

Regional Innovation: National Prosperity

*Summary Report of the Council on Competitiveness
Regional Competitiveness Initiative*

Prepared for the U.S. Economic Development Administration **A Global Challenge**

In the modern global economy, U.S. regions face a new economic development challenge. Traditionally, the regional economic development endeavor has been focused on attracting large industrial operations or headquarters using tax incentives and access to inexpensive labor as the primary promotional tools. During the past few decades, however, the U.S. industrial landscape has transformed dramatically. Many labor-intensive industries in the U.S. have either shifted production to other parts of the world or disappeared altogether. In their place, the American economy has developed a large number of industries where intellectual capital drives growth.

The U.S. is not unique in building a knowledge-based economy. In addition to other advanced economies, many formerly “underdeveloped” countries are now competing in knowledge-intensive industries previously considered to be safe from international competition. America now faces intensifying competition at both ends of the jobs spectrum: low-wage/low-skill and high-wage/high-skill.

At the spectrum’s low end, U.S. regions must face the reality that there are fewer and fewer industries in which American firms can compete globally using a low-cost strategy. On the high end, U.S.-based firms can and do win. In many industries, firms operating in the United States have been able to adjust to new global business conditions and develop international leadership. Economic development strategies, however, have not always kept pace with the changing global economy; communities are still pursuing the old, incentive-based strategies. These strategies don’t work in a world in which firm success depends ever more on the quality of ideas and talent, and ever less on traditional infrastructure. In a knowledge-based economy, new strategies are required to support the prosperity of American workers.

The Answer: Innovation

We already know that innovation is the key to driving growth and prosperity. Economists calculate that nearly 50 percent of U.S. annual GDP growth is attributed to increases in innovation. For the past two centuries, the United States has been the world leader in developing innovative products and services. While we have utilized our natural resources, it is our national ability to generate and apply new knowledge that has allowed us to become the world’s economic engine, and has supported consistent increases in well-being for our citizens.

The Changing Nature of Innovation

While innovation remains the answer, the nature of innovation is changing, and so are the ways in which we need to compete. The 2005 National Innovation Initiative, the Council’s two-year study of America’s innovation system, concluded that innovation has become:

- **Faster:** Technology advances are diffusing at ever-increasing rates. It took 55 years for the automobile to spread to a quarter of the country, 35 years for the telephone, 22 years for the radio, 16 years for the personal

computer, 13 years for the cell phone, and only seven years for the Internet.¹

- **Multidisciplinary:** The most valuable innovations often arise from the intersections of different fields or spheres of activity. Fields like bioinformatics or nanotechnology did not even exist a few decades ago. Today, many economists believe they will become major drivers of the U.S. economy of the future.

The Regional Competitiveness Initiative

Launched in 2003 with funding from the Economic Development Administration, the Council on Competitiveness Regional Competitiveness Initiative was designed to help regional leaders build innovation-based strategies.

Over a two-year period, the Council implemented regional initiatives with local partners in seven areas: Central New Mexico, Greater Rochester, New York, the Inland Northwest (Spokane–Couer d’Alene area), Northeast Ohio, St. Louis, West Michigan, and Wilmington, Delaware.

In each region, the Council worked with local partners to implement a regional innovation assessment that evaluated regional strengths and weaknesses. Using a variety of analytical methods, including a specially designed regional innovation survey, the Council-led team completed the assessment. Including all seven regions, more than 1,250 business leaders responded to the survey and over 180 community leaders were interviewed.

Guided by local steering committees of business, academic, labor, and nonprofit leaders, each team selected three core priorities to address in each region. Existing local organizations or new leadership groups were recruited to take responsibility for implementing recommendations related to each core issue. These local leaders joined with Council representatives and national experts to share the findings of the regional innovation assessment at a regional competitiveness summit. Aimed at a broad array of community leaders, the summits served to disseminate findings and attract interest of from regional stakeholders in the core-issue action initiatives. In every region, groups are presently working to address the core issues identified by the initiative.

Two reports were completed as part of the project. The excerpt reprinted here comes from “Regional Innovation: National Prosperity,” which presents five key cross-cutting issues faced by regions and suggests potential solutions to the challenges. A second publication, “Measuring Regional Innovation: A Guidebook for Conducting Regional Innovation Assessments,” provides a framework and step-by-step instructions for conducting a regional innovation assessment.

Both documents are available in full at www.compete.org/nri in the Innovation Tools section.

