Early Implementation of Generation I of the Workforce Innovation in Regional Economic Development (WIRED) Initiative

2007 Interim Evaluation Report

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Executive Summary

Global competition is a compelling national challenge. Increasingly, the globalization of the economy is determining where Americans work, how much money they are paid, and the level of prosperity in the regions in which they live.[1] New jobs and markets are being created, the vast majority of them in what many refer to as "the new economy" of small entrepreneurial and innovative companies.[2] In today's global economy, focusing on knowledge-based industries and high value-added jobs is essential, whether a community's concern is building, renewing, or sustaining its prosperity.[3] Diversification, adaptation, and continuous innovation are essential to long-term regional prosperity in the U.S.[4]

To carry out the development and implementation of such strategies, and to support President George W. Bush's broader Competitiveness Agenda, Secretary of Labor Elaine L. Chao announced the Workforce Innovation in Regional Economic Development (WIRED) Initiative in November 2005. The premise of the WIRED Initiative is that national competitiveness and regional prosperity are possible if communities learn how to link their varied knowledge resources with their business and innovation assets, and ensure that their workforces have the new skills and knowledge required to work effectively in new and emerging industries. To this end, the Department of Labor's Employment and Training Administration (ETA) selected 13 regions across the country (known as Generation I) to receive approximately $5 million each per year for three years, as well as access to ongoing technical assistance.[5] The WIRED Initiative reflects ETA's new approach for growth and prosperity in a climate of increasingly fierce global competition. This approach requires attention to four key factors shaping ideas about innovation and, in particular, human capital development for globally competitive enterprises:

1. A focus on the importance of science, technology, engineering, and math (STEM) competency in all spheres of activity, especially as applied to new and emerging products and industries;
2. An increased recognition that innovation—through science, technology, and entrepreneurial efforts—is critical to global competitiveness;

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[1] Kantor, Rosabeth Moss. *World Class: Thriving Locally in the Global Economy*, New York: Touchstone/Simon and Schuster, 1995; and Florida, Richard. *Who's Your City?: How the Creative Economy Is Making Where to Live the Most Important Decision of Your Life*, New York: Basic Books, 2008.

[2] Audretsch, David. *The Entrepreneurial Society*, New York: Oxford University Press, 2007.

[3] Saxenian, Annalee. *The New Argonauts: Regional Advantage in a Global Economy*. Cambridge, MA: Harvard University Press, 2006.

[4] Atkinson, R.D. and D.K. Correa. "2007 State New Economy Index: Benchmarking Economic Transformation in the States," The Information Technology and Innovation Foundation and the Ewing Marion Kauffman Foundation, February 2007.

[5] Based on the original procurement, ETA selected another 13 regions (known originally as the Virtual Community of Regions and subsequently, as Generation II) to receive $100,000 to support their participation in WIRED Academies and other learning opportunities. In 2007, ETA supplemented these funds with awards totaling $5 million for each region over three years. Finally, in June 2007, ETA awarded 13 Generation III WIRED regions a total of $5 million each over three years. Information about regions in all three Generations of the WIRED Initiative is available at http://www.doleta.gov/wired/regions/.

3. Acknowledgement that the process is intensely regional because it arises through close interaction among industrial, research, education, and commercializing institutions that can respond rapidly to challenges and opportunities; and
4. An emphasis on talent development, integrating education and workforce training institutions with innovators and entrepreneurs within each region.

In October 2006, ETA contracted with Berkeley Policy Associates (BPA) and its partner, the University of California, San Diego (UCSD), to evaluate the WIRED Initiative's 13 Generation I regions. The evaluation's objective is to provide a comprehensive understanding of the implementation and cumulative effects of WIRED strategies in the Generation I regions, including transformations in their regional economic and workforce investment systems. This report provides an initial snapshot of how the regions have progressed in their first year since the WIRED Initiative began.

Study Design and Methods

The evaluation's study design includes: reviewing all existing materials on the WIRED Initiative in general, and the Generation I regions in particular; conducting annual visits to the Generation I regions; conducting two surveys of WIRED partners; gathering and analyzing information from existing databases on regional economic and other factors; and analyzing information from all of these sources together. The research design is, of necessity, iterative and changeable over time, within the broad general structure originally laid out in the evaluation proposal and design report.[6]

This study is not simply an evaluation of workforce training or of economic development activities, but also a description of how regional organizations that are concerned with economic growth and building human capital come together in new social relationships through which shared goals, co-investment, and a renewed sense of regional purpose and confidence can develop. The evaluation, therefore, focuses on three critical aspects of regional economic transformation: 1) regional alliance-building across geographic and professional boundaries, along with development of a regional identity; 2) specific organizational and programmatic strategies, in terms of partners, governance, co-investment, and specific business and talent development initiatives; and 3) measurable progress toward sustainable economic transformation, as indicated by outcome metrics related to regional economic well-being and workforce preparedness. All three types of analysis will contribute to the evaluation's assessment of the Generation I WIRED regions' success.

Social Network Analysis of Regional Alliance-Building

Central to the WIRED Initiative is the imperative to build new kinds of strategic partnerships between the economic development and workforce development systems that will enable collaborative goals, activities, and metrics. This imperative is based on a growing body of literature, both theoretical and empirical, that emphasizes the importance of highly networked

[6] Almandsmith, Sherry, Mary Walshok, et. al. *Evaluation of Generation I of the Workforce Investment Regional Economic Development (WIRED) Initiative: Design Report*, August 30, 2007.

communities to the innovation and economic growth process.[7] A critical component of WIRED regional structures and roles is the social networking that characterizes ongoing collaboration and effective partnerships.

Social network analysis is based on the assumption that relationships among interacting units are important, and seeks to discover interesting relationships and patterns among people or other entities. The evaluation's social network analysis is based on the hypothesis that regions that build strong, thick networks will be more competitive in the new economy.[8] By mapping these networks, the evaluation team can better understand the connections of which they are made, and their overall strength.

