competitiveness and a Deputy Secretary who, with the full confidence of the President and the Secretary, would exercise the traditional authority of the USTR.

Jointly managing trade services, commercial diplomacy, and enforcement as part of a national competitiveness strategy that also includes technology, training, and regional economic coordination services would allow for these services to make an even bigger impact. All over the country today there are small and medium innovative manufacturers and technology startups working with the federal technology programs, such as the Manufacturing Extension Partnership, to improve supply chains and position their technology in global innovation systems. Technology exporters are also working with local economic development boards, community-planning councils, and other vehicles for regional economic coordination to support their efforts to create domestic jobs through export expansion. They are also working with local governments, community colleges, and other workforce development organizations to cultivate the talent they need to make the most of job-creating export opportunities.

Allowing innovative, job-creating manufacturers to access trade services together through a single point of contact with the technology, workforce, and local economic coordination services that also help determine success would make innovation and job creation easier across all of the nation's regions. For more information about the existing programs eligible for inclusion in such a proposal, please see Appendix B.

Technology—the production of new and better products, and faster and cheaper ways of making them—is what has always been at the heart of America's long-term economic growth.

Technology innovation

Americans have long looked at science as a public good, and thus have established for decades the precedent of public investment in basic science research. But more recently economists point to the spillover effects and public-good benefits of not just basic science but also technology innovation more broadly—including the benefits of technology that is privately held.

Indeed, technology—the production of new and better products, and faster and cheaper ways of making them—is what has always been at the heart of America’s long-term economic growth.¹⁷ And even in the near term, innovation has a direct impact on jobs and wages. According to a Department of Commerce report, job wages grew in innovation-intensive industries at two-and-a-half times the national average in recent years.¹⁸

The important role of technology to jobs and the economy necessitates a more concerted federal strategy to promote innovation—a strategy that builds on our nation’s intrinsic strengths of research and development, entrepreneurialism, opportunity, and place-based economic development. Publicly supported innovation can sensibly be broken down into three categories:

- Basic experimental science research
- Applied research and development of mission-specific technologies to solve specific challenges in energy, health, defense, or other fields
- General-purpose platform technologies such as manufacturing, information technology, and advanced infrastructure that underpin the development of many or all industries

Basic science research solves the market failure caused by underinvestment in pre-competitive research. Mission-specific technologies at the applied stage include such endeavors as clean energy and health information technology—efforts that have a core focus on a market failure.

The federal government, however, has no concentrated focus on R&D for platform technologies—those technologies that act as the infrastructure for the creation of a wide swath of other innovation advancements, including mission-specific tasks. Yet the most important platform technology of our time, the Internet, was spawned and developed largely through public-sector support.

There are currently many government functions that provide services in support of the research, development, and commercialization of science and technology:

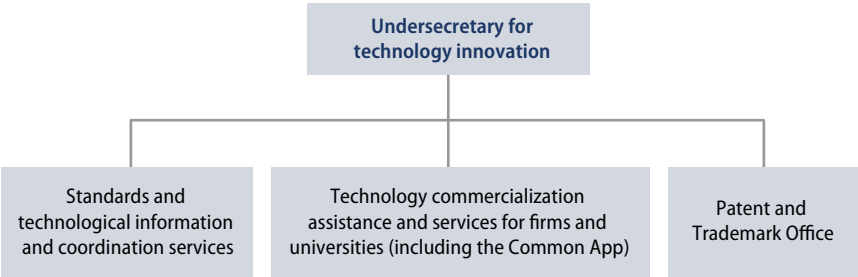
- National Institute of Standards and Technology (Department of Commerce)
- Manufacturing Extension Partnership program (Department of Commerce)
- Small Business Innovation Research Program (Small Business Administration)
- National Technical Information Service (Department of Commerce)
- Patent and Trademark Office (Department of Commerce)

Bringing together the industry-facing services of these many agencies and programs under a Common Application would streamline access. And managing the portfolio of general-purpose and public-good technology innovation programs geared toward serving businesses and universities together under an innovation-policy office at the undersecretary level would be of great assistance to the White House, its Officer of Science and Technology Policy, and to our national innovation ecosystem. (see Diagram 4)

DIAGRAM 4

Organizing for innovation

The new Office of the Undersecretary for Technology Innovation



Partnerships between universities and entrepreneurs are today driving technology innovation in regions across the country. The first time when these entrepreneurs and researchers interact with the federal government will often be when they apply for a patent. Unfortunately, under current law patents can take three years

or more to obtain. This is a drag on the innovation pipeline. Though the America Invents Act of 2011 will help reduce patent pendency, the U.S. Patent and Trademark Office still does not have the flexibility it needs to serve the interests of these innovation players to the best of its ability. Further, there is no process in place to connect patent applicants or new patent holders with the wide range of other federal services available to help them bring their technologies to market.

Coordinating the patent process more closely with other federal technology services through the Department of Competitiveness can help solve this problem. When a patent is issued, in addition to filing it away in the federal patent registry, why not also notify the patent holder of small business acceleration programs for which he or she might be eligible? Patents are issued to businesses both large and small, but federal programs targeted toward smaller firms can be more effectively integrated. The Small Business Innovation Research and Small Business Technology Transfer programs, for example, are two programs totalling \$2 billion that help small technology firms to get the startup capital they need to build business plans around the commercialization of new technology.

But small technology firms need more than just access to capital to ensure business success and job creation. They also need locally available workers with specialized skills, access to foreign and domestic markets in which to sell their products and services, and a say in regional economic and infrastructure planning. As these small technology startup firms grow, they may also need assistance in the scale up of manufacturing, and for this they will turn to the NIST's Manufacturing Extension Program. The MEP program operates field offices in every state that provide U.S. manufacturing companies with a wide array of technical services to help them become competitive.

The technology startup company may also need help finding a market for its product. But small firms rarely have the resources needed to research potential market opportunities in every country around the world, so for this, it would again need to go to a different agency—one of several discussed in the preceding section.

Finally, as the small technology firm begins to grow, invest in manufacturing, and increase its market penetration, it will need a locally available supply of skilled workers, which even in the depths of recession, can sometime be hard to find in very specialized industries. Better matching local talent to industry demand is subject of another paper from our series “Building a Technically Skilled Workforce,” but the firm may not have a relationship with local workforce development providers.

The important
role of technology
to jobs and
the economy
necessitates a
more concerted
federal strategy
to promote
innovation.

Bringing together the management of all of these federal services would not only streamline startup company access to the technology and trade-related services it needs, but also would help it better coordinate its needs with those of the relevant players such as community colleges and local economic development boards in its region.

Small- and medium-sized firms working on the cutting edge of technology innovation make up a large percentage of overall U.S. exports—more than 30 percent, according to the Small Business Exporters Association of the United States. Thousands of jobs and the path of future industrial development depend on their success. Coordinating the many different ways in which federal programs can support their success, and the success of their local and regional partners through a strategic competitiveness strategy, will help these firms get access to the human, physical, and financial capital they need to stay cutting edge and create jobs.

In Appendices A and C, we discuss in detail a number of technology programs administered by not only NIST and MEP, but also the Small Business Administration, U.S. Department of Agriculture, the Employment and Training Administration, and others that are candidates for inclusion in the new department in order to better promote technology innovation through a shared focus on not only technology, but also on training, trade, and regional economic coordination.

Economic growth

Our nation is dotted with communities full of promise, talent, and potential. But a lack of expertise, financial capital, and confidence prevents many of these communities from maximizing their potential. Strategically deployed assistance to regional development organizations, microenterprise development funds, community development councils, and venture and angel investors looking to deliver risk capital to entrepreneurs with promising ideas can go a long way in helping communities large and small achieve their full potential. Ensuring all of our nation's communities have something to add to the national economy is key to sustaining jobs, enlivening regions, and promoting national competitiveness. That's why economic growth is the third portfolio of our new Department of Competitiveness.

Today the federal government has a range of programs that help communities and small business owners with vision, but without needed resources or expertise, to achieve their goals. Moreover, support for these bottom-up regional economic coordination activities are scattered across a range of programs administered by many agencies, including:

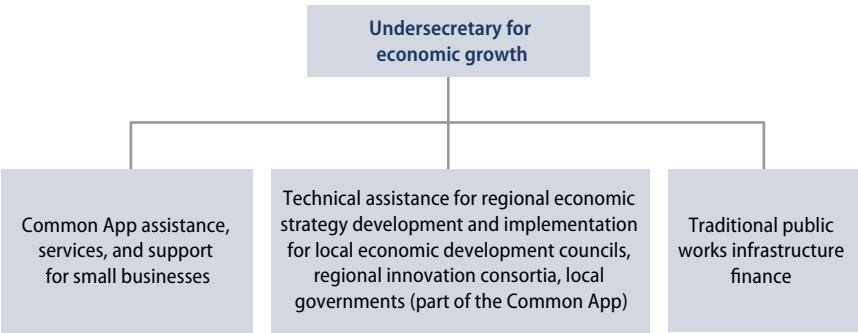
- The Economic Development Administration (Department of Commerce)
- The Small Business Administration
- The Minority Business Development Administration (Department of Commerce)
- The Center for Veterans Enterprise (Department of Veterans Affairs)
- The Department of Rural Development (Department of Agriculture)¹⁹
- The National Telecommunications and Information Administration (Department of Commerce) and the Broadband Initiative Program (Department of Agriculture)
- The Community Planning and Development (Housing and Urban Development)²⁰
- Office of Economic Adjustment (Department of Defense)²¹

A quick search through the government's Catalogue of Federal Domestic Assistance database will reveal thousands of individual programs. Small businesses, local governments, or regionally focused nonprofit economic development organizations may be eligible for several such programs, and other stakeholders in their success may be

eligible as well, but applying separately to the plethora of assistance possibilities is costly and time consuming. Most federal programs are poorly advertised, and many eligible communities and small businesses may not even know they are eligible.