- **Collaborative:** As innovations become more technologically complex, they require active cooperation and communication among scientists and engineers and between creators and users.
- **Democratized:** Innovation used to be the domain of research and development departments. Today, more workers and even customers are involved in the innovation process. Firms in industries as diverse as software and food flavoring are providing tools to customers to design their own products.
- **Global:** Innovation can originate anywhere. Increased education and economic growth have improved the capacity of developing countries to offer new products and services. Modern communications and transportation technologies allow these countries to share advances with consumers across the globe. As a result, great ideas – regardless of where they originate – are less likely to be lost in our increasingly interconnected world.

However, great ideas are also more likely to be developed and commercialized in countries outside of the United States. Throughout the world, competition is intensifying. Consider the following facts:

- Foreign-owned companies and foreign-born inventors account for nearly half of all U.S. patents; Japan, Korea, and Taiwan account for more than one-quarter of this subgroup.²
- Sweden, Finland, Israel, Japan, and South Korea each spend more on R&D as a share of GDP than the United States.³
- In 2004 China overtook the United States to become the world’s leading exporter of information and communications technology (ICT) goods such as mobile phones, laptop computers and digital cameras.⁴
- Only six of the world’s 25 most competitive information technology companies are based in the United States; 14 are based in Asia.⁵

In summary, the changing nature of innovation and accelerating global competition means that the U.S. can no longer rest on its past success. Our innovation leadership is not guaranteed and neither is our history of a rising living standard. To sustain our growth, we must innovate more, innovate better, and innovate faster. As the National Innovation Initiative report, “Innovate America,” concludes, “the capacity for innovation is going global – and we must pick up the pace...today, the forces of global economic integration and advances in technology are creating a different and more complex challenge. Sustaining competitive advantage will require moving beyond efficiency and quality toward creating new markets, increasing choice and value to customers, and innovating continuously on a global basis.”

Regional Innovation

Paradoxically, even as innovation has globalized, the role of regions as the critical nexus for innovation-based economic growth has increased.

Although national and state policies create a platform for innovation, the locus of innovative activities is at the regional level, where workers, companies, universities, research

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institutions and government interface most directly. True innovation “hot spots” emerge regionally. Regions are the building blocks of national innovation capacity because they offer proximity and can provide specialized assets that foster firm-level differentiation.

Proximity: Despite the virtual closeness enabled by information technology advances, innovation remains a “contact sport” that is best pursued through personal interactions at every stage in the game. In the initial stage of knowledge creation, collaborative research and development efforts are easier when one can interact on a personal basis. Tacit knowledge is more easily accumulated and shared within a small geographic area. As the emphasis on multi-disciplinary projects grows, direct interaction becomes even more important to ensuring the free flow of ideas and to avoiding misunderstandings among participants from different academic fields. The application of knowledge occurs faster when industry and universities maintain close working relationships in the real world, not the virtual one. Being close to suppliers and customers promotes faster responses to changes in market demand. The relative proximity of institutions within a metro region enables close interaction on a consistent basis and thus creates the ability to break down traditional functional barriers between developers, funders, and users of ideas. Proximity also supports the development of strongly linked industry clusters.

Diversification and Differentiation: Success in the global economy requires both diversification and differentiation. At a macro level, our economy must support a *diverse* set of businesses to provide safety from sector-specific economic shocks. At a micro level, firms need to differentiate their offerings in order to gain competitive advantage. A regional economic strategy supports both these requirements. Regions – as opposed to individual cities or towns– offer the diversity of people, land types, and services to support a variety of businesses. As opposed to states, regions provide an environment in which firms can easily access and influence the development of specialized infrastructure, educational institutions and a workforce that support differentiation.

Every region in the country has the capacity to become an innovation hub, at least in some industries. But only a handful of areas have developed solid platforms to support innovation-based growth. For those regions that have not developed a strong innovation environment, it is critical for leaders to assess the strengths and weaknesses of their

regional innovation ecosystem and understand the potential drivers of future innovation-based regional growth. More importantly, leaders must act on this information to improve their region’s innovation platform.

Five Common Challenges to Regional Innovation

The Regional Competitiveness Initiative revealed five important issues commonly faced by regions that endeavor to develop innovation-based economies: promoting regionalism; building and retaining talent; transitioning to advanced manufacturing; networking knowledge assets; and energizing the entrepreneurial economy.