During the first round of site visits, the evaluation team collected preliminary social network data to explore ways of analyzing and characterizing the interactions among each region's partners. This first effort to adapt social network analysis methods to the WIRED Initiative laid the groundwork for a more comprehensive social network analysis that the research team will conduct through surveys and future site visits.

The evaluation team asked each site visit respondent to identify "five individuals with whom you have significant contact in the context of WIRED" and to provide the contact's organization, job title, and frequency of contact. Overall, the largest number of individuals in the social networks (including both the respondents and the individuals with whom they have contact) was from industry, followed closely by those from education, workforce investment, and then economic development. Most of the individuals whom respondents reported contacting were at the decision-making or management levels within their organizations. These findings suggest that the Generation I WIRED regions have been successful in securing the participation of the decision-makers who operate their partner organizations, an important step in ensuring the success of any endeavor but vital to the success of collaborative initiatives.

In addition to examining simple frequencies, the evaluation team also explored several measures specific to social network analysis:

- Centrality – The count of the number of ties to other actors in the network;
- Centralization – The extent to which a small number of nodes have a large number of links;
- Strength of Relationships – The extent and nature of interactions. This preliminary analysis used frequency of contact as a proxy for the strength of a relationship; and
- Betweenness – The degree to which an individual lies between other individuals in the network and serves as an intermediary, liaison, or bridge.

For a number of reasons, this preliminary social network analysis should be considered the evaluation's pilot test of social network data collection. In collecting social network data

[7] Gloor, Peter. *Swarm Creativity: Competitive Advantage through Collaborative Innovation Networks*, New York: Oxford University Press, 2006.
[8] Gloor, Peter. *Swarm Creativity: Competitive Advantage through Collaborative Innovation Networks*, New York: Oxford University Press, 2006.

throughout the remainder of the evaluation, the evaluation's emphasis will be on identifying and securing responses from as many relevant individuals as possible in order to provide an accurate picture of the regions' collaborative networks.

WIRED Structures, Strategies, and Activities

Primarily through a series of in-depth site visit interviews, the evaluation team is exploring how the Generation I WIRED regions organize their governance, recruit and retain partners and resources, and carry out specific business and talent development initiatives. This analysis aims to both assess the regions' interim progress toward long-term economic transformation, and to identify "what works" in terms of the effectiveness of various organizational structures, strategies, and activities.

Visits during the first year of the evaluation addressed collaboration, building alliances, building a regional identity, the regions' priorities for their WIRED initiatives,[9] partnership structures and partner roles, and WIRED activities. The key findings from these visits are summarized below. During the second round of visits, interviewers will delve into more specific organizational and programmatic issues, including: specific steps that foster innovation, new business development, and improved workforce education and training services; implementation successes and challenges to date; and changes in structure and/or activities. The final round of site visits will focus on assessing progress toward sustainable economic transformation and will explore the influence of WIRED on the regional community and its service systems, how project staff measure outcomes and impacts, and the ongoing sustainability of each region's efforts.

Quantitative Measures of Progress

Extant data provide external, independent, and unbiased information about many aspects of progress toward economic and workforce transformation in the WIRED regions, including a number of areas not usually measured in workforce investment studies. Thus, in addition to information gathered directly from the regions, the evaluation team is collecting existing annual national data from other organizations that were originally used for other purposes. The team has identified, validated, and filtered data on demographic, workforce, business innovation and vitality, and post-secondary educational measures. The data collected over the last year provide a baseline for the Generation I regions on these measures. As the evaluation continues to collect these data over time, the team will be able to assess changes in the regions' economic environment by comparing current data with baseline values.

Nonetheless, because system-building is by its nature a long-term investment, the true impact of the WIRED Initiative is not likely to manifest itself within the time frame of the evaluation. Although the evaluation's study period extends 15 months beyond the end of the Generation I grants, changes in the regional economies resulting from WIRED may take ten years or longer to happen. Thus, this evaluation is designed to be sensitive enough to detect relatively small effects that represent indicators of progress in each region, and the study's Final Report will assess the

[9] This report distinguishes between the national and local WIRED efforts by using Initiative (with a capital "i") for the national effort and initiative (with a lower case "i") for projects and programs associated with local WIRED regions.

progress that the regions have made toward transformation during the period of the WIRED Initiative.

Key Findings

The evaluation's baseline findings can be categorized as those relating to the context of the Generation I regions, regional structures and roles of partners, WIRED strategies and activities, funding, how regions document and assess success, patterns and trends across regions, and workforce system transformation.

Context

One of the challenges and opportunities of the evaluation is the tremendous variation in the characteristics of the participating regions. The Generation I WIRED regions are diverse in terms of: 1) the specific needs of regional economies that WIRED is designed to address; 2) regional assets and gaps; 3) the particulars of local political and jurisdictional boundaries and policies; 4) readiness for WIRED, which includes several factors such as the existence of interagency collaborations and development of a regional identity; 5) the extent to which leadership, civic institutions, and private funders have become involved in economic development and workforce investment; and 6) the extent to which social and cultural values are congruent with the requirements of regional transformation.

Since each region has distinctive economic and social histories, regional goals vary tremendously. In addition to focusing on specific industry sectors, the Generation I regions have chosen specific objectives that cluster under three interrelated categories of goals: 1) Economic Development Goals that focus on creating and expanding markets, increasing competitiveness and innovativeness, supporting entrepreneurship, and/or increasing investment from external sources; 2) Talent Development Goals that focus on assessing and addressing labor needs and worker skill gaps, creating quality, high-skilled jobs, and/or providing education and training for adults and youth; and 3) Social/Community Development Goals that focus on creating broad community engagement and collaboration across business, education, and government sectors, and/or on creating regional identity and attitudes that support collaboration.

Major themes relevant to capacity-building, leveraging assets, and transforming community expectations are unifying issues across all program and project goals in many regions. This suggests that at least some regions have a more systemic and integrative view of their challenges and opportunities, and that they recognize the range of attitudes and practices that must change for sustainable transformation to occur.