Structural reform would be a better approach. The goals here are twofold: first, to improve the efficiency of federal efforts by combining programs and their administration and, second, to replace old-form notions of “economic development” with a sophisticated, bottom-up, and innovation-driven approach. Outdated notions of “economic development” paint a picture of bridges to nowhere and bureaucratic entanglement, but new-school efforts to drive bottom-up, innovation-driven economic growth that cuts through red tape and empowers communities to achieve their own goals has already seen success in the Obama administration (see CAP’s paper on the Jobs and Innovation Accelerator for an assessment of the most recent efforts).²² For this reason, we believe that the unit should be tasked with promoting “economic growth” in addition to the more traditional economic development. (see Diagram 5)

DIAGRAM 5
Organizing for economic growth
The new Office of the Undersecretary for Economic Growth



A large and growing body of evidence shows that the United States does not have one homogenous national economy but rather a patchwork of heterogeneous regional economies, each with a unique portfolio of infrastructural, human capital, institutional, and economic assets. Furthermore, studies show that the geographic agglomeration of these assets and their associated business activity correlates with enhanced, even exponentially improved, economic outcomes.

Presently, the Economic Development Administration supports local business ecosystems that take advantage of the unique characteristics of their region to create the conditions for private sector jobs growth. The EDA provides a range of services including technical assistance, strategy development, revolving loan

fund capitalization, trade adjustment assistance and public works investments to support these efforts. At the same time, the Small Business Administration today maintains a network of approved lenders, small-business development centers, and small-business investment companies designed to give small businesses in economically underserved regions a leg up. Given that a region's economic success is determined ultimately by the success of the success of private-sector businesses in the region, better coordination between these two related activities is a must.

Take for example the EDA's recent Jobs and Innovation Accelerator challenge grant program, which provided targeted \$1.8 million grants to 20 regions across the country to coordinate workforce, small business, and regional economic planning efforts around targeted technology-driven growth efforts in high-growth sectors. Under the current system, small businesses in those regions applying for support from SBA programs—even those in the same industrial sector identified by the EDA program—are considered separately and without any attention to potential workforce, supply chain, or information-sharing synergies. Businesses not involved at the initial time of application for the EDA's regional jobs accelerator are effectively locked out of potentially lucrative opportunities for collaboration.

But under a single department, innovation cluster activities—and the small business, technology research, and workforce elements of which they are comprised—could be made more dynamic. Under a Common Application, if a new startup came along looking to fill a critical supply chain gap in an EDA-supported regional economic growth plan, that firm would be considered for what it was: a unique piece of a larger jobs-and-innovation puzzle, rather than as just another small company looking for assistance. Currently, that firm's application for assistance from the SBA, USDA, MEP, or another federal program would not be informed by the role the firm's program might play in the larger EDA-funded regional innovation plan. The two may not even be aware of each other's existence. By linking that firm's objectives with those of its regional partners, the Common App would encourage potentially productive collaboration.

Even better, because it would also be able to utilize trade assistance programs alongside other regional economic growth, small business, and workforce development programs, a cross-departmental Common Application would be able bring together all of tools needed to ensure regional economic success. The Departments of Agriculture and Housing and Urban Development operate programs that utilize very similar policy tools, but with a specific focus on rural and urban regions specifically. In Appendix D we examine the considerations of including these and other programs within a Department of Competitiveness in more detail.

Under a single department, innovation cluster activities—and their small business, technology research, and workforce elements—could be made more dynamic.

Workforce development

In the end it is workers who drive innovation, economic development, and competitiveness—be it by working in labs, on assembly lines, in boardrooms, or in storefronts. The firms that research, design, market, build, manufacture, repair, and service the products that drive economic growth cannot exist, much less stay cutting-edge, without skilled, creative, and capable workers. Competitive regional economies depend upon the availability of a qualified workforce, and the talent of America’s workers has long been a reason for companies to locate here.

There are several federal efforts already in existence that support state and local efforts to enhance the quality of their talent pool. Paramount among them are:

- The Employment and Training Administration (Department of Labor)
- The Office of Vocational and Adult Education (Department of Education)
- Multiple small programs in the National Science Foundation.

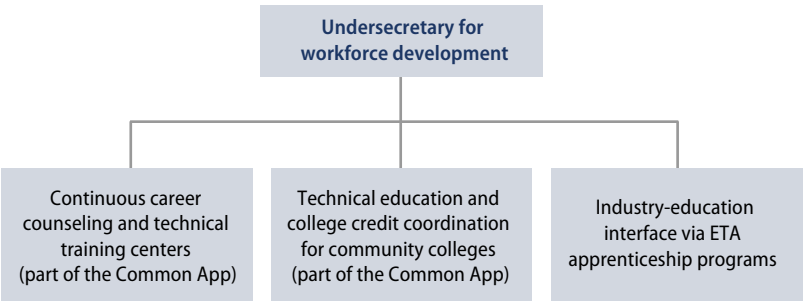
The new Department of Competitiveness should combine existing efforts in the departments of Education and Labor and, to a lesser extent, the National Science Foundation, to pursue the goal of universal attainment of an associate’s degree or industry-recognized credential. At the same time, it should focus on better linking existing workforce investment dollars to the rapidly changing demands of industries and regions, while enhancing service delivery to help job seekers trying to keep up. By linking these efforts under one roof, similar programs can be combined to support more robust missions. Linking the goals of workforce policy together with those of economic development and technology will ensure the American workforce can meet the needs of tomorrow’s high-growth industries.

Efforts to better integrate the workforce development system with the economic development programs are not new.²³ The High Growth Job Training Initiative and the Community-Based Job Training program, for example, were interagency efforts designed to encourage market-driven collaboration between private industry and relevant public entities involved in workforce development.²⁴ Before that,

the WIRED initiative sought to link leverage and align region-based workforce and economic development strategies.²⁵

Most recently the EDA’s Jobs and Innovation Accelerator Challenge epitomized the high level of interagency coordination required to successfully develop competitive regional economies. The Accelerator brings together support from 13 agencies and funding from three (EDA’s Economic Adjustment Assistance Program, DOL’s H-1B Technology Skills Training Grant, and SBA’s 7(j) technical assistance program).²⁶ By integrating current workforce development initiatives that tie in closely with globally competitive economic strategies, the new Department of Competitiveness’ Office of the Undersecretary of Workforce Development will be able to foster the same level of coordination. (see Diagram 6)

DIAGRAM 6
Organizing for workforce development
The new Office of the Undersecretary for Workforce Development



Our nation faces a widening gap in critical science, technology, engineering, and math skills at all educational levels—from elementary to postsecondary. Increasingly many observers note that our national education and workforce training pipelines are out of sync with the dynamic needs of increasingly knowledge-driven global industries. Fixing this problem will require not only a substantial reworking of our K-12 educational system to improve student achievement in science, technology, engineering, and math, but also much closer attention to ensuring workers have the training they need to fill the jobs of America’s cutting edge firms.

Our colleagues Louis Soares and Steven Steigleder, in their paper “Building a Technically Skilled Workforce,” present several concrete and pragmatic steps for reorganizing the national workforce development system for competitiveness. We won’t repeat their work here, but a few points about the importance of integrating management of workforce development programs with technology, trade, and local economic development follow.

There are three important workforce functions that would be enhanced through strategic coordination with the other Department of Competitiveness functions: technical training, continuous career counseling, and industry-education collaboration. The Department of Labor already operates a network of “One-Stop” career centers in communities across the country. The nationwide network of Career “One-Stop” Centers provides basic labor market information, job search assistance, skill assessments, and limited career counseling to millions of workers every year.

As the economy becomes increasingly knowledge-based, the career counseling system needs to help workers move away from short-term job-placement services and toward long-term career development trajectories. Situating these and other workforce programs together with the other community-focused functions of the new department will help related efforts of job training, job placement, career counseling, and technical education become more responsive to the demands of local and national industry.

The Department of Labor’s Trade Adjustment Assistance program illustrates the profound relationship between trade, technology, training, and regional economic vitality. Changing trade relationships—whether caused by naturally evolving market dynamics or commercial diplomacy—have a profound effect on local industry, employment, and workforce needs. The Trade Adjustment Assistance program seeks to mitigate some of the worst effects of trade on communities by putting \$1.8 billion of federal funding to helping millions of Americans whose jobs are affected by changes in international trade patterns.²⁷ It provides a path of employment growth in each state through direct financial assistance, skills training, resources, and other support to help trade-affected individuals become re-employed.²⁸

But under current law, this program delivers training and resources to regions without careful regard to existing regional innovation and economic development strategies. In so doing it deprives workers and training providers from the opportunity to strategically develop skills and curricula geared toward the emerging industries most locally relevant to their region.

Better coordinating not just these efforts, but also all workforce training programs with regional economic development and innovation cluster efforts though the new department’s national competitiveness strategy would help ensure that workforce training, career counseling, and technical training are tailored to unique regional needs and to fill important industrial niches.

As the economy becomes increasingly knowledge-based, programs must help workers move away from short-term job-placement services and toward long-term career development trajectories.

Conclusion:

How to make this happen

An act of Congress would be needed for such a substantial reorganization as the one we suggest in the forward of this series on page ii, but the president already has considerable authority to set this agenda in motion. President Obama has already issued a presidential memorandum instructing agencies to begin assessing opportunities for consolidation and increased collaboration, and on January 13, 2012, asked Congress for the authority to take the next step.²⁹ As this process unfolds the president should also issue an executive order that creates interagency working groups in trade, technology, workforce training, and economic growth to ensure close coordination of programmatic efforts. These working groups could begin to do the detailed work of designing the coordination we advocate for in broad strokes here, and present its findings to Congress for a single up or down vote.

In an aggressive scenario, these working groups could be empowered with substantial authority so as to constitute a sort of “virtual agency” that fulfills many of the goals we lay out. This step would ensure that applications for governmental support can be handled through “one-stop shopping” that matches efforts at the federal level to the competitive advantages of the nation’s regional economies.