Promoting Regionalism

A fundamental problem confronts many regions across the country: They aren’t acting as regions. Economic development professionals increasingly recognize that multi-county areas are the appropriate unit for economic analysis and planning. However, there is still significant resistance to regional action. Much of the hesitancy comes from a structural challenge created by historically drawn political boundaries. (Throughout much of the country, county lines were originally drawn to ensure all residents were within a day’s mule ride to the county seat.) In recent years, new town boundaries and other taxing entities have only added to the number of political jurisdictions within regions. At a time when greater partnership is necessary, these political boundaries tend to hinder economic collaboration, particularly among public-sector entities. The views of one Spokane business leader express the common challenge: “Lack of collaboration among numerous overlapping community organizations is dividing our leadership and our dollars.”

However, there are successful examples of regional collaboration. Often led by private-sector entities, stakeholder groups are developing regional institutions. For example, in Northeast Ohio, leaders have created Team Northeast Ohio, a partnership of economic development organizations from thirteen counties. The philanthropic community has followed suit in creating the Fund for our Economic Future, to “advance a common and highly-focused regional economic development agenda.” Nearly 70 Northeast Ohio philanthropic organizations contributed to the fund, which will only support economic development initiatives with a regional scope.



Team NEO's Regional View

Another example is the St. Louis region, where all of the major regional economic development entities have signed on to a “no-poaching” agreement to stop the practice of trying to relocate existing businesses to different cities within the same region. In West Michigan, the West Michigan Strategic Alliance has used innovative geographic information system technologies to create a “common framework” document that clearly depicts how the communities in the region are connected.

Building and Retaining Talent

In a knowledge-based economy, the most important form of capital is human capital. People, not computers or firms, innovate. But many regions are having a hard time retaining an educated workforce. There are at least two elements to this challenge. First, as the economy relies less on low-skilled workers, a great need arises to develop retention programs for displaced workers with skills relevant to growth industries. Second, many communities are losing younger, educated citizens to more attractive regions. According to a recent Census report, 243 U.S. metropolitan areas showed a net loss in migration of young college graduates, while only 75 showed a net gain.⁶ (See Figure I on page 29.) Even fewer rural areas have been able to maintain next-generation workers, as they are increasingly attracted to urban areas. One West Michigan business leader summarized the challenge well: “We have the workforce for the industries of today, but not for the industries of tomorrow.”

Regions are responding. Throughout the country, regional workforce boards are partnering with educational institutions and the private sector to create programs that are more responsive to the needs of both employers and workers. In the Jacksonville, Florida area, WorkSource, a six-county regional workforce development organization has developed a tiered, targeted service model that provides support to businesses based on size, industry, and specific workforce needs. Implementing this market-segmentation approach has allowed WorkSource to more effectively allocate limited resources and drive increases in both employer and employee satisfaction. Their strategy is aligned with the regional economic development strategy, as they work closely with and

share the same service area as the Jacksonville Regional Chamber of Commerce, the regional economic development organization.

Focusing on regional talent at an even earlier stage is Futures, Inc., a non-profit based in North Carolina. Futures, Inc. has developed a Web-based program to help high school students evaluate potential careers based on their interests, and then introduces them to local businesses offering internships or special training programs in their fields of interest. Community colleges work with companies to design training programs that will allow the firms to fill specific job openings.

In Northeast Ohio, Philadelphia, Pittsburgh, Oklahoma City and other regions, leaders have coalesced to develop “brain gain” strategies to attract and retain talented workers. Like the College 360 Program in Northeast Ohio, most of these programs focus on integrating college students into the local business and civic communities while they are still in school, as a method for turning out graduates with established connections to the region. Through internships and mentoring programs that lead to job placement, these efforts aim to keep students in the area after they graduate.

Transitioning to Advanced Manufacturing

American manufacturing production is losing share to international competitors. Over the past five years, other countries, especially in Asia, have posted double-digit growth in manufacturing while the U.S. has stalled. U.S. firms have been shedding domestic jobs – particularly in traditional industries, such as textiles and garments – choosing instead to locate operations in lower-cost countries. Communities with manufacturing-based economies have been confronted with the increasingly urgent need to respond to this trend. The answer is *not* to abandon manufacturing. Instead, regions should develop programs to help firms transition to advanced manufacturing strategies.

In the United States, there are few manufacturers that can compete in a global market based on low-cost labor or commodity products. To thrive, manufacturers must find some way to differentiate their products. Many options for differentiation exist; businesses can derive unique advantage from product design, production speed, logistics, the end-user experience, or superior marketing. But business cannot proceed as usual.