Factors that have influenced the regions' readiness for WIRED include the kinds of workforce and economic development efforts already underway, the collaborative relationships already in place, and the extent to which a region had already identified itself as a region geographically, economically, politically, or culturally. Often, local culture and identity based on decades of social and economic history come into play, shaping how people recognize, define, and ultimately act on what is most needed for regional transformation to occur. For example, Montanans are known for their individualism and independence, and entrepreneurship comes naturally to residents of the Montana WIRED region. In contrast, residents of regions with a

long history of large scale manufacturing, such as the Piedmont Triad, tend to be reluctant to undertake the risks associated with entrepreneurship. These different starting points may prove to be an important factor influencing the overall success of the WIRED effort as each region moves toward measurable outcomes. Regions in which: 1) key players were already at the table; and 2) significant problem identification, research and analysis, and strategic planning had already taken place prior to WIRED, were at a very different starting place than those that were still convening key partners to identify regional needs at the beginning of the Initiative.

The evaluation team used information about each region's context to create a typology of readiness for WIRED consisting of three categories:

1. Three regions were **Accelerated by WIRED** – Planning, research, and goal/priority-setting had been done prior to grant award, many key players were already at the table, and inter-institutional collaboration was already taking place. WIRED funds were used to scale up and expand pre-existing or ongoing projects.
2. Seven regions were **Jumpstarted by WIRED** – A relatively concrete, WIRED-type concept existed but was not yet underway, and WIRED funds were used to refine and implement concepts and project ideas that were already in the works.
3. Three regions were **Launched by WIRED** – The idea of a regional collaborative initiative was just starting to come into focus, and WIRED funds were used to define and implement new or developing projects.

A region's readiness for WIRED did not influence its process for defining goals; however, the degree of readiness for WIRED did appear to impact the region's design process. Regions that were relatively ready for WIRED were less likely than others to undergo a collaborative process of designing their goals and strategies. The regions that were the most ready tended to have leaders and managers already involved at the time of the proposal, with firm ideas about how the WIRED initiative should look.

Readiness for WIRED also influenced the development of the region's organizational structure in several ways. First, in regions that had established related projects and initiatives prior to WIRED, the entity that was already operating or managing the existing project(s) was often chosen to lead the WIRED Initiative. Second, the regions that were most ready for WIRED used their existing partnership structures and had a detailed understanding of which organizations should be invited to participate. Third, regions that were ready for WIRED tended to have specific governance and decision-making procedures and structures—or detailed plans for such—in place at the time of the award. These procedures and structures varied widely, however, from strict hierarchies to highly consensus-driven models.

As might be expected, regions that were ready for WIRED required little time for start-up and were likely to have jumped right into their WIRED activities, while some regions that appeared less ready needed time to organize themselves. Nonetheless, some of the regions that might be expected to need more time to start up their WIRED initiatives (such as multi-state regions and those without existing collaboratives) also began implementing their strategies fairly quickly. Thus, while a region's overall readiness for WIRED could influence the speed of its early

implementation, the constellation of specific readiness factors that a region experienced in combination affected how quickly regions were able to get their initiatives off the ground.

Regional Structures and Partner Roles

The governance structures and roles that the Generation I WIRED regions have created to accomplish their goals are as diverse and complex as the organizations and histories that have shaped the initiatives. Chapter 3 describes the structures and partnerships that most centrally affect decision-making within the regions, and ultimately will help determine the effectiveness of the initiatives they are pursuing. The most prevalent type of organization operating WIRED in Generation I regions is one that has economic development as its primary focus.

This report uses the term Steering Committee to designate the group responsible for governing, overseeing, or setting overall direction for the WIRED initiative. These committees are as diverse as are the efforts they oversee. Most regions have a single committee, although their roles vary considerably. In some regions the Steering Committee plays a strong governance role, while in others it serves in a less directive oversight role, or is concerned more with policy and overall direction than with strategy. In all regions, Steering Committees are important sources of leadership, creative ideas, momentum, problem-solving skills, and accountability. The WIRED Steering Committees, advisory boards, and other committees also serve as important mechanisms for: 1) the interaction of partners from workforce and economic development, education, and industry; and 2) the initiative to obtain involvement, buy-in, and support from stakeholders.

Staffing the WIRED Initiative was a major early challenge in most Generation I regions. All regions recruited new staff to operate WIRED; only a few positions were filled by diverting existing staff of WIRED project management organizations. Recruiting, for many, turned out to be quite time-consuming, and the early steps of WIRED implementation therefore took longer than expected. Several Generation I regions experienced turnover in key staff positions—including the WIRED program manager—during the first 18 months of their grants. Turnover in any organization, particularly at the top, is disruptive. In an initiative as complex and time-constrained as WIRED, losing a program manager can be a major impediment to accomplishing goals.

At least half of the Generation I regions accomplish some of their management and operations roles through subcontracts or consultant agreements with partner organizations. Several regions also sought help from consultants and subcontractors in creating their WIRED implementation plans and goals matrices; outside help was often needed because the WIRED staff were not fully on board at the time these activities were taking place.

Among the notable achievements in many Generation I WIRED regions are the unprecedented partnerships that stakeholders are forging. Their creation has often consumed enormous time and energy and, in some instances, may have delayed measurable progress in implementing WIRED activities. Their strength lies in the fact that they are making changes possible that previously could not have been implemented. Types of partnerships include those that span professional barriers, those that transcend geographical boundaries (especially where organizations and governments have traditionally competed), and those that operate successfully

despite differences in partner organizations' cultures and missions. Any key partner in a WIRED initiative can provide the most important source of leadership within a region, and in most regions, more than one partner provides the leadership needed for different areas of WIRED implementation. Only one region truly centralized leadership. All other regions' leadership for the WIRED initiatives comes from multiple sources.

WIRED Strategies and Activities

Each of the 13 Generation I WIRED regions selected specific target industries as engines for economic growth, and implemented activities designed to meet the needs of their targeted industries. Four types of industries predominate among the target industries: 1) advanced manufacturing (including aerospace, shipbuilding, automobiles); 2) bio-fuels; 3) life sciences, health sciences, and agricultural science (including medicine, pharmaceuticals, food processing, and animal health); and 4) information technology applications, software, and telecommunications. The regions have relied on their partners throughout the region to plan, fund, and implement the wide array of projects they are using to achieve their goals.