In essence, the Obama administration should do everything in its power to establish the Common Application competitiveness assistance program and the functional working relationships that the newly created department would need even if Congress refused to give formal reorganization authority. The executive order would mandate that the various agencies work together formally, institutionalizing some of the successful experiments in competitiveness-oriented thinking already in operation. Implementing this “virtual agency” with executive authority would test the functions of various agencies working together, and identify areas of increased synergy and decreased redundancy that we haven’t even considered in this paper. This would pave the way for Congress to enact a law to formally create the new department.

A final point: It may not make sense to put all of these agencies and bureaus into one department, or it might make sense to implement shared authority between

some of these existing bureaus and the new Department of Competitiveness. Many of the recommendations we suggest for consideration in this thought experiment could turn out to be of little or negative value. That is why testing them out with an executive order that mandates strong interagency coordination along the lines we sketch here would be instructive. Perhaps some of these agencies' best practices can be studied and replicated by others without the need for Congressional action. Proceeding in this iterative fashion would enable the Obama administration to answer the many inevitable questions from Congress about the strengths and weaknesses of this new approach.

What's not in doubt is the need to engage in this kind of government reform. For American firms, workers, and our economy to compete globally in the 21st century, we must rewire our government infrastructure to more effectively focus on innovation and competitiveness. While the strategy proposed in this document represents a first stab at a hugely complex undertaking, the proposal to streamline and integrate the implementation of federal programs around these four intrinsically linked areas of trade, technology, economic development, and workforce development is a necessary first step.

Appendix A

Existing programs for strategic management under the Common Application

The following table lists several dozen federal programs spread across the four spheres of trade, technology, training, and economic growth identified as potential candidates for integration through the Common Application program.

TABLE 1

Program	Agency	Funding level and type*	Purpose	Recipients
Small Business Innovation Research and Small Business Technology Transfer programs	SBA, in coordination with 11 others	\$2 billion in grants, sourced from multiple agencies	Leverages resources from 11 agencies to for demonstration, translational research, and technology commercialization. ³⁰	Start-up small businesses, and partnerships between universities and industry
Technology Innovation Program	NIST	\$75 million in grants requested, currently funded at \$44 million	Leverages private capital for high-risk, high-reward research in areas of critical national need. ³¹	Business and university joint ventures
Measurement Science and Engineering Research Grants	NIST	\$27 million in grants	Translational research in the fields of materials measurement, engineering, fire research, information technology, nanoscale technology, and others. ³²	Local, state, or tribal governments, and higher education, non-profit, or commercial organizations
7(a), 7(j) loans and grants	SBA	\$165.4 million in loan insurance/guarantees underwrites \$17 billion in private investment	Leverages private loans to support export expansion, rural operations, construction, short-term working capital, and veterans business enterprise assistance. ³³	Small businesses
Small Business Development Centers	SBA	\$116 million in project grants, specialized, advisory, and counseling services	Provide one-stop guidance, counseling, and entrepreneurship assistance. ³⁴	Small/start-up businesses, not-for-profit business development centers, higher education
Small Business Investment Companies	SBA	\$3 billion in direct loans, loan insurance/guarantees, advisory services and counseling	Leverages private venture capital in support of small, high-growth companies at the regional level	Start-up/small businesses via regional financial institutions
General Research and Technology Activity	HUD	\$50 million in project grants	Research, demonstration, and program evaluation in the three areas of housing, energy efficiency, and community development. ³⁵	Commercial, nonprofit, higher ed, or public research institutions
Industrial Innovation Partnership, Accelerating Innovation Research, and Academic Liaison with Industry programs	NSF	\$180 million in project grants and specialized services	Translational research /tech commercialization in areas of national industrial importance, operation of Industry/University Cooperative Research Centers. ³⁶	Commercial, nonprofit, higher ed, or public research institutions, together or separately
Technical Assistance	EDA	\$9.8 million in project grants	Conduct feasibility studies and provide operational assistance to formulate and implement regional economic development plans	Universities and nonprofits

Program	Agency	Funding level and type	Purpose	Recipients
Partnership Planning	EDA	\$31 million in project grants	Development of regional economic development plans	Local and tribal governments
Research and Evaluation	EDA	\$1.5 million in project grants	Research into “cutting edge economic development practices.”	Local, tribal, state governments, higher education or not-for-profit research institutions working with gov
Economic Adjustment Assistance	EDA	\$38.6 million in project grants	Regional economic strategy development, infrastructure construction, and revolving loan capitalization for technical, planning and public works in economically distressed regions	Local, tribal, state governments, higher education or not-for-profit research institutions working with gov
Sustainable Economic Development Program	EDA	\$25 million in project grants	Invests in clean energy, energy efficiency, green building, recycling, and green manufacture projects in underserved regions	Local, tribal, state governments, not-for-profit district organizations
21st century Innovation Infrastructure	EDA	\$158 million in project grants	Supports construction, expansion, or upgrade of public infrastructure	Local, tribal, state governments, not-for-profit district organizations
Trade Adjustment Assistance	EDA	\$15.8 million in cooperative agreements and project grants	Supports a network of trade adjustment centers that help small and medium-size firms and communities adapt to changing global trade conditions	Firms and local governments or community organizations
SBA Microloan and formula grant programs	SBA	\$25 million and \$13 million in microloan credit subsidy and formula grants	Leverages private capital for approved small businesses to use as working capital, for technical assistance, or the purchase of equipment or inventory	Small business via state governments and approved private lenders
Certified Development Companies / 504 loans	SBA	\$7.5 billion in lending authority	Leverages private capital for approved small businesses to acquire working capital, make equipment purchases, or expand exports. ³⁷	Small businesses via approved private lenders
8 (a) Business Development Program	SBA	\$52 million in specialized services	Services, guidance, counseling for entrepreneurs from disadvantaged backgrounds	Businesses owned/operated by socially or economically disadvantaged individuals
Program for Investment in Microenterprise (PRIME)	SBA	\$13 million in project grants and loan guarantees/insurance authority	Technical assistance, capacity building, research and development	Nonprofit microenterprise development organizations that are accountable to local communities or Indian tribes
Rural Business Enterprise grants and loans programs	USDA	\$40 million in project grants	Create, expand, or operate rural distance learning networks to provide educational or job training instruction in response to market needs; develop, construct, or acquire land, buildings, plants, equipment; refinancing; establishment of revolving loan funds. ³⁸	Public bodies and nonprofit development organizations serving rural regions
Rural Microentrepreneur Assistance Program	USDA	\$31 million in direct loans	Loans to provide continuing technical and financial assistance related to the successful operation of rural microenterprises	Nonprofit or tribal microenterprise development organizations, institutions of higher education

Program	Agency	Funding level and type	Purpose	Recipients
Business and Industry Guaranteed Loans	USDA	\$43 million in credit subsidies supporting \$993 million in private investment	Leverage private capital to improve, develop, or finance business, industry, and employment and improve the economic and environmental climate in rural communities	Commercial or nonprofit development corporations
H-1B Technical Skills Training	DOL/ ETA	\$240 million in formula grants to states. ³⁹	Facilitate job training and placement assistance for American citizens in competitive, high-skill industries that “are being transformed by technology and innovation requiring new skill sets for workers.” ⁴⁰	State governments, re-granted to educational institutions and training providers
WIA Pilots, Demonstrations, and Research	DOL/ ETA	\$45 million in project grants or contracts	Conduct research, pilots, or demonstrations that improve techniques of existing or new ETA workforce training programs. ⁴¹	State and local governments, federal agencies, private nonprofit and for-profit organizations, educational institutions
Green Jobs Innovation Fund	DOL/ ETA	\$60 million in project grants	Expand training opportunities in green industry sectors, help workers get better jobs, and increase compensation. ⁴²	Workforce training providers, educational institutions
Advanced Technological Education	NSF	\$64 million in project grants	Support curriculum development and professional development for educators to foster next generation of technicians	Institutions of higher education, nonprofits
Science, Technology, Engineering, and Mathematics Talent Expansion Program	NSF	\$30 million in project grants	Implementation of programs at academic institutions designed to increase the number of students receiving associate or bachelor’s degrees in established or emerging STEM fields	Institutions of higher education, nonprofits
Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics	NSF	\$38 million in project grants	Supports “projects that develop faculty expertise, implement educational innovations, assess learning and evaluate innovations, prepare K-12 teachers, or conduct research on STEM teaching and learning”	Institutions of higher education
Math and Science Partnership	NSF	\$58 million in project grants	Supports a national network to share best practices and enhance coordination around science and math education	Institutions of higher education

* Budget figures are approximate. Appropriations from the catalogue of Federal Domestic Assistance, or from agency budget documents.

Appendix B

Existing trade programs and the new Competitiveness Department

Office of the United States Trade Representative

The office of the USTR is a \$48 million White House office responsible for developing and coordinating U.S. international trade, commodities, and direct investment policy, and overseeing negotiations with other countries.⁴³ Under the reorganized Department of Competitiveness, the U.S. trade representative could also serve as the deputy secretary for trade in addition to being the president's primary adviser on trade issues.

The U.S. trade representative would retain a streamlined office in the executive office of the president to facilitate his or her advisory role. The bulk of interagency trade policy coordination done by the office would move and integrate with the new trade agency within the Department of Competitiveness. The unique dual nature of this new position within the new department and within the White House could have the potential to complicate lines of authority within the executive branch between the undersecretary and the secretary of the new department. But we believe that the potential benefits of cross-executive branch coordination created by this process—interagency coordination at the new department and a presidential advisory role at the White House—would bring trade competitiveness issues more directly to the fore in U.S. policymaking without weakening the historic strengths of USTR.

