



# Clusters and Competitiveness: A New Federal Role for Stimulating Regional Economies

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Regional industry clusters—geographic concentrations of interconnected firms and supporting organizations—represent a potent source of productivity at a moment of national vulnerability to global economic competition.

For that reason, the federal government should establish an **industry clusters program** that stimulates the collaborative interactions of firms and supporting organizations in regional economies to produce more commercial innovation and higher-wage employment

## America's Challenge

Due to rising global competition, the nation's capacity for generating stable, well-paying jobs for a large number of U.S. workers is increasingly at risk. In this environment, regional industry clusters represent a valuable source of needed innovation, knowledge transfer, and improved productivity. For that reason, the public sector around the world has launched numerous programs to catalyze growth-producing collaboration in key industry clusters. However, this nation's network of cluster initiatives remains thin and uneven. As a result, many U.S. industry clusters are not as competitive as they could be, to the detriment of the nation's capacity to sustain well-paying jobs.

## Limitations of Existing Federal Policy

The federal government has the reach and the resources to stimulate the growth of cluster initiatives and to address the various barriers that limit cluster development and growth. However, current federal programs do very little to support competitive regions in general and competitive clusters in particular. They have evolved in a wildly ad hoc, idiosyncratic, and uncoordinated fashion. Further, the few

federal programs that do focus on cluster and network development remain inadequate to the task.

## A New Federal Approach

The federal government should move to promote cluster development and growth nationwide. In this, the federal government's approach should be flexible, "bottom-up," and collaboration-oriented, rather than prescriptive, "top-down," or input-focused. Consistent with this, the federal government should boost the nation's competitiveness by catalyzing increased cluster activity in U.S. regions through a two-part federal clusters program:

- **Create an information center** to map the geography of clusters, maintain a registry of cluster initiatives and programs, and conduct research on cluster dynamics and cluster initiative and initiative program impacts and best practices
- **Establish a grants program** to support regional and state cluster initiative programs nationwide that would direct financial and other assistance to individual cluster initiatives

## America's Challenge

**Regional industry clusters—geographic concentrations of interconnected firms and supporting organizations—represent a powerful source of productivity** and quality jobs at a moment of economic challenge. However, the nation's network of state and regional cluster initiatives is thin and uneven in terms of geographic and industry coverage. Consequently, the nation's ability to stay competitive and provide well-paying jobs is diminished.

**Since World War II, the nation's economic dominance has eroded across an array of industries and business functions.** Through the middle of the last century, the United States built world-leading industries that provided well-paying jobs and economic prosperity to the nation. This dominance flowed from the nation's extraordinary aptitude for innovation as well as a relative lack of international competition. However, while the nation today retains its preeminence in many realms, the dramatic expansion of economic capabilities abroad has seen the U.S. cede leadership, market share, and jobs in an ever-growing, wide-ranging list of industries and business functions—from the labor-intensive and low-skilled to those based on high skills and focused on advanced technology development.

**Consequently, the nation's capability for generating and sustaining stable, sufficiently well-paying jobs for a large number of U.S. workers is increasingly at risk.** Across numerous industries, U.S.-based operations have not been fully effective in responding to competitive challenges from abroad. Many struggle to develop and adopt the technological innovations (in products and production processes) and institutional innovations (new ways of organizing firms and their relationships with customers, suppliers, and collaborators) that sustain economic activity and high-skill, high value-added jobs. As a result, too many workers are losing decent jobs and too many regions are struggling economically.

### Definitions

**Regional industry cluster:** a geographic concentration of interconnected businesses, suppliers, service providers, and associated institutions in a particular field

**Cluster initiative:** a formally organized effort to promote cluster growth and competitiveness through collaborative activities among cluster participants

**Cluster initiative program:** an effort to create and sustain a series of cluster initiatives

**In this environment, regional industry clusters provide a valuable mechanism for boosting national and regional competitiveness.** Clusters promote product and process innovation; facilitate technology transfer and other knowledge sharing; improve access to specialized labor, materials, and equipment; and lower operating costs. They enhance innovation and knowledge sharing by providing thick networks of formal and informal relationships across organizations. What is more, robust, concentrated demand within the cluster or innovation hub pulls in skilled workers and a wide variety of specialized suppliers and service providers, in turn furthering cluster growth and improved productivity.