All of the Generation I WIRED regions are also involved in other activities intended to support the transformation of the regional economy, including:

- Asset Mapping. Many regions had completed some form of asset mapping, gap analysis, employer surveys, strategic planning, or other analysis prior to the start of the WIRED initiative. In some regions, research was a minor activity, while in others it was a major element of the WIRED initiative's first year.
- Support and Development of Entrepreneurship. In the WIRED context, entrepreneurship has taken on a much broader definition to include shifting the paradigm of existing firms, or instilling an attitude of ownership and creativity in the regional workforce and culture. Many of the Generation I regions are undertaking activities that both support the formation and growth of new businesses, and encourage this type of revitalization among existing businesses, including opening business incubators, providing entrepreneurship mentoring and support, preparation of entrepreneurship curriculum for both the high school and college level, and compiling best practices and resource directories.
- Talent Pipeline Development. Development of the "talent pipeline" is a phrase that is used to describe the process of ensuring that an ongoing supply of workers is recruited and prepared to meet the needs of employers in a particular community. Activities of the Generation I regions include, but are not limited to, serving as a liaison between schools and industry, offering internships, promoting science, technology, engineering, and mathematics (STEM) education in K-12 and postsecondary settings, and contributing to the development of industry-specific training facilities.
- Workforce Training. In contrast to pipeline development, workforce training includes activities targeting incumbent, displaced, or dislocated adult workers. The Generation I regions have projects that promote training and employment of older workers, develop online curriculum for occupational skills training, provide worker training onsite at their jobs, and provide mentoring and skills upgrading for health care professions.
- Innovation and Technology Transfer. Several Generation I WIRED regions have undertaken projects that connect universities and other research facilities with businesses to create or

improve products, processes, and services. These activities aim to build on research and development that has taken place in the region in order to create or increase high-skill jobs.

- Leadership Development. Several Generation I WIRED regions have devoted resources to leadership development in an effort to engage business and civic leaders in their initiative's activities, and to help develop a shared vision for the region. Respondents in one region said that such projects would address the "need to build new civic habits of collaboration," an effort necessary for WIRED to be successful.

A region's activities and, in fact, the entire implementation effort, can be affected by the variations in contextual factors and starting points. Thus, one region may have chosen to dedicate much of its first year's efforts to conducting research for developing a clearer understanding of the complexity of its economic challenges, while another may have allocated much of its resources to expanding existing programs, and yet another may have been concentrating on developing regional structures that foster collaboration.

Funding

The ETA awarded the Generation I WIRED regions $5 million in grant funds each per year for up to three years. The source of these funds is the fees paid by employers for securing H-1B visas for foreign workers needed in the U.S. Particularly for regions in which the grantee and/or fiscal agent was not familiar with ETA regulations, the Department's clarifications of the allowable uses of these training funds have required regions to redirect funds from some of the uses they anticipated during the proposal phase. For example, the restriction against using grant funds as investment capital for entrepreneurs has required several regions to seek other sources of support for their entrepreneurship efforts, while at least one region had to find sources of funding outside the grant to support development of a regional marketing plan.

Much of the first year of Generation I WIRED implementation effort centered on complying with federal regulations governing the WIRED grant. Coupled with the challenges related to staffing at start-up, this factor resulted in most regions requesting a rollover of unspent funds from Year 1 to Year 2. As of September 2007, however, the majority of regions have obligated most, if not all, of their total WIRED grant funds awarded to date.

While regions struggled with meeting the grantee requirements, they have succeeded in using their WIRED funds to support transformative change. A thorough accounting of the regions' spending to date is not feasible at this time because consistent data are not available across all regions at the line item level. As the regions generate a more concrete spending history, the research team will gather uniform budget and expenditure data so that an analysis of differences in spending patterns across regions can be included in future reports.

ETA did not require applicants to secure matching funds in order to receive a WIRED grant, nonetheless, the original Solicitation for Grant Applications (SGA) encouraged applicants to leverage the resources of all strategic partners whenever possible. The majority of Generation I WIRED regions have taken ETA's advice to heart, and all of the regions have secured additional, leveraged funds from other sources. The regions have raised an average of $16,812,140 each in leveraged funds, resulting in a total of $218,557,200 devoted to the Generation I WIRED

Initiative. Federal grants are the largest source of leveraged funding, providing one-third of the additional funds available to support WIRED activities. Foundations and other private sources also contribute substantial proportions of the leveraged funds; these funds represent a particular success for the regions since they mean that diverse stakeholders are supporting the WIRED process.

How Regions Document and Assess Success

While almost all of the Generation I regions have identified ways to document the success of their activities that are specific to their goals and strategies, none are very far along with implementing region-wide outcome measures. Most of the regions report anecdotal evidence of success in their quarterly reports, and some report early quantifiable accomplishments. The majority of successes reported to date are in program implementation rather than in outcomes. The process of identifying and implementing measures of success has been filled with challenges because of the complexity of the WIRED objectives. The goals of most of the regions have social and cultural dimensions, in addition to economic development and workforce investment changes.

ETA staff have worked diligently to provide guidance and technical assistance to the regions to help them assess progress, despite early delays in clarifying how to operationalize the common measures for the WIRED grants.

The common measures serve as outcome metrics for the Generation I WIRED regions' talent development goals. Since ETA has designed a means of using the Workforce Investment Act Standardized Record Data (WIASRD) system for documenting achievement of the common measures, the ability to collect these data region-wide depends on the ability of the regions to develop strong partnerships with state and local workforce investment system partners. Some regions have established mechanisms to collect the data, while others have not yet worked out the details of how this will be accomplished.

Patterns and Trends across Generation I WIRED Regions

In addition to analyzing the relationship between a region's readiness for WIRED and its startup, the evaluation team also examined the influence of several other independent factors upon the implementation of the Generation I regional initiatives. Neither the type of organization that manages the WIRED initiative nor the region's approach to contracting with partners (i.e., sole source allocation versus competitive bidding) appears to have affected the speed of the region's early implementation.