International Trade Administration

Fresh off of a major round of internal reorganization, and with a little more than \$500 million in annual budget authority, the International Trade Administration is well positioned to remain the kernel of trade policymaking and business-facing service delivery in the reorganized Department of Competitiveness. Two of ITA's four business units further the trade representation function of the trade agency within the new department.⁴⁴

The Market Access and Compliance office and the Import Administration office both work at a strategic level to help enforce trade laws, and conduct commercial diplomacy to ensure that American businesses and products can compete on a level playing field. We suggest that these two units could be merged with the trade representation and functions of the USTR and the relevant State Department trade representation functions described below as part of a more comprehensive trade policy apparatus.^{45 46}

The other two units at ITA, Commercial Service and Manufacturing and Services, provide industry-facing services and should be more tightly integrated with the financing services provided by the Overseas Private Investment Corporation and U.S. Export-Import Bank (both discussed below). The U.S. Commercial Service provides a number of services, including trade counseling, market intelligence, business matchmaking, and trade promotion programs.⁴⁷ The Manufacturing and Services unit and the Market Development Cooperator Program within it are tasked with helping U.S. manufacturing and services compete in international markets through the coordination of technical standards, and by helping with interagency coordination around export promotion.⁴⁸

Bringing these functions into the trade agency and aligning them more closely with similar financing assistance and counseling services in the Ex-Im Bank would help streamline government-industry interaction, provide the opportunity for coordinated strategic planning, and eliminate redundancy. The capability of the new department's trade functions will certainly improve our nation's vital export push.

Department of State's trade functions

Bringing trade representation under one roof will require a more strategic integration with the State Department's trade functions as well. We suggest that the new trade agency within the competitiveness department integrate the State Department's Office of Trade Policy and Programs,⁴⁹ including all of its four offices:

- Office of Agriculture, Biotechnology, and Textile Trade Affairs, which covers all bilateral and multilateral trade agreements relating to agricultural products, and seeks to maintain open markets for U.S. biotech products
- Office of Bilateral Trade Affairs,⁵⁰ which more broadly manages U.S. bilateral trade relations around the world, including negotiation of free trade agreements and trade preference programs
- Office of Intellectual Property Enforcement,⁵¹ which helps protect American technology from patent and copyright infringement abroad
- Office of Multilateral Trade Affairs,⁵² which manages U.S. interests in multilateral trade institutions, including the World Trade Organization and the Organisation for Economic Co-operation and Development

Because these offices do the actual legwork of negotiating and implementing various aspects of U.S. trade policy, they should be at the disposal of the new undersecretary for trade.

Additionally, two of the three branches of the Office of Commercial and Business Affairs—the Office of Commercial Diplomacy, which provides advocacy and support to American businesses in operation abroad, and the Office of Entrepreneurship, which acts as a vehicle to coordinate business and research relationships with partners around the world—are ripe for reorganization and inclusion in the streamlined trade agency.⁵³ Consolidating the industry-facing services provided by the Office of Commercial Diplomacy with those provided by the Ex-Im Bank, the Overseas Private Investment Corporation and the U.S. Trade and Development Agency would help provide a more coherent user interface for American businesses.

Similarly, the Office of Economic Policy Analysis and Public Diplomacy, with its expertise in private-sector participation, global macroeconomics, and the impact of policy on the international business climate, would be an asset to the new Competitiveness Department. Its big-picture policy work would do well to be integrated into the Office of the Undersecretary for Trade.⁵⁴

Bureau of Industry and Security

Currently in the Department of Commerce, the mission of BIS is to “advance U.S. national security, foreign policy, and economic objectives by ensuring an effective export control and treaty compliance system and promoting continued U.S. strategic technology leadership.”⁵⁵ The bureau has an annual budget of approximately \$100 million.⁵⁶ These trade-oriented functions should be integrated and streamlined with the above in this list in order to develop synergies among existing enforcement mechanisms and trade tools.

The importance of bringing this bureau into the larger orbit of trade and exports cannot be overstated. The United States boasts the largest market in the world, but our companies’ access to other nation’s markets often are held hostage to implicit or explicit, but unfair, technology transfer demands, including from fast-developing nations such as China. Protecting our companies from these demands must be a major focus of the new Department of Competitiveness.

Similarly, intellectual property theft that threatens our companies’ competitiveness at home remains a major problem abroad too, again with China a flagrant

violator. Again, coordinating our nation's response will be a top priority of the new department.

Export-Import Bank of the United States

With its mission to help create domestic jobs, the Ex-Im Bank has supported more than \$456 billion of U.S. exports in its 77 years of experience. As the official export credit agency of our nation, the Ex-Im Bank helps U.S. manufacturers access overseas markets through credit enhancements and financial tools that mitigate some of the risks associated with doing business in foreign markets.⁵⁷

The Ex-Im Bank would bring the teeth to the new trade-promotion sub-agency. Bringing this financially self-sustaining agency together with other federal trade functions would overcome hidden and overt foreign protectionism and help bring U.S. technologies to new and growing global markets.⁵⁸ From financing assistance to working capital loans to insurance, the Ex-Im Bank's broad authorities allow for a powerful suite of industry-facing services.

The addition of the Ex-Im Bank to the new trade sub-agency would provide the firepower needed to implement the new trade-related technology and economic development goals identified by the new Competitiveness Department.

U.S. Trade and Development Agency

USTDA is an independent government foreign assistance agency funded by Congress to help companies create American jobs through the export of goods and services in emerging markets. U.S. businesses are linked to export opportunities through funded project-planning activities, pilot projects, and reverse trade missions.

With \$55 million in annual appropriations today, USTDA programs over 10 years generated about \$14 billion in U.S. exports to emerging markets, supporting as many as 87,000 American jobs.⁵⁹ That represents a private return on public investment of more than 2,500 percent, and a private-sector job-creation rate of under \$6,500 per job.

Indeed, USTDA's unique expertise, contacts, and capabilities related to commerce with developing markets are very similar to that of the International Trade Administration, OPIC, and the Ex-Im Bank. For this reason it makes a good candidate for integration with these agencies in the streamlined trade agency within the new Competitiveness Department.

Overseas Private Investment Corporation

OPIC is an independent, financially self-sustaining federal agency with a budget of roughly \$80 million that mobilizes private capital for the purpose of helping solve critical world challenges in more than 150 developing and transitional economies.⁶⁰ In doing so, the OPIC advances U.S. foreign policy while helping American businesses create strong footholds in emerging markets by providing companies with investors, guarantees, political risk insurance, and support for private equity investment funds.

OPIC's mission is closely related to that of the U.S. Trade and Development Agency, and the loans, insurance, and financing assistance it provides represent a similar set of tools, making it an excellent candidate for consolidation within the same umbrella trade agency. Integrating all of the export and international financing assistance programs in the Ex-Im Bank, USTDA, and OPIC would allow better implementation of competitiveness-focused trade strategies such as the president's National Export Initiative to double exports in five years.⁶¹

Existing technology programs and the new Competitiveness Department

National Institute of Standards and Technology and its Manufacturing Extension Partnerships

The National Institute of Standards and Technology is an unsung hero of general-purpose technology innovation within the Department of Commerce. NIST is one of the few agencies outside the Department of Defense that has developed over centuries a close and functional relationship with industry and the capacity to play a positive role in the development and dissemination of new industrial technology. Its inclusion in the Department of Competitiveness goes without saying.

NIST currently has a budget of approximately \$1 billion.⁶² Support for NIST must include its traditional industry-oriented laboratories, as well as its extension programs such as its Manufacturing Extension Partnership, or MEP, program, which leverages federal funds for local money on a virtually dollar-for-dollar basis. The MEP program maintains a network of more than 1,400 field staff in offices in every state, providing U.S. manufacturing companies with a wide array of fundamental services, helping them to access cutting-edge technology and become more efficient and competitive in global markets.

The MEP, in its own words, “works with partners at the state and federal levels on programs that put manufacturers in position to develop new customers, expand into new markets and create new products.”⁶³ The MEP has a record of success in helping spur innovation and create jobs. The Department of Commerce reports that in 2009 the MEP helped manufacturers retain more than 72,000 American jobs, at a cost of \$1,600 per job. That’s a great return on investment. Put another way, for every \$1 of federal investment, the MEP program generates on average \$32 in new sales growth, helping build markets for the technologies that will power our future.

But the network represented by the MEP could be better leveraged if coordinated with networks from the Economic Development Administration, Employment and Training Administration, and Small Business Administration. The task of moving technology from university or start-up to market requires not just a proof-of-concept and someone to make it, but also a pool of capable workers, the availability of financial capital, access to the markets and supply chains, and close contact with the eventual customers of the new technology. Thus, coordinating

the regional networks of the MEP with those of the other agencies included in the Department of Competitiveness would help ensure that manufacturers across the country are well supported by the talent, infrastructure, creativity, and private financial capital of the communities that surround them.

National Telecommunications and Information Administration

Already within the Department of Commerce, this bureau deals with telecommunications broadband and spectrum dissemination and regulation, along with important policy issues such as online privacy, and provides information to the president on telecommunications matters. As broadband infrastructure remains an important part of innovation ecosystems and local economies, it follows that this agency should sit within the reorganized Department of Competitiveness in order to better collaborate critical infrastructure investments with broader regional economic development and technology innovation grants.

The agency's budget is currently approximately \$55 million.⁶⁴ The U.S. Department of Agriculture's Broadband Initiative Program would be joined with NTIA in the new Department of Competitiveness. The reason: Fully linking all of our nation's communities via broadband will bring the promise of economic development to all Americans—a strategy that requires coordinated federal policies. Additionally, given the similarity of purpose between the U.S. Department of Agriculture's broadband initiative and the NTIA, combining these programs would benefit both of them, while ensuring that rural regions continue to receive the support they need.

National Technical Information Service

The National Technical Information Service, or NTIS, is a self-funding agency that serves as the federal government's central repository for data about public and private R&D activities and results.⁶⁵ NTIS maintains a library of more than 3 million technical documents and journal articles and makes them available to businesses and the public.