Forward-thinking manufacturers already understand this. In West Michigan, Herman Miller has partnered with Cascade Engineering, a plastics company, in the production of their newest chair, the Mirra. The office chair is designed to take advantage of two market trends – an appreciation for design and the growing environmental movement. The Mirra is both stylish and environmentally conscious – the chair is 98 percent recyclable and constructed of 42 percent recycled content.

Manufacturing Extension Partnerships, technical assistance organizations funded by the National Institute for Standards and Technology and state and local contributions, are playing an important role in helping small and medium manufacturers develop differentiated products. A Northeast

Ohio extension center, CAMP, has developed a new set of programs specifically around product innovation to help local businesses improve the impact and speed of new product development. In Greater Rochester, leaders have built the Infotonics Technology Center, a unique shared facility that offers technical support and specialized manufacturing facilities to help local optics firms make the transition from concept to prototype. Infotonics has been designed to help firms continually innovate by spurring cross-institutional collaboration and reducing the cost of experimenting with emerging technology.

Networking Knowledge Assets

The Infotonics collaboration suggests a response to another of the common challenges faced by regions throughout the country: underutilization of regional innovation assets. Excellent research universities fail at commercialization because they are disconnected from local business communities. Entrepreneurs with great potential go unfunded because they cannot find – or do not have access to – venture capital providers. Workforce training institutions work diligently to help displaced workers, but fail to fully leverage their resources because employers find it cumbersome to work with the system or because they lack information about emerging industry needs. In sum, we often find deep knowledge assets unlinked; smart people not communicating; and strong institutions not sharing ideas and resources. In our regional innovation survey, only 18 percent of the 1,250 business leaders said university technology transfer offices had contributed to their business success. Only 33 percent believed that the quality of R&D collaboration between business and universities had contributed to regional business success.

Regional business, civic, and political leaders have recognized the need to strengthen connections and collaboration. Following the model designed at UC-San Diego, leaders in

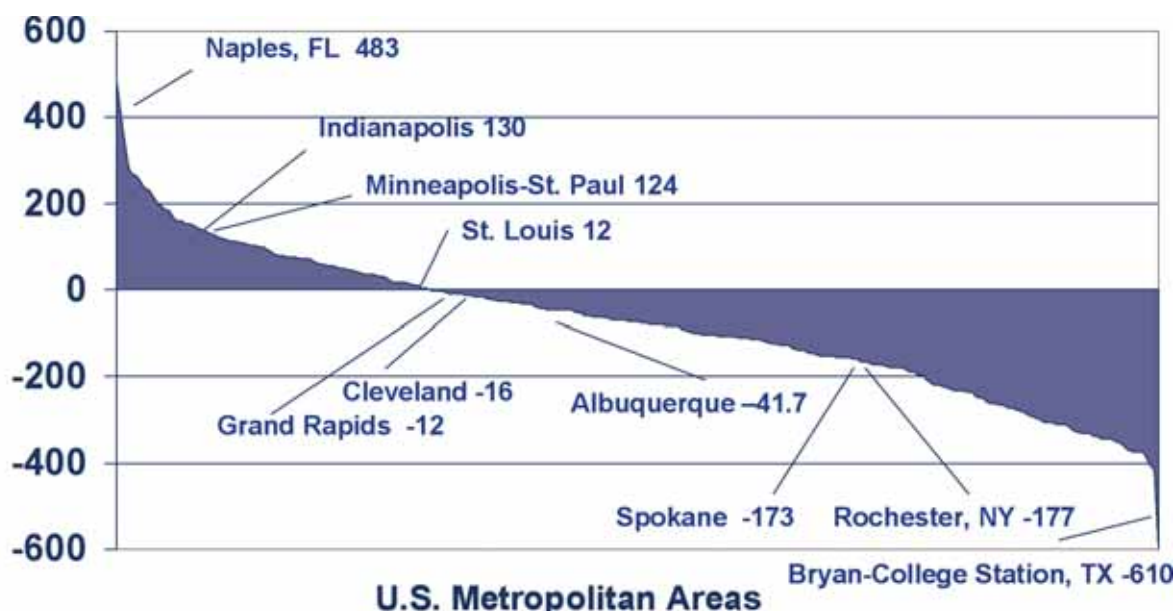
the Inland Northwest have launched ConnectNorthwest, a program designed to serve as “neutral broker” by providing coordinated access to the entrepreneurial resources needed for businesses to develop, grow, and become sustainable. As in Spokane, leaders in Central New Mexico and St. Louis have developed programs to make sure all the players in innovation-based businesses and institutions have a forum where they can meet and develop relationships. The leadership network and cross-fertilization of ideas and information across all elements of the local innovation eco-system is a critical success factor.