The evaluation team also identified promising strategies that the regions are using in implementing various components of their initiatives. These promising activities include: 1) requiring organizations seeking WIRED funding as vendors to develop new partnerships; 2) inviting stakeholder involvement in the subcontract proposal review process; 3) seeking broad-based input into asset mapping and gap analysis activities; 4) enhancing existing structures for educating and nurturing entrepreneurs; 5) building strong ongoing communication structures between industry and educators; 6) creating new routes of entry into high-demand occupations such as nursing; 7) encouraging partnerships among educational institutions and among Workforce Investment Boards (WIBs) to create region-wide initiatives; and 8) connecting

universities and other research facilities with industry to create more demand-responsive research and development.

Workforce System Transformation

While the Generation I WIRED regions are not expected to achieve, during the first year of their implementation, the elements of workforce investment system transformation that DOL/ETA defined for the WIRED Initiative, several regions are beginning to make changes that move them in the direction pointed out by these elements. Regions are bringing together WIA funding from different "silos" to cover the cost of worker training, bringing new flexibility and the ability to direct resources to meet specific needs. Some are forming regional workforce investment boards that are beginning to think outside of their own borders, allowing them to work more effectively together to address regional labor market needs. Several states have aligned their local workforce investment areas with their economic development regions, facilitating collaboration between the two systems in addressing their regional goals.

Next Steps

This Interim Report is a snapshot of the activities and achievements of the Generation I WIRED regions through September 2007. The evaluation team will continue to assess the regions' progress in moving toward regional transformation over the next three years. The team will monitor the growth of regional collaboration through a second round of site visits and a comprehensive survey of WIRED partners to be conducted in 2008. The evaluation team will continue to pay significant attention to issues related to goals, strategies, activities, and organizational structure and governance, as well as to the extent that these change over time. The evaluation will also continue to assess the involvement of the public workforce investment system in WIRED as more WIRED activities are implemented.

The most important measurement of transformation is not whether the specific strategies and activities started under WIRED can be sustained, but that the underlying logic of collaboration between disparate stakeholders to support economic innovation on a regional level is maintained. The success of the strategies and activities will not be realized solely in the numbers of companies started and jobs created. Real, lasting success will be the change in how people think and act in starting new companies and creating new jobs.

Chapter 1: Introduction

In the post-World War II economic boom in the United States (U.S.), the jobs people had, how much they were paid, and consequently, the forms of regional prosperity that existed were, for the most part, defined by the U.S.' domination of global markets. By the 1980s, that domination was challenged by major industries—such as automobile, computer, camera, and general consumer electronics—in post-war recovered Japan and Europe.[10] Twenty years later, the role of new and emerging markets, most particularly India and China, further compounded the globalization challenge for U.S. companies. Today, both consumers and producers of valued goods and services exist across the globe, and the U.S. is no longer the dominant player determining "the rules of the game."[11]

Increasingly the world economy is replacing the U.S. economy in determining where Americans work, how much money they make in that work, and the level of prosperity American regions have.[12] For the first time in history, emerging markets represent 30% of the global economy, while the U.S. represents about 28%.[13] As Americans lose jobs and markets to globalization, new jobs and markets are being created. The vast majority of these new jobs, however, are in small entrepreneurial and innovative companies, in what many refer to as "the new economy."[14] All industries and communities are affected by these forces, which are often outside their control, and each needs some component of globally competitive economic activity in order to sustain regional prosperity.

A few examples further elucidate the changing nature of the economic landscape in the U.S. In 1954, Detroit, Michigan was the fastest growing city in America thanks to the expanding U.S. auto industry, which had no foreign challengers. Today, it is one of America's most economically distressed cities.[15] The fastest growing city in America today is Phoenix, Arizona, thanks to a very long housing boom.[16] What both cities share is a reliance on a single industry, as opposed to a diversified industrial base, for their growth. Will Phoenix be another Detroit down

[10] Inman, B.R. and D. Burton. "Technology and Competitiveness, the New Policy Frontier," *Foreign Affairs*, p.116, Spring 1990.
[11] Winters, A.A., and S. Yusuf, editors. *Dancing with Giants: China, India and the Global Economy*, The International Bank for Reconstruction and Development, the World Bank, and the Institute of Policy Studies, 2007. Also, Saxenian, AnnaLee. *The New Argonauts: Regional Advantage in a Global Economy*, Cambridge, Massachusetts/London, England: Harvard University Press, 2006.
[12] Kenny, Martin and R. Florida. *Locating Global Advantage – Industry Dynamics in the International Economy,* Stanford, CA: Stanford University Press, 2004.
[13] "The New Titans," *The Economist* (U.S. edition), September 16, 2006.
[14] Atkinson, R.D. and D.K. Correa. "2007 State New Economy Index: Benchmarking Economic Transformation in the States," The Information Technology and Innovation Foundation and the Ewing Marion Kauffman Foundation, February 2007.
[15] U.S. Department of Labor, Bureau of Labor Statistics. "Metropolitan Area Employment and Unemployment Summary," USDL 08-0128, January 2008.
[16] U.S. Census Bureau. "U.S. Census Bureau News Press Release," June 21, 2006.

the road? In the 1970s, Rochester, New York, had the third highest standard of living in the U.S., largely because of three dominant companies (Kodak, Bausch and Lomb, and Xerox), and today it is ranked 238th in standard of living.[17] The global challenges in cameras, optics, and computers radically affected the companies on which Rochester relied for its prosperity.

The lessons from such regions are important. Diversification, adaptation, and continuous innovation are essential to long-term regional prosperity in the U.S. In today's global economy, focusing on knowledge-based industries and high value-added jobs is essential, whether a region's concern is building, renewing, or sustaining regional prosperity.[18]

The Workforce Innovation in Regional Economic Development (WIRED) Initiative aims to support regions in transforming their economies. WIRED is particularly innovative in that it seeks to marry traditional workforce investment systems and resources with traditional economic development systems and resources through new models of geographic and institutional collaboration.

