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Welcome to EDA America



As the pace of change continues to accelerate in the 21st century worldwide marketplace, economic development professionals must constantly be looking for “what’s next” in terms

of strategies to build regional economic competitiveness. In many cases, the answer to the “what’s next” question can be found in approaches that nurture the development of industry clusters.

Industry clusters facilitate innovation and creativity, promote knowledge sharing, increase access to skilled labor and materials, and lower operating costs for businesses. In fact, recent reports from the Institution (excerpt featured in this issue) conclude that regional industry clusters “represent a powerful source of productivity and quality jobs at a moment of economic challenge.”

Consequently, EDA has placed an emphasis on investing in cluster-based economic development initiatives in regions such as Stockton, California; Johnstown,

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Clusters and Competitiveness

This article is an excerpt from the Brookings Institution report “Clusters and Competitiveness: A New Federal Role for Stimulating Regional Economies.”

The full report with complete references and footnotes can be found at:

http://www.brookings.edu/reports/2008/04_competitiveness_mills.aspx

by Karen Mills, Elisabeth Reynolds and Andrew Reamer

Introduction

In regions and states across the U.S., vigorous efforts are underway to attain and sustain a desirable level of economic vitality in the face of the ever-increasing competitiveness of other nations. Cluster-based economic development is one approach being embraced by state and local leaders to boost regional productivity and competitiveness.

A **regional industry cluster** is a geographic concentration of interconnected businesses, suppliers, service providers, and associated institutions in a particular field. Formally organized **cluster initiatives** can help catalyze cluster growth and competitiveness by promoting collaboration among cluster participants. The ability of cluster initiatives to help overcome financial, cultural or institutional impediments to intra-cluster cooperation has prompted several regional, state and federal agencies to create **cluster initiative programs**, and efforts to seed initiatives across a series of clusters.

Clusters Reinvigorate Regional Competitiveness

The nation’s historical economic dominance flowed from an extraordinary aptitude for innovation as well as a relative lack of international competition. In the decades following World War II, the United States built world-leading industries that provided well-paying jobs and economic prosperity to the nation. Other countries could not match the economic prowess of the U.S. due to a combination of insufficient financial, human, and physical capital and economic and social systems that did not value creativity and entrepreneurship.

While the nation still retains its pre-eminence in many realms, the dramatic expansion of economic capabilities abroad challenges U.S. dominance. A wide-range of business functions have been affected including labor-intensive, lower-skill activities such as manufacturing of apparel and electronic parts;

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New York; Huntingburg, Indiana; North Little Rock, Arkansas; and many others. These clusters are shaping regional economies, creating jobs, spawning innovation and driving competition in worldwide markets.

“Industry clusters facilitate innovation and creativity, promote knowledge sharing, increase access to skilled labor and materials, and lower operating costs for businesses.”

This issue of *EDA America* highlights two state-supported cluster programs and examines the characteristics of successful cluster initiatives. Our case studies – Maine and Utah – are two very different states in terms of size, demographics and regional assets. Both, however, are achieving success in 21st century economic development through cluster-based approaches.

I hope you find these articles useful as you continue to build new partnerships and new initiatives to fuel your regional economies.

Sincerely,



Benjamin Erulkar
Deputy Assistant Secretary for
Economic Development and Chief
Operating Officer



EDA America is a quarterly publication brought to you as a benefit of a partnership among the Economic Development Administration (EDA), DTI Associates, and Anthology Communications. The partnership is designed to provide information about economic development practices and programs to economic development practitioners who serve distressed communities throughout the United States. It also provides telecasts and a monthly e-newsletter, *EDA Update*. For more information, visit the EDA Web site at www.eda.gov.

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and capital-intensive, higher-skill industries such as auto and steel and research and development activities in computers and consumer products. Many U.S. based operations have struggled 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 would sustain economic activity and create high-skill, high value-added jobs. Looking ahead, 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.