In Northeast Ohio, 23 regional universities and colleges have joined to form the Northeast Council on Higher Education, or NOCHE. Among other activities, NOCHE helps link universities to businesses interested in partnering with those schools, and facilitates collaborative research projects and technology transfer in the region. In Spokane, the major colleges and universities, the medical health service and research centers, biotechnology research and development institutions, and economic development organizations have created the Spokane Alliance for Medical Research (SAMR). SAMR was created to bring additional research dollars to the region and has targeted sleep research as its primary focus for funding.

Energizing the Entrepreneurial Economy

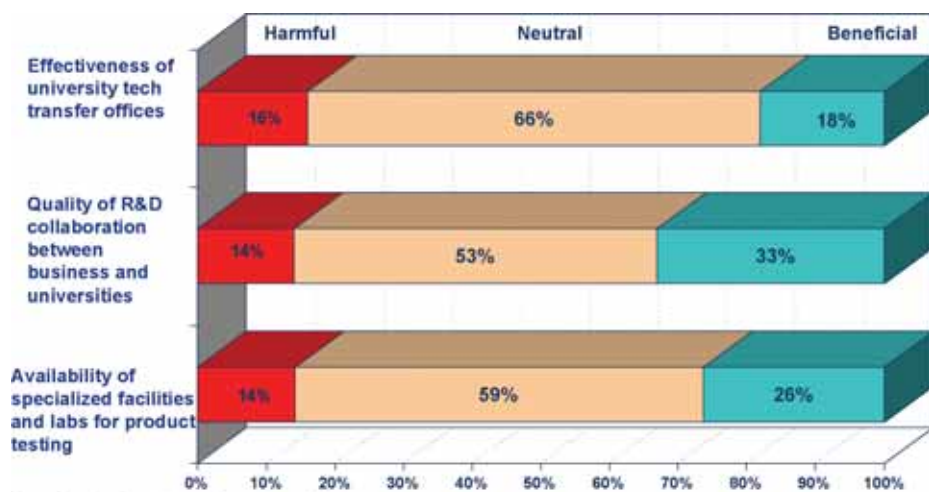
Jobs being created in the U.S. today are overwhelmingly coming from small and medium-sized businesses.⁷ For many regions, supporting entrepreneurship has become the best option for replacing jobs lost as larger firms downsize. However, in the regions we studied, there was still significant room for improvement in building entrepreneurial support services. One consistent concern voiced in the study regions was a lack of venture capital funds. However, the more urgent problem that emerged was a lack of deals and strong entrepreneurs that merit venture funding. While programs

Figure I: Net Migration of Young, Single, and College-Educated People 1995-2000



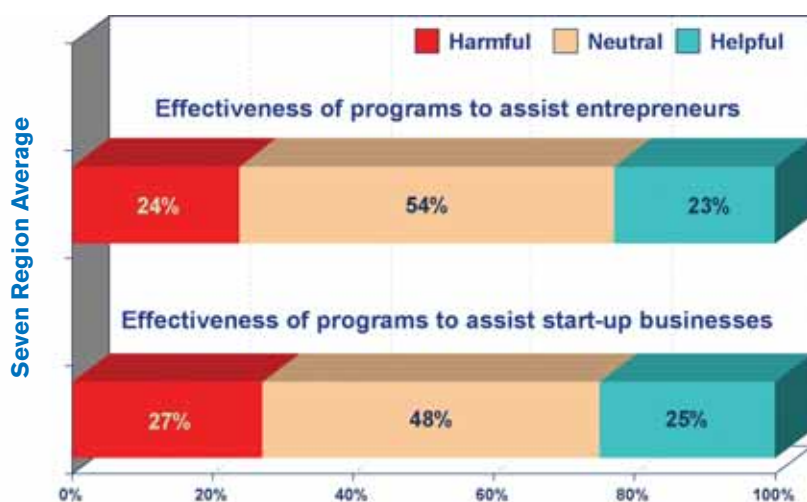
Source: U.S. Census Bureau.
 Note: Rate calculated on a per thousand population basis, using 1995 as base year. Based on data from 318 MSAs.