This agency's function must be strengthened and integrated with the Department of Commerce's Economics and Statistics Administration and the Department of Labor's Bureau of Labor Statistics to give the federal government and Congress a comprehensive overview of our national economic competitiveness.

Patent and Trademark Office

The Patent and Trademark Office, or PTO, plays an important gatekeeper role in all technology-related enterprises. A reformed and independent PTO with

increased control over its own costs and revenue remains a critical component of the new Department of Competitiveness. Increased proximity with international intellectual property and trade enforcement functions in the new department could also be advantageous.

The PTO is self-funding, but Congress frequently raids the PTO's coffers, preventing the organization from doing the necessary hiring it needs to do to eliminate the massive backlog of patent applications or reduce the three-year wait time for patent decisions.^{66 67} A reformed PTO with enhanced autonomy, particularly over budget, staff, and hiring, would remain within the Department of Competitiveness. Reducing patent pendency rates and accelerating the patent process would help companies and innovators bring their inventions to market more quickly and with greater ease. Additionally, more strategic use of the patent process not just as a one-time interaction with inventors but also as a gateway for the commercialization of new technology could help accelerate start-up businesses development and job creation.

Recently the president signed into law the America Invents Act, which addresses the challenges enumerated above and confers some fee-setting authority on the Patent and Trademark Office, while implementing a first-to-file system.

Appendix D

Existing small business and local economic coordination programs and the new Competitiveness Department

Economic Development Administration

The Economic Development Administration, or EDA, is a small agency with big power. With an annual spending authority of only \$345 million, EDA nonetheless plays and should continue to play an important role in bringing together other federal resources around the goal of bottom-up, place-based innovation and economic development.⁶⁸ Its existing key programs,⁶⁹ listed below, would be at the heart of regional innovation and economic development through the Common Application program:

- Technical Assistance, a \$9.8 million program that helps universities and non-profits to conduct feasibility studies, formulate and implement economic development tools, and provide management and operational assistance.⁷⁰
- Partnership Planning, a \$31 million program for localities and tribes to obtain funding to develop regional economic development plans.⁷¹
- Research and Evaluation, a \$1.5 million program for research into “cutting-edge economic development practices.”⁷²
- Economic Adjustment Assistance, a \$38.6 million program for strategy development, infrastructure construction, and revolving loan capitalization for technical, planning, and public works projects in economically distressed regions.⁷³
- 21st-Century Innovation Infrastructure (formerly Public Works and Economic Development), which provides \$158 million to support the construction, expansion, or upgrade of public infrastructure.⁷⁴
- Trade Adjustment Assistance for Firms (\$15.8 million), which supports a network of trade adjustment centers that assist small and medium-size firms in adapting to changing global trade conditions.⁷⁵
- Regional Innovation Program (formerly Growth Zones) (\$40 million), which facilitates a nationwide competition to encourage 20 communities to develop and implement regional strategic economic growth plans.⁷⁶

- Sustainable Economic Development (formerly Global Climate Change Mitigation Incentive Fund) (\$25 million), which helps underserved communities fund clean energy, energy-efficient green building, recycling, and green manufacture projects.⁷⁷

The EDA is currently the center of federal efforts to empower communities to engage in bottom-up economic revitalization and growth planning and implementation. This is why we believe the agency should be the centerpiece of the new Competitiveness Department's economic growth focus. In today's economic environment, these programs are helping small businesses, communities, regions, and localities to reinvent themselves and create new ways forward. Moreover, these programs, if integrated, would give the Common Application program flexibility in its authority to fund a broad array of bottom-up regional economic development activities.

Small Business Administration

The Small Business Administration operates a number of programs with similar goals targeted at individual businesses that should be harmonized with the broader regional economic development activities funded above. Already the SBA operates programs that address technology, workforce, and trade-related challenges, so bringing these functions together with others within a Competitiveness Department makes sense. Many of the SBA's programs make sense as straightforward components of the Common Application, and are listed in Appendix A.

Region-level economic growth strategies supported by EDA and the firm- and project-level programs supported by SBA are complementary, and together can create new synergies and put additional tools at the disposal of both innovative small business seeking and the regional economies that support their success.

Minority Business Development Administration

The Minority Business Development Administration, currently budgeted at \$32.3 million, uses many of the same tools at play elsewhere in the Department of Commerce.⁷⁸ That's why its programs should be folded into broader competitiveness objectives of this new department's office of economic growth while ensuring that the services rendered to the business community are equitably shared and used to empower communities of color.

The MBDA programs whose goals and missions must continue to operate within the new Department of Competitiveness are its MBDA Business Centers (\$14

million), comprising the Minority Business Enterprise Centers (\$8 million), the Native American Business Enterprise Centers (\$2 million), and the Minority Business Opportunity Center (\$2 million).⁷⁹ The minority-owned businesses aided by these centers would be better served through their inclusion in the broader gambit of regional economic growth strategies.

Center for Veterans Enterprise

The Center for Veterans Enterprise boasts two simultaneous and mutually reinforcing functions. First, it provides services and counseling to our returning veterans to help them reintegrate into society through entrepreneurship training and programs. Second, it serves as a way to harness a powerful and untapped resource for our nation's long-term competitiveness—the skills, ingenuity, and leadership of our returning veterans.

Our soldiers are some of the most highly trained and resourceful individuals in the economy. In addition to fulfilling the moral obligation to provide them with career opportunities as they return from duty and transition back into civilian life, we also seize the opportunity that their skills represent. Our veterans represent a resource that should be leveraged more aggressively toward our goals of domestic innovation and competitiveness. In order to demonstrate our continued commitment to our nation's veterans, this function would be maintained as a separate unit within the new department.

Department of Rural Development

The Department of Rural Development (\$2.9 billion) coordinates key infrastructure and services in underserved rural regions, including sewer, water, health care, and bottom-up community-managed finance.⁸⁰ The Department of Rural Development manages a \$115 billion portfolio in rural community development loans, and these existing loans, as well as future ones, should be coordinated around the goals of bringing the infrastructure of innovation and competitiveness to every corner of the country.⁸¹ (The Department of Agriculture's Broadband Initiatives Program would be separately joined with NTIA, as detailed in the first section of our report.)

Specifically, the Rural Business-Cooperative Service, which works to promote the understanding and use of the cooperative business model through loans, grants, loan guarantees, and nonfinancial technical assistance to entrepreneurs and development organizations, would benefit from coordination through the Common App.⁸² Among its programs are:

- Business and Industry Guaranteed loans (\$993 million program level, \$43 million budget authority), which leverage private capital to “improve, develop, or finance business, industry, and employment and improve the economic and environmental climate in rural communities”⁸³
- Rural Business Enterprise grants (\$40 million), which provide funding for public works and critical rural infrastructure, as well as capitalization for revolving business loan funds⁸⁴

Any decision to move the Department of Rural Development will be controversial. In particular, it is likely to be said that other parts of the government do not understand the special needs of rural America. That could be, of course, partly because rural programs have traditionally been kept separate, but the need to include rural development in a broader bottom-up economic growth strategy rests on two propositions.

First, intra-agency coordination is more effective than interagency coordination. Shared goals, organizational culture, systems of accountability, and physical working environments make collaboration and idea cross-pollination more effective within an agency than across them.

Second, there seems little doubt that rural development needs to be connected in some ways with the economic growth strategies (and, in the case of the Broadband Initiative Program, with NTIA) of the new Department of Competitiveness. Rural America simply has to be better linked to the centers of regional economies to help its agricultural businesses, but in particular its manufacturing and services industries, which account for more than half of all employment in rural America.⁸⁵

Federal programs that support bottom-up regional economic growth will increase the effectiveness of regional economies and will easily span rural-to-urban communities. That would counsel in favor of finding common regional advantages between urban, suburban, and rural strengths.

Nonetheless, if this change is made, it will be important that the new economic development unit be given the charge to reach all regions and the expertise to work in rural areas. As a matter of history, much of the support for EDA has come from rural, and not urban, legislators, which may give that agency a head start in integrating different geographic economic strategies.

Community Planning and Development

The Community Planning and Development, or CPD, program costs \$9 million to administer and provides tens of billions of dollars in financial incentives to underserved localities and regions.⁸⁶ Given the place-based nature of this work within the Department of Housing and Urban Development, as well as its similarity to existing programs administered by the Small Business Administration, Economic Development Administration, USDA, and elsewhere, we suggest that the programs and expertise be explicitly coordinated or completely integrated into the new economic development agency within the Department of Competitiveness.

The programs within the CPD that help coordinate public and private infrastructure and development needs would do well in the new department. It operates several economic and community development initiatives that may be redundant with many of the programs already mentioned in this paper, including a host of financial supports from loan guarantees to tax credits to block grants.⁸⁷ We suggest, however, that certain activities related to affordable housing assistance and specialty needs should remain at HUD.

Office of Economic Adjustment

We believe that the inclusion of the Defense Department's Office of Economic Adjustment (\$80 million) would be a big plus for the new Office of Undersecretary for Economic Growth, due to OEA's experience with region-based economic planning.⁸⁸ The OEA has a long history of helping regions and localities adjust to changing economic circumstances as they transition from dependence on the defense-industrial complex to other forms of industry. Why should this expertise and proven track record in catalyzing effective regional economic planning and industrial transition be limited only to situations impacted by the Defense Department? These networks and expertise need to be tapped as we integrate federal involvement with bottom-up, place-based innovation strategies.