Studies have demonstrated the positive effect of clusters on economic performance. Strong positive correlations exist between cluster strength and patenting rates, entrepreneurship, cluster wages, regional wages, and gross domestic product per capita.

### Strong clusters lead to higher regional wages, particularly in the traded sector

2004	Metro	Percent of traded employment in "strong" traded clusters	Regional employment	Average regional wage	Average regional traded wage	Ratio of traded wages to average wages
<b>Top 10</b>						
	Trenton, NJ	82.7%	185,383	\$46,390	\$60,677	1.31
	Palm Bay, FL	80.8%	174,830	\$33,571	\$44,988	1.34
	San Jose, CA	79.7%	861,940	\$68,559	\$96,602	1.41
	Durham, NC	78.4%	221,362	\$43,634	\$73,757	1.69
	New York, NY-NJ-PA	76.7%	7,584,299	\$52,377	\$80,068	1.53
	Boston, MA-NH	73.6%	2,259,198	\$49,171	\$70,458	1.43
	Las Vegas, NV	73.4%	739,434	\$33,884	\$34,394	1.02
	Harrisburg, PA	73.3%	273,181	\$34,054	\$37,836	1.11
	Bridgeport, CT	72.6%	450,517	\$62,420	\$109,384	1.75
	Dayton, OH	69.4%	357,719	\$33,742	\$45,069	1.34
	<b>Top 10 weighted average</b>			<b>\$50,817</b>	<b>\$75,246</b>	<b>1.48</b>
<b>Bottom 10</b>						
	Knoxville, TN	30.8%	291,046	\$32,873	\$41,763	1.27
	Allentown, PA-NJ	29.5%	289,149	\$36,723	\$39,216	1.07
	Tulsa, OK	29.3%	357,231	\$33,815	\$45,686	1.35
	Sarasota, FL	29.0%	223,504	\$30,570	\$37,890	1.24
	Richmond, VA	28.3%	508,944	\$37,471	\$48,919	1.31
	Columbus, OH	26.0%	786,585	\$36,426	\$47,608	1.31
	Albuquerque, NM	25.2%	287,991	\$31,490	\$40,182	1.28
	St. Louis, MO-IL	11.9%	1,250,722	\$35,999	\$49,276	1.37
	Oklahoma City, OK	10.5%	437,476	\$29,995	\$39,729	1.32
	Little Rock, AR	6.3%	286,046	\$31,787	\$43,808	1.38
	<b>Bottom 10 weighted average</b>			<b>\$34,571</b>	<b>\$45,297</b>	<b>1.31</b>

Note: Metros are top 10 and bottom 10 of 100 largest metro areas, ranked by percent of traded employment in strong clusters. A "strong cluster" is one with a cluster employment location quotient in the top quintile of metros with employment in the cluster type.

Source: Michael Porter, Institute for Strategy and Competitiveness, Harvard Business School

## City-regions, states, and nations are all launching cluster initiatives

**Louisville, KY:** Greater Louisville Inc., the region's development organization, has nine active industry cluster groups.

**Fresno, CA:** The Regional Jobs Initiative has fostered ten cluster initiatives involving businesses, local government, and educational institutions.

**Maine:** The Maine Technology Institute administers a state-funded cluster grant program, funding initiatives in boatbuilding, composite technology, food, forest products, and sustainable energy.

**Oregon:** The Oregon Clusters Network facilitates industry cluster efforts in food, tourism and hospitality, metals, aerospace and aviation, creative services and arts, financial services, defense and security, renewable energy, software, telecommunications, and green development.