In this environment, regional industry clusters provide a valuable mechanism for boosting regional – and thus – national competitiveness. Defined by relationships rather than a particular product or function, clusters include organizations across multiple industrial classifications. Participants in an industry cluster include:

- organizations providing similar and related goods or services

- specialized suppliers of goods, services, and financial capital (backward linkages)
- distributors and local customers (forward linkages)
- companies with complementary products (lateral linkages)
- companies employing related skills or technologies or common inputs (lateral linkages)
- related research, education, and training institutions such as universities, community colleges, and workforce training programs
- cluster support organizations such as trade and professional associations, business councils, and standards setting organizations

Firms find that the geographic concentration of similar, related, complementary, and supporting organizations offers a wide-array of benefits. Clusters promote knowledge sharing (“spillovers”) and innovations in product development and technical and business processes by providing thick networks of formal and, informal

“Centuries of evidence indicate that the geographic clustering of organizations in a sector significantly facilitates innovation and creativity, productivity, access to essential key inputs such as skilled labor and materials, and improved operating costs.”

relationships across organizations. Consequently, companies derive substantial benefits from participation in a cluster’s “social structure of innovation.”

Additionally, clusters lower operating costs by enhancing access to specialized labor, materials, and equipment. Highly concentrated markets attract skilled workers by offering job mobility and

specialized suppliers and service providers by providing substantial business opportunities in close proximity. Also, concentrated markets tend to provide firms with various cost advantages.

Dynamic clusters also offer market opportunities and conditions – culture, social networks, mobility, access to capital – that encourage entrepreneurship and new business development.

The presence and strength of industry clusters have direct effects on economic performance. Numerous studies have demonstrated a positive correlation between cluster strength and patenting rates (a measure of the innovation process), gross domestic product per capita, and wage levels.

But as innovation progresses, existing clusters are becoming increasingly vulnerable due to three related influences. Since the mid-20th century, transportation and communications innovations have allowed manufacturers to scatter facilities around the nation and the world to

be closer to new markets and to take advantage of lower wage costs. More recent information technology innovations have allowed the geographic disaggregation of functions that traditionally had been co-located in a single cluster. Firms now have the freedom to place headquarters, R&D, manufacturing, marketing and sales, and distribution and logistics in disparate locations in light of the particular competitive requirements (e.g., skills, costs, access to markets) of each function. As radically new products and services disrupt existing markets, new clusters that produce them can do likewise.

Given that the U.S. economy and its regions continue to face economic transition, regional leaders across the nation are working to sustain a portfolio of competitive clusters that provide jobs. For them, cluster initiatives are mechanisms to enhance the competitiveness of existing clusters while taking advantage of opportunities to develop new ones.

Developing Maine’s Boat Building Cluster

A delegation of boat builders from coastal Maine headed to Shanghai for the China International Boat Show in search of new markets for their products. Treated by the national government as honored guests, the Maine delegation met with numerous potential buyers and visited the sites of planned marinas for hundreds of luxury boats. In China, Monaco, and other far-flung places, Maine’s boat building industry is aggressively pursuing markets for a diverse, highly-regarded product line that includes racing yachts, pleasure craft, workboats, and military vessels. Maine’s boat builders are competing worldwide by being at the cutting edge of innovation – taking a 400-year coastal heritage of skilled craftsmanship to a new level through incorporating advanced composite technologies.

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Maine's assertive venture into international competition is not a sudden matter of good fortune, but the culmination of a series of deliberate steps by Maine businesses and the state and federal governments. In the 1990s, a series of state and federal investments led to the creation of the University of Maine's Advanced Engineered Wood Composites (AEWC) Center, with particular expertise in the development of wood-based composites for marine uses, including boat hulls. In 2005, recognizing that the future of the state's industry rests on its ability to harness innovation to compete globally, Maine's boat builders, concentrated in an arc along the Maine coast, organized Maine Built Boats, Inc. (MBB) to develop and sustain the state's place as "a worldwide leader in boat building quality, technology, and craftsmanship." Soon after, the State of Maine created the North Star Alliance – bringing together MBB, the AEWC Center, state marine and composites trade associations, and economic development, workforce, training and investment organizations for the purpose of advancing boat building innovation, workforce training, and market development. By April 2006, the North Star Alliance received a \$15 million matching grant from the U.S. Department of Labor (DOL) Employment and Training Administration (ETA) to implement its plans, allowing, among other efforts, the trip to China.

The Maine story illustrates several concepts related to cluster-based regional economic development. First,



the geographic concentration in Maine of an array of public and private organizations involved in boat building exemplifies an *industry cluster* – an agglomeration of interconnected firms and supporting organizations that all take part in a particular sector. Second, Maine's sponsorship of the North Star Alliance reflects public sector support for *cluster initiatives*, formally organized collaborative efforts to facilitate cluster competitiveness and growth. And third, ETA's Workforce Innovation in Regional Economic Development (WIRED) program, which grant-funded the North Star Alliance, is an example of a *cluster initiative program* – an effort to create and sustain a series of cluster initiatives. ■

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Cluster Initiatives Stimulate Cluster Competitiveness and Growth

Cluster initiatives are formally organized to spur collaborative activities among cluster participants. Examples of such efforts include facilitating market development through joint market assessment and brand-building; encouraging networking within clusters, regions, and clusters in other locations; promoting collaborative innovation; aiding the innovation diffusion and adoption of

creative products and practices; sponsoring education and training activities; and representing cluster interests before external private and government entities. Through such activities, cluster initiatives can effectively promote cluster growth and competitiveness.