Specifically, the OEA's Community Economic Adjustment Planning Assistance, or CEAPA, grant programs would do well within the new department. This office currently dispenses grants for the planning and implementation of regional economic adjustment strategies in four areas:

- Compatible Use grants help to fund joint land-use studies that protect the public health and safety of civilian development, while ensuring that communities can make the most of the economic opportunities of their proximity to defense installations.⁸⁹

- Defense Industry Adjustment grants help communities affected by factory closures and other forms of defense employment reduction to adapt to changing economic circumstances, including helping bring together many of the tools we suggest merging permanently in this report such as the manufacturing extension partnerships, business financing and incubator programs, workforce assistance programs, export plans, and oversight about how to integrate the benefits of these programs.⁹⁰
- Mission Growth Planning Assistance grants provide similar resources as the Defense Industry Adjustment grants for communities experiencing defense-industry-related growth.
- The Base Realignment and Closure, or BRAC, grant program has 50 years of experience in facilitating economic transition caused by military base closures. The grants and guidance are made available through BRAC. But we suggest that the BRAC commission itself, which makes geographic national-security decisions, should remain where it is in the Defense Department.

Appendix E

Existing workforce programs and the new Competitiveness Department

Employment and Training Administration, Department of Labor

The crux of the workforce efforts within the new department should consist of much of the work currently conducted by the Department of Labor's Employment and Training Administration, or ETA, and its regional networks of public career and employment services providers. With an annual budget of roughly \$12.5 billion, the ETA supports a wide range of activities and programs that protect or enrich more than 10 million American workers annually.⁹¹

We believe that the ETA functions designed to enrich workers with skills, education, training, guidance, and counseling would be critical assets for the new Department of Competitiveness. Those programs such as the Unemployment Insurance program, which helps protect workers from structural unemployment as part of the social safety net, can and should remain at the Department of Labor.

These continuous career counseling and technical training functions of the ETA would constitute the first core function of our plan for competitive workforce development. Enabling all Americans to plan long-term career pathways instead of repeatedly responding to short-term unemployment emergencies would be a core goal of this office. The nationwide network of One-Stop Career Centers already provides basic labor market information, job search assistance, skill assessments, and limited career counseling to millions of workers every year.

But the One-Stop system can no longer be a crisis intervention system focused on short-term job placement. Continuous career counseling is an iterative, mentored process that enables workers to build education, work experiences, and technical credentials over time, and should be a new focus of the One-Stop system. As the economy becomes increasingly knowledge-based, career counselors will help workers move away from short-term training programs that serve as temporary Band-Aids and instead, help them plan long-term career development trajectories.

The goals of developing and protecting America's talent are laudable unto themselves. But ETA's many workforce development programs would be more effective if managed with an eye toward the role they play in achieving broader competitiveness goals at the regional and national level. Thus, we suggest moving these functions into the new department, to be deployed side-by-side with regional

funding and programmatic support delivered to small businesses, public works projects, regional economic development programs, start-up incubators, and university-industry research partnerships.

The following offices and programs⁹² managed by the ETA support these goals of continuous career counseling and technical training:

- The Office of Workforce Investment, which coordinates funding from the Workforce Investment Act, maintains the national network of One-Stop Career Centers and doles out funding via state workforce investment boards, would be a core asset to the new department.⁹³ Connected to this work, the \$3.8 billion set of programs listed under Training and Employment Services includes the Adult Worker, Dislocated Worker, and Youth Services programs, with annual budgets of \$861 million, \$1.4 billion, and \$924 million, respectively.⁹⁴ The One-Stop Career Centers, the workforce innovation fund, green jobs innovation fund, career pathways innovation fund, and dislocated workers assistance are discussed separately below.
- The One-Stop Career Centers act as the user interface for the ETA's employment, career counseling, and training programs.⁹⁵ They provide access to a wide range of federal training, guidance, credentialing, and other professional development services to job-seekers and employers, and constitute a large network of regional offices. Our recommendation is to include the One-Stop Career Centers in the new department, while combining their efforts with other regional programs currently under the Economic Development Administration, the Department of Education, and elsewhere in the ETA. This would mean broadening the ability of the One-Stop network to deliver long-term career development, training, education, and credentialing services to complement existing strengths around short-term job placement.
- The Office of Regional Management operates the network of regional ETA offices.⁹⁶ Combining this national network of regional offices with the regional offices in the Economic Development Administration would work to better leverage the assets and activities of both organizations.
- The Office of Policy & Research currently helps set the ETA's strategic vision and legislative and regulatory approach.⁹⁷ This office will be critical to the work of the undersecretary as new synergies are explored between the ETA's programs and those that will reside in the economic development and technology sub-agencies in the new Department of Competitiveness.

- The Trade Adjustment Assistance program, or TAA, at a cost of \$1.8 billion, helps millions of Americans whose jobs are affected by changes in international trade patterns.⁹⁸ By directly aiding U.S. workers who have lost jobs as a result of foreign aid, the Trade Adjustment Assistance program at the Labor Department provides a path of employment growth in each state.⁹⁹ In addition to direct financial assistance, the program provides the skills, resources, and support to help trade-affected individuals become re-employed. Congress provided an additional \$500 million in TAA funding through FY 2011 ending in October, following authorization in the American Recovery and Reinvestment Act of 2009 through the TAA Community College and Career Training grant program.¹⁰⁰ Bringing this department under the same roof with the trade-related programs in the new department could help improve accountability and data-driven management of the program by better connecting it with activities of various federal trade and workforce functions and intelligence.
- The Office of Job Corps, a \$1.7 billion program, operates a national network of 125 centers around the country that provide young people ages 16-24 in underserved or distressed communities with holistic job training and career counseling services that integrate the “teaching of academic, vocational, employability skills and social competencies through a combination of classroom and practical based learning experiences.”¹⁰¹
- The Office of Apprenticeship currently operates the registered apprenticeship program, a \$28.7 million program that provides workers with on-the-job training while providing employers with a pipeline of skilled workers in their field.¹⁰² Participating employers are also eligible for tax benefits and workforce development grants. There is also an additional \$1 million in funds for Women in Apprenticeship—a program that promotes the recruitment, training, and employment of women in apprenticeship and nontraditional occupations. Bringing this program into the Department of Competitiveness would accelerate efforts already underway to increase the program’s focus on innovative, 21st-century science-, technology-, engineering-, and math-oriented career ladders.¹⁰³

Office of Vocational and Adult Education, Department of Education

The second core function of the new competitive workforce office would be to enhance integration of the higher education, technical education, and workforce training systems. The first step to accomplishing this goal would be to bring the Education Department’s Office of Vocational and Adult Education into the Department of Competitiveness, adjusting its duties and functions to suit the needs of a more networked competitiveness strategy.

The Office of Vocational and Adult Education, a \$1.7 billion agency, dispenses grants to fund adult literacy, career and technical education, and community college programs at the state level.¹⁰⁴ These grants are used to help students, particularly adult students, gain the educational resources necessary to train for high-skill, high-wage, and high-demand occupations in the innovation economy. In doing so, they deal with similar stakeholders and operate similar programs with those in the ETA's various technical-skills job training programs.

We believe the effectiveness of the adult career and technical education grants could be optimized by relocating those offices to the new Department of Competitiveness. But we would leave broader community college funding programs alone. The Department of Education division responsible for directing the role of community colleges in national education policy broadly—the Office of Postsecondary Education—should focus on enhanced collaboration with new Department of Competitiveness workforce development programs rather than be transferred over to the new department.¹⁰⁵ Its program activities are broader than the technical programs discussed above and are better served by the Education Department's focus on developing quality academic standards than on our new department's goals.

Our current system of middle-skill technical education does not provide sufficient course credit portability to adequately reward workers who develop new skills. A revamped Office of Vocational and Adult Education would work collaboratively with community colleges, training providers, and industry to ensure that all publicly and privately funded training programs produce transferable and portable college credits. This would help workers build their skills and credentials more flexibly, effectively, and continuously to keep pace with the rapidly changing demands of the innovation economy. This directive would include training programs such as WIA State Grants for Dislocated Workers, WIA competitive grants, H-1B Technical Skills training grants, Trade Adjustment Assistance job training funds (including Trade Adjustment Assistance Community College and Career Training Grants), Workforce Innovation Funds, and Perkins CTE grants for postsecondary education.

The Department of Labor's H-1B Technical Skills training grant competition is a good example of an existing job-training program with integrated college credit. These grants are intended "to raise the technical skill levels of American workers so they can obtain or upgrade employment in high-growth industries and occupations." The grant competition helps stimulate innovation in job training programs by linking grant awards to attainment of industry-recognized credentials. These

grants, with enhanced access to industry and economic development networks brought by the agencies in the other three pillars, could take this much further. The training grants included linking future grant competitions to credential programs that also provide transferable college credit. Ultimately, all training funds for college-ready students and workers should be tied to college credit and include a pathway to an associate degree or better.

In addition to the Department of Labor programs discussed above, another major source of funding for these technical education and job training programs comes from the Division of Academic and Technical Education,¹⁰⁶ or DATE, under the Office of Vocational and Adult Education. DATE is responsible for administering the Perkins Career and Technical Education Act,¹⁰⁷ which provides \$1.1 billion in state formula grants for activities such as:

- Creating integrated programs merging academic and career technical education
- Providing preparation for nontraditional fields in current and emerging high-skill, high-wage, high-demand professions
- Supporting partnerships among local educational agencies, institutions of higher education, and adult education providers

But as our colleagues Louis Soares and Stephen Stiegleder discuss at length in a forthcoming paper in this series “Building a Technically Skilled Workforce,” the Perkins funds—divided evenly across many states, and then again within states across multiple training programs—fall short of the amount necessary to foster policy innovation among training services providers. Converting these funds into a competitive grant program to be included in our Common Application program would maximize the impact of these funds, albeit at the expense of distributing them evenly according to the existing formula.

Including this new competitive grant program in the Common Application program with those focused on community college and industry partnerships would help bring together the related efforts of job training, job placement, career counseling, and technical education targeted toward regional and industry demands.