This chapter first discusses the WIRED Initiative, presents the Generation I WIRED regions, and then describes the evaluation design. The chapter concludes by introducing the contents of the rest of the report.

The WIRED Initiative

Global competition is a compelling national challenge; however, mobilizing knowledge and equipping organizations and workers with the essential strategies, tactics, and competencies appropriate to these new conditions occurs primarily at the regional level.[19] To carry out the development and implementation of such strategies, and to support President George W. Bush's broader Competitiveness Agenda, Secretary of Labor Elaine L. Chao announced the WIRED Initiative in November 2005.[20] The Initiative was designed for regions in need of economic transformation, including those affected by global trade, dependent on a single industry, or recovering from natural disasters.

The WIRED Initiative reflects ETA's new approach for growth and prosperity in a climate of increasingly fierce global competition. This new approach requires attention to four key factors shaping the ways we think about innovation and, in particular, human capital development for globally competitive enterprises:

1. A focus on the importance of science, technology, engineering, and math (STEM) competency in all spheres of activity, especially as applied to new and emerging products and industries;

[17] Porter, Michael. *The Competitive Advantage of Nations and their Firms*, New York: The Free Press, 1990.
[18] Leydesdorff, Loet. *The Knowledge-Based Economy: Modeled, Measured, Simulated*. Boca Raton, FL: Universal Publishers, 2006.
[19] Saxenian, Annalee. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*, Cambridge, Massachusetts/London, England: Harvard University Press, 1994.
[20] See http://www.doleta.gov/wired/

2. An increased recognition that innovation—through science, technology, and entrepreneurial efforts to harness newer, faster, and smarter technologies—is critical to global competitiveness;
3. Acknowledgement that the process is intensely regional because it arises through close interaction among industrial, research, education, and commercializing institutions that can respond rapidly to challenges and opportunities; and
4. An emphasis on talent development, integrating education and workforce training institutions with innovators and entrepreneurs within each region.

Central to the WIRED Initiative is the imperative to build new kinds of strategic partnerships between the economic development and workforce development systems that will enable collaborative goals, activities, and metrics. This imperative is based on a growing body of literature, both theoretical and empirical, that emphasizes the importance of highly networked communities to the innovation and economic growth process.[21] Boundary spanning networks, which engage in collaborative goal-setting activities and performance assessments, tend to outperform those communities in which industrial, business, and workforce development sectors are isolated from one another.[22] In an era of high-paced global competition, decisions need to be made quickly; risks are high because of uncertainties about technology, markets, and competitors; and multiple resources need to be mobilized simultaneously.[23] Boundary spanning collaboratives have the benefit of building awareness of regional capabilities and resources among broad group of stakeholders; facilitating the flow of information about opportunities and challenges; increasing knowledge flows about complex new technologies and opportunities and establishing a basis of trust, so that people can move quickly, even with imperfect information.[24] Innovative collaboratives and networks are what drive economic growth today.

The premise of the WIRED Initiative is that national competitiveness and regional prosperity are possible if communities learn how to link their varied knowledge resources with their business and innovation assets, and ensure that their workforces have the new skills and knowledge required to work effectively in new and emerging industries. To this end, the Department of Labor's Employment and Training Administration (ETA) selected 13 regions across the country (known as Generation I) to receive approximately $5 million each per year in grant funds over the course of three years, as well as access to ongoing technical assistance. Based on the original procurement, ETA invited another 13 regions (known as the Virtual Community of Regions) to participate in the WIRED Initiative by awarding these regions $100,000 each to support their participation in WIRED Academies and other learning opportunities. As ETA expanded its WIRED activities, the agency increased the funds awarded to the Virtual Community of Regions

[21] Gloor, Peter. *Swarm Creativity: Competitive Advantage through Collaborative Innovation Networks*, New York: Oxford University Press, 2006.
[22] Garcia, Maria. *Social Capital, Networks and Economic Development: An Analysis of Regional Productive Systems,* New York: Edward Elgar Publishing, 2006.
[23] Audretsch, David. *The Entrepreneurial Society*, New York: Oxford University Press, 2007.
[24] Cross, R., A.B. Hagedon, and S. Parise. "Critical Connections: Driving Rapid Innovation with a Network Perspective," Network Roundtable White Paper, University of Virginia, 2005; Powell, Walter and Stine Grodal. "Networks of Innovators," in *The Oxford Handbook of Innovation,* J. Fagerberg, D.C. Mowery, R.R. Nelson, editors, New York: The Oxford University Press, 2005; and Springer, Berlin, Robert Huggins, and Hiro Izhushi. *Competing for Knowledge,* London: Routledge, 2007.

to a total of $5 million over three years, and changed their designation to Generation II regions. Finally, in June 2007, ETA awarded an additional 13 regions (known as Generation III regions) a total of $5 million each over three years.[25]

WIRED represents a significant investment of resources and time by the ETA, federal partner agencies, and their state-level counterparts. In the months since the Initiative's awards were first announced, the federal government has demonstrated unprecedented unity in supporting it. ETA has invested valuable time and talent in assuring the Initiative's success. Leaders at the highest level within ETA remain involved in day-to-day planning and implementation. A significant number of federal partners have contributed leadership and resources in support of WIRED.[26]

ETA is making technical assistance expertise available to the WIRED regions, and is facilitating the process of the regions sharing information and lessons. In addition to hiring consultants to provide the Generation I regions with start-up assistance, the agency assigned both senior and mid-level staff (apart from the usual federal project officers) as "ETA leads" to serve as liaisons and mentors to the regions. In addition, ETA required the regions to develop implementation plans that the ETA leads must approve before additional funding is released. Finally, to help the regions share information, the agency has sponsored webinars and quarterly WIRED Academies, and created online collaborative workspaces.

Generation I WIRED Regions

Figure 1.1 lists the 13 Generation I WIRED regions by state, and provides a brief description of the area which each region encompasses. Figure 1.2 is a map showing the regions' location across the U.S. Details on each region can be found in Appendix A, which describes site visit highlights from the evaluation team's first round of visits to the Generation I regions.