Research indicates that the number of cluster initiatives has grown substantially around the world in a short period of time. In 2003, the Global Cluster Initiative Survey (GCIS) identified over 500 cluster initiatives in Europe, North America, Australia, and New Zealand. More than 70 percent of these had been created

during the previous four years, a number that likely has increased significantly since 2003. Today, the U.S. has several hundred distinct cluster initiatives.

Additionally, The Cluster Initiative Greenbook, the worldwide survey of cluster initiatives, indicates that the most successful ones share similar characteristics:

- being industry-led
- involving supportive state and local government decision makers
- seeking any and all organizations that might find benefit from participation,

“Dynamic clusters also offer market opportunities and conditions—culture, social networks, mobility, access to capital—that encourage entrepreneurship and new business development.”

including startups, firms not locally-owned, and competing firms

- creating consensus regarding vision and roadmap (mission, objectives, outreach)
- encouraging broad member participation and collaboration among all types of participants in implementing the roadmap
- being well-funded initially and self-sustaining over the long-term
- linking with relevant external efforts, including regional economic development partnerships and cluster initiatives in other locations

Despite the numerous benefits of cluster initiatives many initiatives are never realized. While some cluster initiatives may emerge as a natural, firm-led outgrowth of cluster development to further enhance cluster competitiveness and growth, others are foiled by a series of barriers to the efficient working of markets (what economists call “market failures”).

For example, “public good” and “free rider” problems drive individual firms to under-invest in cluster activities. Because all firms in the cluster benefit regardless of who organizes the initiative (“public good”), many are content to sit back and wait for others to take the lead (be a “free rider”). Furthermore, some firms have concerns about collaborating with the

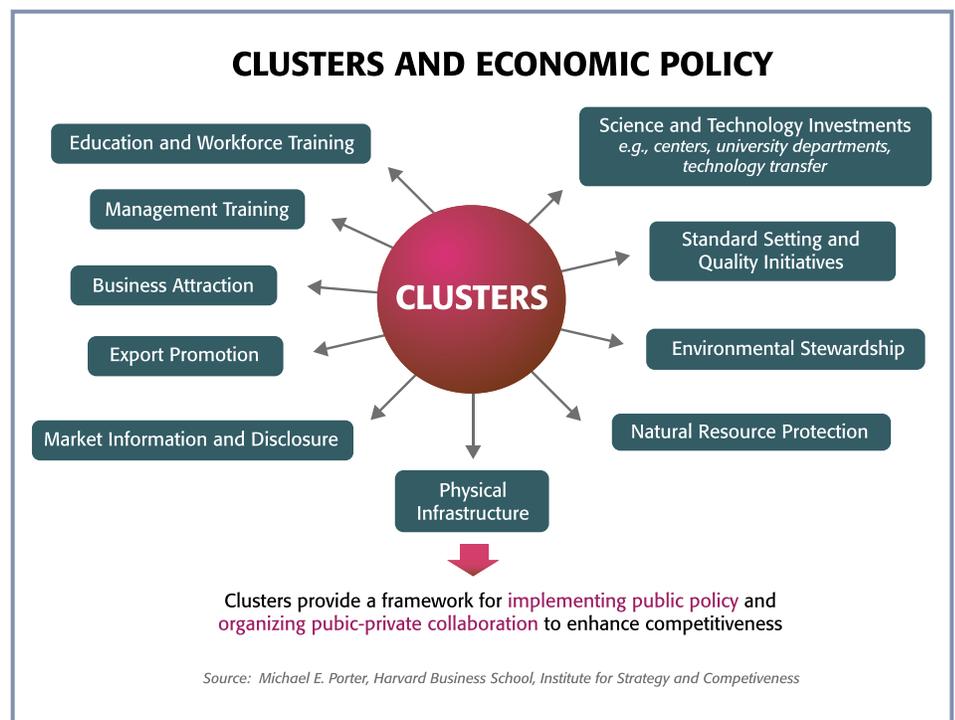
competition. And even if the will to organize a cluster initiative is present, it may not get off the ground because would-be organizers lack knowledge about the full array of organizations in the cluster, relationships or standing with key organizations (i.e., lack the power to convene), financial resources to organize, or are uncertain about how organizing should best proceed. Cluster initiative programs can help get cluster initiatives up and running. The significant economic benefits of clusters have stimulated a flurry of public sector efforts at home and abroad aimed at creating cluster initiatives. Numerous nations, provinces/states, and regional organizations are taking an increasingly active role in seeding such initiatives through distinct programs, thereby overcoming the lack of incentives and the presence of barriers that prevent cluster initiatives from forming on their own.