National Science Foundation workforce education programs

Finally, the National Science Foundation currently funds a number of grant programs designed to enhance science, technology, engineering, and math education, which could be better leveraged by rolling them into the Competitiveness Department’s Common Application program:

- The Advanced Technological Education program at the National Science Foundation focuses on educating and preparing technicians for the next generation of high-tech fields with a special emphasis on two-year colleges.¹⁰⁸ The \$64 million program supports curriculum development, professional development for educators, and bridging connections between secondary institutions and two- and four-year programs.¹⁰⁹
- The Science, Technology, Engineering, and Mathematics Talent Expansion Program, or STEP, provides about \$30 million annually for implementation of programs at academic institutions designed to increase the number of students receiving associate or bachelor's degrees in established or emerging STEM fields, as well as funding social science research on increasing associate or bachelor's degree attainment in STEM.¹¹⁰
- The Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics program similarly allocates \$38 million in funding for "projects that develop faculty expertise, implement educational innovations, assess learning and evaluate innovations, prepare K-12 teachers, or conduct research on STEM teaching and learning."¹¹¹
- The Math and Science Partnership, or MSP, program is a major research and development effort that supports innovative partnerships to improve K-12 student achievement in mathematics and science.¹¹² The program supports a national network that connects all projects funded by the MSP program to share best practices and enhance coordination.¹¹³

These STEM education programs could benefit from coordination with the technical training, college credit, and continuous career counseling discussed above, as well as with enhanced intelligence about regional businesses, industry, and long-term growth plans provided by the other pillars of the Department of Competitiveness. We posit that the STEM and technical education programs supported by these NSF grants could be tailored to fit the unique business and future workforce needs of regional economies, industries, and innovation clusters.

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Endnotes

- 1 "A Strategy for American Innovation: Securing Our Economic Growth and Prosperity," The White House, available at <http://www.whitehouse.gov/innovation/strategy>
- 2 "Presidential Memorandum--Government Reform for Competitiveness and Innovation," The White House, March 11, 2011. Available: <http://www.whitehouse.gov/the-press-office/2011/03/11/presidential-memorandum-government-reform-competitiveness-and-innovation>
- 3 S. Pool, "A Win for Regional Innovation: Interagency Energy Efficiency Cluster Initiative to be Located in Philadelphia" (Washington: Science Progress, August 25, 2010), available at <http://scienceprogress.org/2010/08/a-win-for-regional-innovation/>
- 4 A. Rai, S. Graham, and M. Doms, "Patent Reform: Unleashing Innovation, Promoting Economic Growth & Producing High-Paying Jobs," U.S. Department of Commerce, April 13, 2010, available at http://www.commerce.gov/sites/default/files/documents/migrated/Patent_Reform-paper.pdf
- 5 B. Hendricks, S. Pool, and L. Kaufman, "Low Carbon Innovation," American Progress, May 2011, available at: http://www.americanprogress.org/issues/2011/05/low_carbon_innovation.html
- 6 J. Erickson and S. Pool, "Accelerating Regional Innovation and Job Creation," American Progress, November 2011, available: http://www.americanprogress.org/issues/2011/11/jobs_accelerator.html
- 7 "Jobs & Innovation Accelerator Challenge," Economic Development Administration website, available: <http://www.eda.gov/InvestmentsGrants/jobsandinnovationchallenge> (last accessed 12/3/2011).
- 8 Small Business Administration Regions. National Association of Government Guaranteed Lenders, available at http://www.naggl.org/Content/NavigationMenu/GuaranteedLending/SBARRegionsMap/SBA_Regions_Map.htm; Regional Offices. Economic Development Administration, available at <http://www.eda.gov/AboutEDA/Regions.xml>; Hollings Manufacturing Extension Partnership, available at <http://www.nist.gov/mep/>; Regional Offices. United States Department of Labor, available at http://www.doleta.gov/regions/regoffices/Pages/eta_default.cfm?CFID=2294190&CFTOKEN=79008356
- 9 Budget, Defense Advanced Research Projects Agency, available at <http://www.darpa.mil/NewsEvents/Budget.aspx>
- 10 Proposed Appropriation Language, Energy Transformation Acceleration Fund Advanced Research Projects Agency--Energy (ARPA-E), available at <http://arpa-e.energy.gov/LinkClick.aspx?fileticket=FzuPHgdX6r8%3d&tabid=184>
- 11 Department of Energy Budget by Organization, available at <http://www.cfo.doe.gov/budget/12budget/Content/Orgsum.pdf>
- 12 Ibid.
- 13 "About Us," National Institute of Food and Agriculture, available at <http://www.csrees.usda.gov/qlinks/research.html>; Education, National Institute of Food and Agriculture, available at <http://www.csrees.usda.gov/nea/education/education.html>; FY 2011 President's Budget Proposal, National Institute of Food and Agriculture, available at http://www.csrees.usda.gov/about/offices/budget/fy2011_budget.pdf
- 14 Historical Tables, Office of Management and Budget, The White House, available at <http://www.whitehouse.gov/omb/budget/Historical>
- 15 FY 2012 ED Budget Summary: Elementary and Secondary Education, U.S. Department of Education, available at <http://www2.ed.gov/about/overview/budget/budget12/summary/edlite-section2a.html#fe>
- 16 C. Weller and L. Reidenbach, "The Case for Strategic Export Promotion," American Progress, Feb 2011, available: http://www.americanprogress.org/issues/2011/02/pdf/high_tech_trade.pdf
- 17 "Economics: Innovation central to boosting growth and jobs," Organisation for Economic Co-operation and Development, May 27, 2010, available at http://www.oecd.org/document/36/0,3343,en_2649_37417_45324068_1_1_1_100.html
- 18 Arti Rai, Stuart Graham, and Mark Doms, "Patent reform: unleashing Innovation, Promoting Economic Growth and Producing high-Paying Jobs" (Washington: Department of Commerce, 2010), available at http://2001-2009.commerce.gov/s/groups/public/@doc/@os/@opa/documents/content/prod01_009147.pdf
- 19 FY 2011 Budget Summary and Performance Plan, U.S. Department of Agriculture, available at <http://www.obpa.usda.gov/budsum/FY11budsum.pdf>
- 20 G. Jones, Community Planning and Development, 2010 Proposed General Government Operating Budget, (2009), available at <http://www.muni.org/Departments/budget/operatingBudget/2010%20Ppsd%20GGOB/Community%20Planning%20and%20Development.pdf>
- 21 Defense Budget, available at http://comptroller.defense.gov/defbudget/fy2012/budget_justification/pdfs/01_Operation_and_Maintenance/O_M_VOL_1_PARTS/O_M_VOL_1_BASE_PARTS/OEA_OP-5_FY_2012.pdf
- 22 J. Erickson and S. Pool, "Accelerating Regional Innovation and Job Creation," American Progress, November 2011, available: http://www.americanprogress.org/issues/2011/11/jobs_accelerator.html
- 23 Integration of Workforce and Regional Economic Development, U.S. Department of Labor, available at http://www.doleta.gov/reports/opdr/opdr_projects.cfm#CATEG1
- 24 Community-Based Job Training Grants, U.S. Department of Labor, available at <http://www.doleta.gov/business/Community-Based-JobTrainingGrants.cfm>
- 25 "About WIRED," U.S. Department of Labor, available at <http://www.doleta.gov/wired/about/>
- 26 Program & Funding Opportunities. EDA, available at http://www.eda.gov/InvestmentsGrants/JobsAndInnovationChallengeFAQ_GI
- 27 "What is Trade Adjustment Assistance?," Employment and Training Administration, available at <http://www.doleta.gov/tradeact/factsheet.cfm>
- 28 Ibid.
- 29 The Memorandum can be accessed online here: <http://www.whitehouse.gov/the-press-office/2011/03/11/presidential-memorandum-government-reform-competitiveness-and-innovation>
- 30 FY 2011 Congressional Budget Justification and FY 2009 Annual Performance Report, U.S. Small Business Administration, available at http://www.sba.gov/sites/default/files/Congressional_Budget_Justification.pdf; "Research Grants for Small Businesses," Small Business Administration, available at <http://www.sba.gov/content/research-grants-small-businesses#each>
- 31 Technology Innovation Program Homepage, National Institute of Standards and Technology, available at <http://www.nist.gov/tip/>
- 32 "Find Grant Opportunities," Grants.gov, available at <http://www07.grants.gov/search/search.do>