Figure II: Summary of Regional Survey Measures of Innovation Linkages



Source: Council on Competitiveness Regional Survey, 2003-4
 Participants were business executives from Central New Mexico, Northeast Ohio, Wilmington, Spokane, West Michigan, Rochester, NY, and St. Louis areas
 Notes: Non-respondents and "not applicable" responses have been excluded. Percentages may not sum to 100 due to rounding.

Figure III: Summary of Regional Survey Measures of Entrepreneurial Support



Source: Council on Competitiveness Regional Survey, 2003-4
 Participants were business executives from Central New Mexico, Northeast Ohio, Wilmington, Spokane, West Michigan, Rochester, NY, and St. Louis areas
 Notes: Non-respondents and "not applicable" responses have been excluded. Percentages may not sum to 100 due to rounding.

exist in most regions to improve the level of entrepreneurship, only 23 percent of our survey respondents felt that programs aimed at assisting entrepreneurs were highly effective and only 25 percent felt that programs aimed at supporting start-up businesses were highly effective. Part of the explanation for these low levels of satisfaction was simply an unawareness of existing programs. Further, many business leaders explained that they did not see these programs as very important because there is a dearth of entrepreneurs (or people interested in becoming entrepreneurs) in their regions.

This raises perhaps the most fundamental challenge facing regions hoping to foster more entrepreneurial efforts: the lack of an entrepreneurial culture. Work by the National Commission on Entrepreneurship and the Council on

Competitiveness has identified a variety of attitudes that are important to support a vibrant entrepreneurial culture: appreciation for difference and diversity, willingness to collaborate, and appreciation for risk-taking. Communities that support innovators and innovation embrace people with diverse backgrounds, understand that failure is part of the business process, and encourage businesses – even in the same industry – to collaborate when possible.

Throughout the U.S., many, if not most communities do not meet this description. Across the seven study regions, only 26 percent of the survey respondents felt their “regional business culture understands failure as part of the innovation and learning process.” The same percentage felt that business leaders “proactively share information and resources when possible.”

Increasingly, regions are addressing this cultural and institutional challenge in hopes of attracting and retaining entrepreneurial firms. Through mentorship programs and annual entrepreneurial award contests, many communities have developed programs to provide private support and public recognition to entrepreneurs.

In St. Louis, the Regional Chamber and Growth Association has been actively involved in supporting these sorts of programs, and has taken a step further by playing a key role in forming the Arch Angels, the largest angel capital group in the region. Washington University in St. Louis was one of eight universities selected in 2004 by the Kauffman Foundation to participate in its Kauffman Campus Initiative. The Kauffman initiative is an effort to spread entrepreneurship beyond its traditional domain of the business and engineering schools to the entire university and its community partners. In response to our project, business leaders in the state of Delaware have created the Delaware Entrepreneurial Action Group to better integrate disparate entrepreneurial programs and promote coordinated efforts by both large and small companies to support entrepreneurs in the region.

Conclusion

Today, innovation is occurring at an accelerated rate across the globe. To maintain the United States’ position as global economic leader – and thereby ensure national prosperity – U.S. regions must develop new strategies. It is no longer possible to expect traditional advantages like location, natural resources or low-skilled labor to drive economic growth. In order to continue building our knowledge-driven economy, our regions must develop fertile environments for firms and people to innovate.

National and state policies that impact economic development should be designed to reflect this reality and support regional action. Regional leaders should respond by breaking

Figure IV: Summary of Regional Survey Measures of Business Culture



down old political and cultural barriers to cooperation. Investments in innovation assets – starting with human capital – should be integrated into comprehensive strategies to fully leverage the collective strengths of regional communities. Instead of accepting the decline of U.S. manufacturing, national, state, and regional actors should encourage the development and commercialization of more innovative products and services. Entrepreneurship, both in existing companies and start-up ventures, must be embraced as attitudes that discourage risk-taking are abandoned.

Overcoming these challenges to regional innovation will not be easy, but the global success of U.S. regions like Raleigh-Durham, San Diego, and Austin show that it is achievable. The efforts of the seven project regions show that even areas challenged by economic downturns can successfully pursue the opportunities offered by innovation-based growth strategies. Our hope is that the Council’s Regional Competitiveness Initiative will inform and assist regions throughout the U.S. as they work to strengthen their own innovation capacity and support our nation’s collective prosperity. ★★★

To maintain the United States’ position as global economic leader – and thereby ensure national prosperity – our regions must develop fertile environments for firms and people to innovate.

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