The SGA for the Generation I WIRED grants identified state governors as eligible applicants for WIRED Initiative funds, and required governors to submit an application on behalf of a specific, defined multi-county regional team of public and private partners. As Chapter 2 discusses further, the process of defining the regions varied depending upon their context and the range of regional needs present in each state.

Some states (like California) asked regions to submit proposals to the Governor, who, in collaboration with the state's workforce investment agency, picked which proposals would be forwarded to ETA. In other states (e.g., Maine, Montana), staff from the state workforce agency worked with regional players to define the region's boundaries and develop the proposal submitted to ETA.

[25] Information about regions in all three Generations of the WIRED Initiative is available at http://www.doleta.gov/wired/regions/

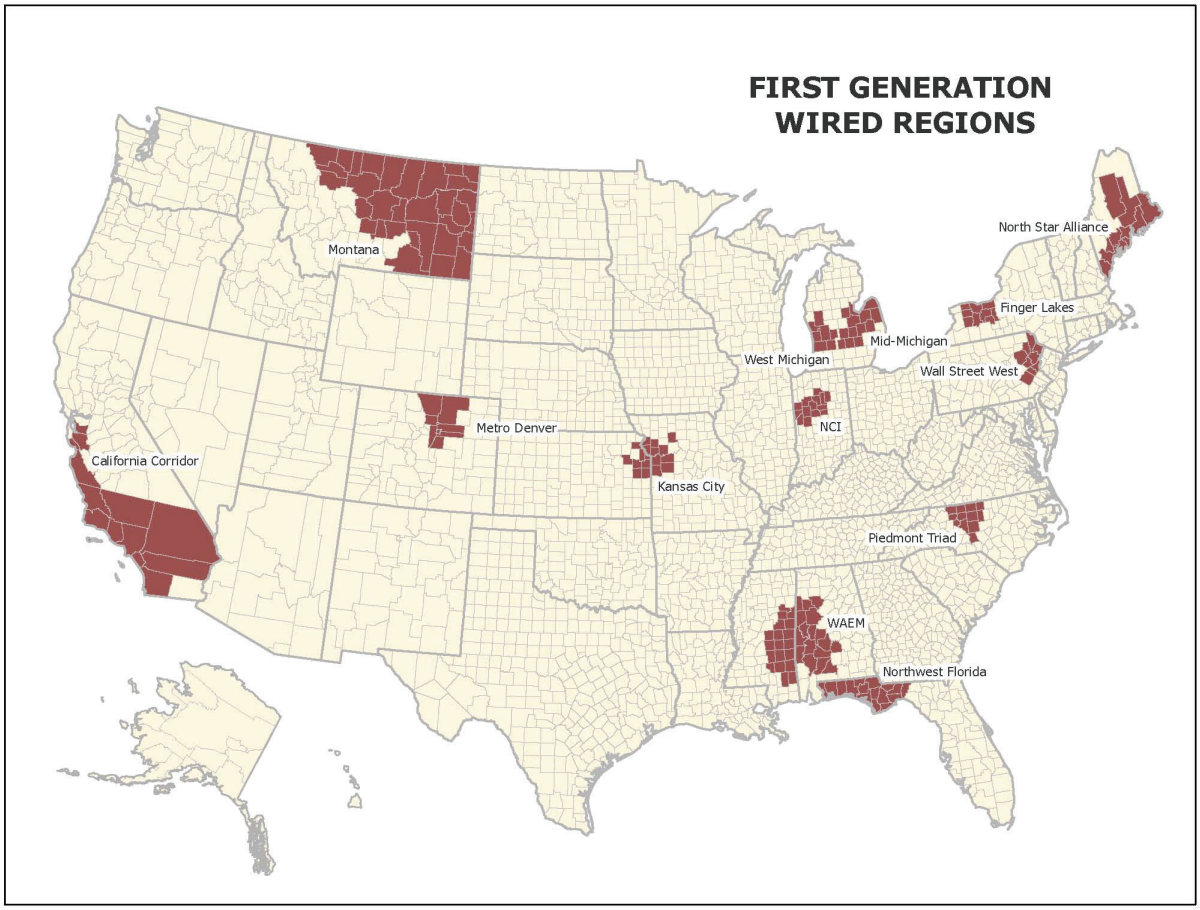
[26] Examples include multiple agencies and offices within the U.S. Departments of Commerce, Agriculture, Transportation, Interior, Education, Energy, and Defense, as well as the National Science Foundation.

Figure 1.1
Generation I WIRED Regions

State	WIRED Initiative	Location	Major Metropolitan Areas	Referred to in this report as:
Alabama/ Mississippi	WIRED Initiative for Western Alabama & Eastern Mississippi	18 counties in W. Alabama; 19 counties in E. Mississippi	Meridian,MS Tuscaloosa, AL	WAEM
California	California Innovation Corridor	13 counties from Oakland to San Diego	Los Angeles, San Diego, Oakland	California Corridor
Colorado	Metro Denver WIRED	9 counties around Denver	Denver, Boulder, Ft. Collins	Metro Denver
Florida	WIRED Northwest Florida Initiative	16 counties in the Florida Panhandle	Tallahassee, Pensacola	Northwest Florida
Indiana	North Central Indiana WIRED	14 counties including Lafayette	Lafayette, Kokomo	NCI
Kansas/ Missouri	OneKC WIRED Initiative	Greater Kansas City (10 Missouri counties; 8 Kansas counties)	Kansas City, MO Kansas City, KS	Kansas City
Maine	North Star Alliance Initiative	12 coastal counties in Maine	Portland, Bangor, Augusta	North Star Alliance
Michigan	WIRED for Mid-Michigan	13 counties including Lansing, Flint, and Saginaw	Flint, Lansing	Mid-Michigan
Michigan	WIRED for West Michigan	7 counties in Western Michigan	Grand Rapids, Holland	West Michigan
Montana	Montana Agro-Energy Plan	32 counties in Northeast Montana	Havre, Miles City	Montana
New York	Finger Lakes Partnership	9 counties in Upstate New York	Rochester	Finger Lakes
North Carolina	Piedmont Triad Partnership	12 counties	Greensboro, Winston-Salem	Piedmont Triad
Pennsylvania	Wall Street West	9 counties in Northeast Pennsylvania	Allentown, Bethlehem, Scranton	Wall Street West

Source: ETA website, http://www.doleta.gov/wired/regions/ and BPA/UCSD Evaluation Team

Figure 1.2
Map of Generation I WIRED Regions



The identification of which geographic areas were included in the Generation I regions also varied. Some WIRED regions were defined by existing regional identities and entities. For example, NCI, Metro Denver, Kansas City, and Finger Lakes all had existing regional alliances focused on regional economic development and growth, and built upon these in defining their WIRED regions.