- 33 FY 2011 Congressional Budget Justification and FY 2009 Annual Performance Report, U.S. Small Business Administration, available at http://www.sba.gov/sites/default/files/Congressional_Budget_Justification.pdf; "Research Grants for Small Businesses," Small Business Administration, available at <http://www.sba.gov/content/research-grants-small-businesses#each>
- 34 Ibid.
- 35 General Research and Technology Activity, Catalog of Federal Domestic Assistance, available at <https://www.cfda.gov/?s=program&mode=form&tab=step1&id=591557f7744a9f5445353d133094cb92>
- 36 FY 2012 Budget Request to Congress, National Science Foundation, available at http://www.nsf.gov/about/budget/fy2012/pdf/fy2012_rollup.pdf
- 37 8(a) Business Development. SBA, available at <http://www.sba.gov/content/8a-business-development-0#provides%20assistance>; Congressional Budget Justification, SBA.
- 38 Budget Summary, USDA.
- 39 Notice of Availability of Funds and Solicitation for Grant Applications for H-1B Technical Skills Training Grants, Employment and Training Administration, Department of Labor, available at http://www.doleta.gov/grants/pdf/SGA-DFA-PY-10-13_Final_H-1B_SGA.pdf
- 40 H-1B Technical Skills Training Grants, Employment and Training Administration, U.S. Department of Labor, available at http://www.doleta.gov/business/H1B_Tech_Skills.cfm
- 41 Research and Evaluation Projects, Employment and Training Administration, U.S. Department of Labor, available at http://www.doleta.gov/reports/opdr/opdr_projects.cfm; Budget Summary, FY 2011 Budget in Brief, U.S. Department of Labor, available at <http://www.dol.gov/dol/budget/2011/bib.htm#summary>
- 42 "What's New in Workforce Investment?," Employment and Training Administration, available at http://www.doleta.gov/usworkforce/whatsnew/eta_default.cfm?id=2690
- 43 The Budget for Fiscal Year 2011, Executive Office of the President (2010), available at <http://www.gpoaccess.gov/usbudget/fy11/pdf/Appendix/eop.pdf>
- 44 International Trade Administration: Strategic Plan FY 2007-FY 2012, U.S. Department of Commerce (2007), available at http://trade.gov/PDFs/ITA_stratplan2007.pdf; Summary of Budget Authority, U.S. Department of Commerce (2010), available at <http://www.osec.doc.gov/bmi/budget/11BiB/BA-OUTLAYS.pdf>
- 45 Market Access and Compliance. International Trade Administration, available at <http://www.trade.gov/mac/>
- 46 Import Administration. International Trade Administration, available at <http://www.trade.gov/ia/>
- 47 U.S. Commercial Service. International Trade Administration, available at <http://trade.gov/cs>
- 48 Manufacturing and Services. International Trade Administration, available at <http://trade.gov/mas>
- 49 Trade Policy and Programs. U.S. Department of State, available at <http://www.state.gov/e/eeb/tpp/>
- 50 Bilateral Trade Affairs. U.S. Department of State, available at <http://www.state.gov/e/eeb/tpp/bta>
- 51 Intellectual Property Enforcement. U.S. Department of State, available at <http://www.state.gov/e/eeb/tpp/ipe>
- 52 Multilateral Trade Affairs. U.S. Department of State, available at <http://www.state.gov/e/eeb/tpp/mta/>
- 53 "Doing Business in International Markets," U.S. Department of State, available at <http://www.state.gov/e/eeb/cba/>
- 54 Office of Economic Policy Analysis and Public Diplomacy. U.S. Department of State, available at <http://www.state.gov/e/eeb/eppd/index.htm>
- 55 "About the Bureau of Industry and Security," U.S. Department of Commerce, available at <http://www.bis.doc.gov/about/index.htm>
- 56 Summary of Appropriations, U.S. Economic Development Administration, available at <http://www.osec.doc.gov/bmi/budget/FY12BiB/EDA.pdf>
- 57 "Mission," Export-Import Bank of the United States, available at <http://www.exim.gov/about/mission.cfm>
- 58 S. Ilias, "Export-Import Bank: Background and Legislative Issues" (Congressional Research Service, February 9, 2011), available at http://assets.opencrs.com/rpts/98-568_20110209.pdf
- 59 Congressional Budget Justification of the U.S. Trade and Development Agency: Fiscal Year 2011, available at http://www.ustda.gov/otherinfo/FY2011_CongressionalBudgetJustification.pdf
- 60 Budget Request: Fiscal Year 2009, Overseas Private Investment Corporation (February 2008), available at http://www.opic.gov/sites/default/files/docs/fy2009_opic_congressional_budget_justification.pdf
- 61 "Executive Order-National Export Initiative," The White House, March 11, 2010, available at <http://www.whitehouse.gov/the-press-office/executive-order-national-export-initiative>
- 62 National Institute of Standards and Technology Appropriations Summary, available at http://www.nist.gov/public_affairs/releases/approps-summary2011.cfm
- 63 "About the Manufacturing Partnership," Hollings Manufacturing Extension Partnership, available at <http://www.nist.gov/mep/about.cfm>
- 64 Fiscal Year 2012 Budget Request, National Telecommunications and Information Administration, available at <http://www.ntia.doc.gov/budget/budget.htm>
- 65 Summary of Appropriations, National Technical Information Service, available at <http://www.osec.doc.gov/bmi/budget/FY12BiB/NTIS.pdf>
- 66 Summary of Appropriations. U.S. Patent and Trademark Office, available at <http://www.osec.doc.gov/bmi/budget/FY12BiB/USPTO.pdf>
- 67 A. Rai, "Patent Reform and the Progress of Innovation" (Washington: Science Progress, March 15, 2011), available at <http://www.scienceprogress.org/2011/03/patent-reform-and-the-progress-of-innovation/>
- 68 Summary of Appropriations, U.S. Economic Development Administration, available at <http://www.osec.doc.gov/bmi/budget/FY12BiB/EDA.pdf>
- 69 EDA programs, available at <http://www.eda.gov/InvestmentsGrants/Programs.xml>
- 70 Summary of Appropriations, U.S. Economic Development Administration, available at <http://www.osec.doc.gov/bmi/budget/FY12BiB/EDA.pdf>
- 71 Ibid.
- 72 Ibid.
- 73 Ibid.
- 74 Ibid.
- 75 Ibid.
- 76 Ibid.

- 77 Ibid.
- 78 Minority Business Development Agency, "President Obama's 2012 Budget Supports Jobs and Growth within the Minority Business Community," U.S. Department of Commerce, February 16, 2011, available at <http://www.mbda.gov/pressroom/press-releases/president-obama-s-2012-budget-supports-jobs-and-growth-within-minority-business-community>
- 79 Summary of Appropriations, Minority Business Development Agency, available at <http://www.osec.doc.gov/bmi/budget/FY-12BIB/MBDA.pdf>
- 80 "About RD," U.S. Department of Agriculture, available at <http://www.rurdev.usda.gov/AboutRD.html>; FY 2011 Budget Summary and Annual Performance Plan, U.S. Department of Agriculture, available at <http://www.obpa.usda.gov/budsum/FY11budsum.pdf>
- 81 Ibid.
- 82 Rural Business-Cooperative Service. (2010). "2011 Explanatory Notes," USDA, available at <http://www.obpa.usda.gov/28rbs2011notes.pdf>
- 83 FY 2011 Budget Summary, USDA; Business and Industry Guaranteed Loans. USDA, available at http://www.rurdev.usda.gov/rbs/buspg/b&i_gar.htm
- 84 FY 2011 Budget Summary, USDA
- 85 White House Rural Council. (2011). "Jobs and Economic Security for Rural America," The White House, August 2011, available at http://www.whitehouse.gov/sites/default/files/jobs_economic_security_rural_america.pdf
- 86 Jones, 2009.
- 87 CPD Program and Initiative Index, U.S. Department of Housing and Urban Development, available at http://www.hud.gov/offices/cpd/about/cpd_programs.cfm
- 88 Office of Economic Adjustment. Department of Defense, available at <http://www.oea.gov/>; Defense Budget.
- 89 http://140.185.104.240/index.php?option=com_content&view=article&id=60&Itemid=55.
- 90 Defense Industry Adjustment. Department of Defense, available at http://140.185.104.240/index.php?option=com_content&view=article&id=58&Itemid=52
- 91 FY 2012 Congressional Budget Justification Employment and Training Administration, U.S. Department of Labor, available at <http://www.dol.gov/dol/budget/2012/PDF/CBJ-2012-V1-03.pdf>
- 92 Brief Descriptions of Program Line Items in ETA Budget, U.S. Department of Labor, available at <http://www.doleta.gov/budget/etapgms.cfm#pdr>
- 93 Mission Statement, Office of Workforce Investment, U.S. Department of Labor, available at <http://www.doleta.gov/etainfo/wrksys/WIMission.cfm>
- 94 FY 2012 Budget Justification, U.S. Department of Labor; Adult Services, U.S. Department of Labor, available at http://www.doleta.gov/programs/ETA_default.cfm?#Workforce; Workforce Investment Act—Adults and Dislocated Workers Program, U.S. Department of Labor, available at http://www.doleta.gov/programs/general_info.cfm; Youth Services, U.S. Department of Labor, available at http://www.doleta.gov/Youth_services/about_oys.cfm
- 95 CareerOneStop, available at <http://www.careeronestop.org/>
- 96 Regional Offices, U.S. Department of Labor.
- 97 Office of Policy Development and Research, U.S. Department of Labor, available at <http://www.doleta.gov/etainfo/opder/>
- 98 "What is Trade Adjustment Assistance?," Employment and Training Administration, available at <http://www.doleta.gov/tradeact/factsheet.cfm>
- 99 Ibid.
- 100 Program Details, U.S. Department of Labor, available at <http://www.doleta.gov/taaccct/>
- 101 Job Corps, available at <http://www.jobcorps.gov/Home.aspx>
- 102 Office of Apprenticeship, Employment and Training Administration, U.S. Department of Labor, available at <http://www.doleta.gov/oa/>; FY 2012 Budget Justification, U.S. Department of Labor
- 103 Registered Apprenticeship Regulations, Employment and Training Administration, U.S. Department of Labor, available at <http://www.doleta.gov/oa/regulations.cfm>
- 104 FY 2011 OPE Programs Budget Update, Office of Postsecondary Education, U.S. Department of Education, available at <http://www2.ed.gov/about/offices/list/ope/2011-program-budget.html>
- 105 Office of Postsecondary Education Homepage, U.S. Department of Education, available at <http://www2.ed.gov/about/offices/list/ope/index.html?src=oc>
- 106 Career and Technical Education, Office of Vocational and Adult Education, U.S. Department of Education, available at <http://www2.ed.gov/about/offices/list/ovae/pi/cte/index.html>
- 107 Carl D. Perkins Career and Technical Education Act of 2006, U.S. Department of Education, available at <http://www2.ed.gov/policy/sectech/leg/perkins/index.html>
- 108 Advanced Technological Education (ATE), National Science Foundation, available at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5464
- 109 Directorate for Education and Human Resources, National Science Foundation, available at http://www.nsf.gov/about/budget/fy2012/pdf/27_fy2012.pdf
- 110 Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP), National Science Foundation, available at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5488&org=DUE&from=home
- 111 Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES), National Science Foundation, available at <http://www.nsf.gov/pubs/2010/nsf10544/nsf10544.htm>
- 112 Math and Science Partnership (MSP), National Science Foundation, available at http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5756&org=DUE&from=home
- 113 Math and Science Partnership Network, available at <http://hub.mspnet.org/index.cfm>

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