Twenty-six of 31 European Union countries have cluster initiative programs in place, as do Japan and Korea. Closer to home, cluster initiative programs exist in a small number of states, including Con-

necticut, Oregon, Maine, North Dakota, South Carolina, and Washington. Existing U.S. cluster initiative programs differ significantly from international programs in a variety of ways, including: level of funding and allocated human resources; type of support (e.g., cluster data analysis, cluster facilitators, technical assistance, grants); process of cluster selection; type of sponsor organization; and a one-time versus an ongoing timeframe.

A review of existing cluster initiative programs also shows that national efforts play roles that are different from and complementary to state, provincial, and regional ones. Sub-national programs are particularly good at providing leadership in bringing firms together; helping firms appreciate the benefits of collective action; bringing in key network resources such as universities, community colleges, and workforce boards; and providing technical assistance to get initiatives off the ground. The advantages of national programs include being able to provide nationwide coverage, seed initiatives

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across local political boundaries; and provide regional and local actors with detailed information, best practices knowledge, and financial resources of the necessary scale to make a difference.

Going Forward: Strengthening the U.S. Network of Cluster Initiatives

Even though a few states have created formal, on-going programs to seed and support a series of cluster initiatives, the nation's network of state and regional cluster initiatives is not as full and even in terms of geographic and industry coverage

as it could be. 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 authorities are unable to build this network on their own. Many actors at this level lack the motivation, information, knowledge and financial resources to do so.

One idea posed for seizing the opportunities offered by cluster initiatives and addressing the various barriers that stymie cluster development and growth is to boost the federal role in supporting cluster initiatives by launching a federal cluster information center and grant program. The proposed Cluster Information Center

would map the geography of clusters, maintain a registry of cluster initiatives and programs, and conduct research on cluster dynamics and best practices of cluster initiatives and programs. The CLUSTER (Competitive Leadership for the U.S. through its Economic Regions) fund would provide different types of grants to cluster initiative programs that, in turn, would support the activities of specific cluster initiatives in their area.

Strengthening the nation's network of cluster initiatives would bolster America's ability to stay competitive and its capacity to generate and sustain well-paying jobs. ■

Utah Leverages Genes for Success

Personalized medicine has become a hot-button issue for the medical community and a promising economic driver for Utah. It is, essentially the study of how genes affect the way that individuals respond to drugs. However, in Utah, this increased focus on personalized medicine has become an economic stimulator. Utah's population is ideally suited for such studies as it is unique in many aspects – its non-transient nature, deep roots in the Mormon Church with its clear focus on families, and strong connections in the community. These factors have led to a

population base that provides excellent multi-generational data and one that is relatively homogeneous.

These characteristics have also led to the development of the largest population database in the United States. The Utah Population Database (UPDB) hosts information on 6.4 million individuals linked through over eight million records. These records are pulled from the Utah Bureau of Vital Records, driver's license records, Utah and Idaho Cancer Registries and the Utah Family History Library.

Researchers utilize the UPDB to identify and study families that have higher than normal incidences of cancer or other diseases, to analyze patterns of genetic inheritance, and to identify specific genetic mutations.

The UPDB isn't the only regional asset that Utah draws upon. This rich database coupled with leading medical research institutions has led to a long history of life science breakthroughs including: the development of the world's first prosthetic arm (1973); the most successful artificial heart transplant (1982); the first breast cancer causing gene discovered (1994); world's first cloned equine (2003); and the first successful heart pump implant (2006).

So, what does all this mean to Utahans?

Currently, there are over 4,300 life sciences and information technology companies throughout Utah and according to the Utah Department of Workforce Services in 2006, about 26,800 jobs in life sciences alone.