**South Carolina:** New Carolina, a public-private development effort, hosts 15 cluster initiatives. In addition to three full-time staff members, New Carolina retains five "change agents" around the state to organize cluster programs in their home regions.

**Canada:** Since 2000, the National Research Council has sponsored the Technology Cluster Initiatives to foster the development of innovation-driven clusters in regions across Canada.

**South Korea:** The Innovative Cluster Cities program aids large industrial complexes in selected regional centers to convert from manufacturing centers to innovation systems.

**Sweden:** The Regional Cluster program, sponsored by Nutek, the Swedish Agency for Economic and Regional Growth, supports international competitiveness with market-focused assistance.

*Source: Program websites and OECD*

**Not surprisingly, the significant economic benefits of clusters have stimulated a flurry of public-sector efforts around the world and at home to catalyze the creation of cluster initiatives.**

Experience shows that industry-led cluster initiatives—efforts to facilitate inter-organizational collaboration—can play a valuable role in promoting cluster competitiveness and growth. Because cluster actors often lack the market incentives, knowledge, trust, and resources to form initiatives on their own, numerous nations, provinces/states, and regional organizations have created distinct programs to seed such efforts. Reflective of the field's newness, the wide variety of current cluster initiative programs exhibits great experimentation and displays numerous approaches, strategies, and levels of funding.

**Unfortunately, the nation's network of cluster initiatives remains thin and uneven.**

**However, this nation's network of cluster initiatives unfortunately remains thin and uneven in terms of geographic and industry coverage and organizational capacity.** In this respect, the promise of clusters and other innovation networks to promote productivity growth is tantalizing but far from realized. While it is in the nation's interest for there to be well-designed and well-implemented cluster initiatives in all regions, state and regional development organizations are unable to build this network by themselves. Many are not motivated or knowledgeable enough to do so. Often, they lack information on the economic impacts of well-run cluster initiatives and cluster initiative programs; effective practices in the design and operation of such initiatives and programs; and access to adequate financial resources to support cluster-building activities.

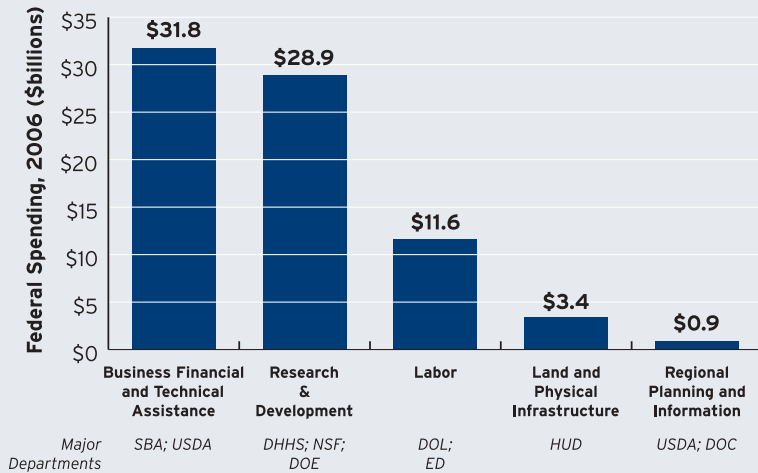
As a consequence, many U.S. industry clusters are not as competitive as they could be, to the detriment of the nation's economic strength and its capacity to generate and sustain well-paying jobs.

## Limitations of Existing Federal Policy

**The federal government has the reach and the resources** to seize the opportunities offered by cluster initiatives and to address the various barriers that stymie cluster development and growth.