Utah's Economic Industry Cluster Initiative, which is funded by the Gover-



The Utah Life Sciences Clusters is comprised of four emerging and mature sectors:

- *Cellular systems*
- *Medical Devices & Products*
- *Microbe biotechnology*
 - *Environmental & agriculture technology & remediation*
- *Personalized/predictive medicine*
 - *Genetics & biomarker development*
 - *Pharmaceutical research and clinical services*
 - *Neuroscience*

nor's Office of Economic Development (GOED), focuses on leveraging its unique regional assets in order to capitalize on its core strengths. The Initiative has identified seven cluster industries including the Utah Life Sciences Cluster. The UPDB lies at the center of Utah's Life Sciences Cluster – where the wealth of genetic information provides ample research opportunities in areas ranging from pharmaceuticals to biotechnology and biomedical sciences among others.

Utah's Life Sciences Cluster has other assets that contribute to its success including a wealth of partners in education, research & development, technology, training investment, workforce development as well as leadership from GOED. Leading Universities and higher education institutions such as the Utah State University, the University of Utah, the University of Southern Nevada (which recently expanded into Utah), the Utah College of Applied Technology, Brigham

Young University and the Salt Lake City Community College are all involved in the cluster and have made significant contributions in terms of research, technology transfer, innovation and education and training of the potential workforce.

Other organizations such as the Utah Science, Technology and Research Initiative (USTAR) and Utah's Technology Council (UTC) are integral to the cluster. USTAR combines public and private investments to make advances in innovation areas such as biotechnology. USTAR is working to recruit state of the art research teams and build research innovation centers throughout the state. The UTC exists to foster the growth of Utah's science and technology companies, attract a broader array of funding resources and ensure Utah has the highest-quality skilled workforce.

Lastly, The U.S. Department of Labor WIRED Initiative (Workforce Innovation in Regional Economic Development), awarded to GOED and the Utah Department of Workforce Services, provides \$5.16M to develop a talent "pipeline" to the growing life science industry in Utah. It is a state-wide initiative that engages partners from higher and public education, industry, government and community groups to establish innovative training and education programs that provide employment opportunities.

In addition to these partnerships, Utah's life sciences businesses are actively engaged in all facets of the life sciences cluster in order to facilitate growth and expansion of this community of developers, suppliers and services.

For more information on Utah's Cluster initiatives visit the Governor's Office of Economic Development at <http://goed.utah.gov/> and the Utah Economic Development Corporation at <http://www.edcutah.org>. ■



For more information on clusters and cluster initiatives visit:

Center for Strategy and Competitiveness – Stockholm School of Economics
<http://www.hhs.se/EFI/CSC>

The Council on Competitiveness
www.compete.org

European Cluster Observatory
<http://www.clusterobservatory.eu/>

Indiana Business Research Center – Indiana University
<http://www.ibrc.indiana.edu/>

Institute for Strategy and Competitiveness – Harvard Business School
<http://www.isc.hbs.edu/>

Purdue Center for Regional Development
<http://www.pcrd.purdue.edu/>

EDA News You Can Use

New Streamlined Application is now available!

The Economic Development Administration is pleased to announce that it introduced a new, streamlined single application form, the *Application for Investment Assistance* (Form ED-900), on October 1, 2008. The new Form ED-900 is available for download at www.grants.gov and is ready for use by all eligible applicants. The new Form ED-900 consolidates all EDA-specific requirements into a single application form and replaces EDA's previous suite of application materials. Beginning November 1, 2008, only the Form ED-900, along with specific forms and attachments from the Standard Form 424 family, will be accepted for consideration. Additional information about the new single application and EDA's application process is available at www.eda.gov under the heading "Top News".

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\$500 million in disaster recovery funds appropriated to EDA:

EDA is actively coordinating with other appropriate Federal agencies in its response to Presidential disaster declarations, including the Midwest floods. Congress appropriated a supplemental \$100 million in June as part of the FY 2008 Disaster Supplemental Appropriations Act and a supplemental \$400 million in September as part of the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act 2009. This funding enables EDA to be a "second responder" to natural disasters by aiding localities with investments for long-term economic recovery. EDA has posted an announcement of a federal funding opportunity with respect to the first supplemental appropriation at www.eda.gov and at www.grants.gov. As this publication goes to print, EDA has not yet posted an announcement for the second supplemental appropriation. Funds under this appropriation can provide assistance for natural disasters such as the recent Gulf Coast hurricanes. EDA will post additional information at www.eda.gov when it becomes available.

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