**However, current federal programs do very little to support competitive regions in general and competitive clusters in particular.** For the most part, federal economic policy is a combination of the macroeconomic (monetary and fiscal policy) and the microeconomic (business regulation, aid to individual businesses and workers). Washington, in this respect, lacks an appreciation of the importance of "middle" or "meso-" economic efforts aimed at regions. When federal programs have been aimed at regions they have been oriented almost entirely to lagging regions—ones with high unemployment

**Federal spending for regional economic development focuses on inputs, not collaboration**



Note: Federal spending numbers include loan guarantees as well as direct spending  
 Source: Brookings analysis of data from the Catalogue of Federal Domestic Assistance

or low per capita income or those suffering an “economic shock” of some sort. For that matter, national competitiveness has not been an issue until recently. Consequently, federal understanding of and interest in regional economic competitiveness, for the sake of each region and the nation as a whole, has been minimal. Finally, federal business economic development, workforce, and technology programs typically aim to provide a desirable level of economic inputs (like land, labor, or capital) and by design assume—incorrectly—that markets will take full advantage of them. In this calculation, the programs rarely reflect an appreciation of the importance of institutional collaboration and the unique dynamics of clusters.

***Whatever the theory behind these efforts, the overall federal development system has evolved in a wildly ad hoc, idiosyncratic, and uncoordinated fashion.***

As a result, the federal government spent \$76.7 billion in Fiscal Year 2006 across 14 different federal agencies and departments on 250 separate programs that affect regional economic development. These programs are devoted almost entirely to the key “factor endowments” of economic growth and to distressed regions and individual firms and workers. With 250 programs in play, coordination is understandably difficult. Typically, activities such as workforce development, R&D, and small business assistance fail to leverage each other because they operate in their own agency silos.

***For that matter, the few federal programs that support cluster and network development remain inadequate to the task.*** Their total cost (\$558 million) is less than one percent of the total federal spending flowing towards regional economic development. The most prominent of these, one that offers a sense of the possibilities but is too small and short-lived to do the necessary work on its own, is the Department of Labor’s Workforce Innovation in Regional Economic Development (WIRED) program. Created in 2005, WIRED combines industry and economic development activities with workforce training programs. Three waves of WIRED grants have been made across the country in 14 metropolitan areas and 25 larger regions. These grants are awarded in competitive processes that reward self-organized, market-driven initiatives; private sector leadership; fact-based strategies based on existing regional

advantages; collaboration across public, private, and nonprofit actors; and leveraged resources. Many WIRED projects have taken the form of cluster initiatives.

**In short, the federal government is fairly alone among the world's developed countries in its passive stance toward regional competitiveness and cluster development.**

## A New Federal Approach

**The federal government should play a central role** in promoting cluster development and growth nationwide. Given the nation's increasing vulnerabilities to global competition, the time is now for taking on this important role.

Such an effort should be radically different in design from traditional federal development programs. It should cover the nation, not just lagging areas. It should be "bottom-up," industry-driven, and encourage collaboration among key institutions. The initiative should bring to bear a diverse tool kit, flexibly applied. It should provide incentives to link, leverage, and align the multitude of existing federal programs that support regional economic development with these cluster initiatives. In contrast to many existing programs, it should not be prescriptive, focus entirely on inputs, or operate in a silo.

***Federal efforts that support cluster development are ad hoc in nature, insufficient in scope, uncoordinated, not strategic, and, in the case of WIRED, unlikely to extend long into the future.***

**Consistent with these principles, the nation should embark on a major effort to boost the nation's competitiveness by catalyzing increased cluster activity in U.S. regions through a two-part federal clusters program.** Along these lines the program would:

■ **Create an information center to track cluster activity and support effective cluster efforts.**

A highly valuable, low-cost federal role is providing knowledge and information for cluster actors around the nation. The Cluster Information Center (CLIC) would:

- *Provide a constantly updated, data-rich picture of the geography of cluster activity across the U.S. and the world.* Such a picture would inform, for instance, cluster initiative vision and strategy; cluster initiative program choices for investment and focus; and decision-making by businesses, state and local development agencies, and federal policymakers and program managers.
- *Maintain a publicly available registry of cluster initiatives and programs.* Cluster initiatives and programs would be given incentive to register in order to gain priority for certain federal programs and funding. (Incentive would be provided through cooperative arrangements with other

programs and/or through legislation.) The registry would be openly accessible and so would allow economic development organizations, industry associations, and cluster initiatives themselves to identify and explore promising approaches and models.

- *Support research and knowledge dissemination on cluster dynamics and cluster-initiative and initiative-program impacts and best practices, both in the U.S. and abroad.* The CLIC would seek to understand cluster types, trajectories, and success factors in various circumstances. It would develop technical assistance guides for cluster initiative and program development and operations.

**The CLUSTER fund would provide several types of grants to support the development of an effective network of cluster initiative programs.**

Through in-person conferences, teleconferences, webcasts, and other means, it would communicate new developments in cluster initiatives and programs around the nation.

Annual CLIC operating expenses are estimated to be about \$10 million.

- **Establish a grants program to support cluster initiative programs nationwide.** The CLUSTER fund (Competitive Leadership for the United States Through its Economic Regions) fund would provide several types of grants to support the development of an effective network of cluster initiative programs. Eligible grantees would include public purpose organizations representing economic regions, states, and multiple states. Awardees would agree to support cluster initiatives that have demonstrable economic potential; are industry-led; are inclusive (seeking any and all organizations that might find benefit from participation); encourage broad participation and collaboration; and involve key state and local government actors. Specifically, the CLUSTER fund would offer:

- *Grants for program feasibility studies, planning, and operations.* Program feasibility study and planning grants would be up to \$250,000, one-time only, no matching funds required. Annual grants of up to \$1 million would be made to new and early-stage cluster initiative programs to support cluster initiative planning studies, technical assistance, and start-up and operating activities. For new programs, matching funds on a one-to-one basis would be required; grants would be available to existing programs with demonstrated effectiveness at a higher level of match. Initiatives supported by each program must participate in the CLIC registry and research activities. All applicants that meet minimum requirements would be funded. To expedite matters, the application process would be on a rolling basis.
- *Grants to cluster initiative programs that in turn would support the activities of specific cluster initiatives in their area.* On a competitive and matching basis, grants of between \$1 million and \$15 million would be awarded to cluster-focused collaborative activities. Examples include, but are not limited to, cluster-focused efforts in training, R&D, technology adoption, marketing, and



business and workforce attraction. To encourage linkage and leverage with, and improved alignment of, existing federal, state, and local resources, a one-to-one match would be required. Grants would be awarded on the basis of a number of criteria, including probable impact on regional competitiveness; fit within an achievable economic development strategy; sponsoring organization capacity and commitment; degree of support and involvement from development and other public-purpose organizations; expected ability to access additional funds from local, state, and federal sources; and capacity to sustain activities once CLUSTER funds are expended. Regional diversity across the U.S. would be sought. Grantees could seek additional funds for new collaborative efforts.

***The proposed federal cluster program aims to augment regional economic competitiveness by harnessing the power of geographic proximity and inter-organizational collaboration.***

Funding for the CLUSTER program would be \$350 million annually.

The preferred home for the two-part program is the proposed National Innovation Foundation (NIF) described in a companion Blueprint paper. (see “Boosting Productivity, Innovation, and Growth through a National Innovation Foundation” in this series.) If NIF is not created, the preference among existing agencies is the Economic Development Administration (EDA) in the Department of Commerce. EDA supports cluster efforts through its existing grants program and has been seeking to transform its traditional approach to economic development to one that is more open and flexible. The host agency could contract out the operation of CLIC to an external organization.

In sum, the proposed federal clusters program aims to stimulate regional economic competitiveness nationwide through harnessing the power of geographic proximity and inter-organizational relationships for innovation and productivity. In so doing, it radically redefines the model for federal support of economic development. Firms, regions, and states are actively exploring clusters as a valuable means for improved economic performance. A strategically designed, adequately funded federal clusters program would provide the information and financial resources that public and private actors at the state and local level need to sustain clusters that achieve their potential to compete, provide well-paying jobs, and enhance regional and national economic performance.

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## **For More Information**

The full-length paper from which this brief is drawn is available at  
**[www.blueprintprosperity.org](http://www.blueprintprosperity.org)**

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