State policies defined the boundaries of other Generation I regions. Michigan had already consolidated its economic development and workforce development agencies and aligned the boundaries of its corresponding intrastate regions prior to the announcement of the WIRED grants. Similarly, the North Carolina General Assembly designated the Piedmont Triad as one of seven economic development regions in the state many years ago.

Finally, new partnerships formed to apply for the WIRED funding, creating other WIRED regions. Wall Street West, WAEM, and the California Corridor are examples of this phenomenon.

Paradoxically, many of the Generation I WIRED regions were at one time rich in innovation, entrepreneurship, and market creation energy and experience. Once they had developed a high growth industry sector, however, they tended to specialize and focus on scalability and growing market share. Their strategy was to serve the existing markets they had created, rather than continuing to innovate and diversify. Much like the companies described in Clayton Christensen's book, *The Innovator's Dilemma*,[27] regions such as Rochester, Detroit, and St. Louis actually screened out competitive technologies and industries in order to focus on scaling up their existing strengths. The problem with a narrow industrial or market focus is that if market forces result in a radical change in the economy, a region can be left without a competitive advantage. Most of the regional economies that developed at the turn of the last century and prospered well into the 1970s using a strategy of focus and scale, however, turned out to be very successful indeed.

The formula worked for a moment in time. In the 1950s, Detroit was booming and, as noted earlier, Rochester had the third highest standard of living in the U.S. in the 1970s. The Piedmont Triangle region in North Carolina, as well as North Central Indiana, prospered by focusing on large manufacturing companies that had, for decades, provided significant wages and benefits to workers with minimal levels of education. Today, all of these regions share the understanding that they must change.

The WIRED Initiative offers the potential of enormous rewards, not only to participating entities, but also to the broader regional economy and business sectors. The WIRED partners are pursuing an ambitious goal: to create truly integrated, effective, and responsive workforce/ education/economic development systems to meet the needs of employers in emerging industries and job seekers aiming for high-skill training and occupational opportunities. In doing so, they have the potential to transform their regional economies, create a competitive advantage in the global marketplace through innovation, and offer prosperity to the residents of their regions. Their success can represent a boost to the competitiveness of the U.S. economy as a whole, as well as a model for continued innovative growth and competitiveness.

This report is a first look at how the 13 Generation I regions progressed in their first year since receiving WIRED funds; it represents a baseline snapshot rather than an evaluation of performance over the first year. The report documents: the conditions under which each of the regions began their journey towards transformation; the challenges they met and the opportunities that resulted from these new partnerships; and the innovative education, training, and technical assistance initiatives they enable. As the first Interim Report of the evaluation, this document fits within a larger, multi-year study design, which is summarized below.

Evaluation of the WIRED Initiative: Design Overview

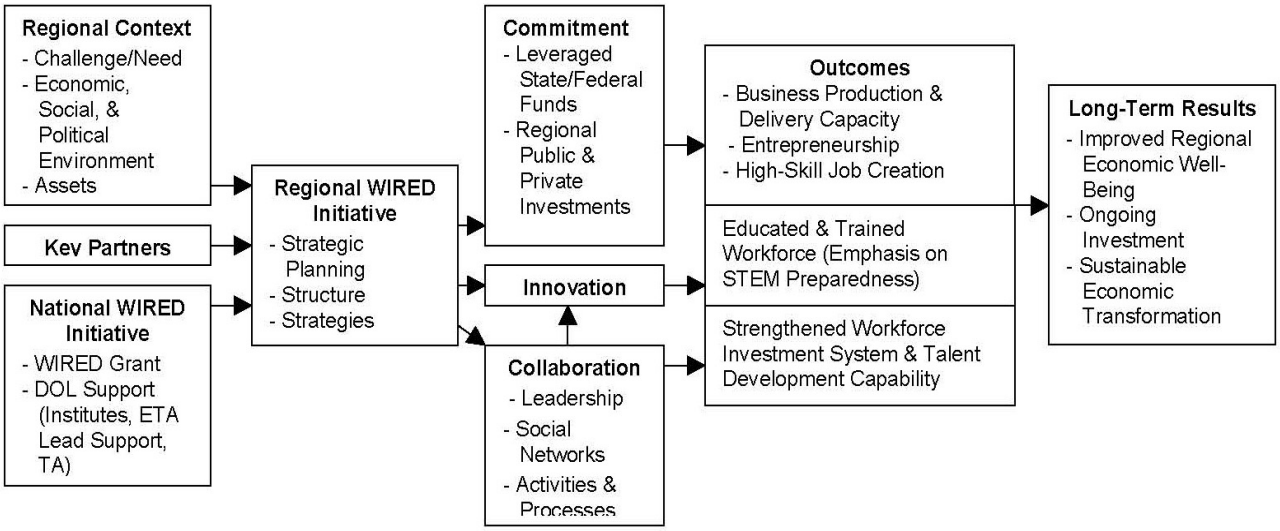
In recognition of the need to have a careful, comprehensive evaluation of the WIRED Initiative, ETA awarded Berkeley Policy Associates (BPA) and the University of California, San Diego (UCSD) a contract in October 2006 to evaluate the WIRED Initiative's 13 Generation I regions.

[27] Christensen, Clayton M. *The Innovator's Dilemma*, Boston, MA: Harvard Business School Press, 1997.

The overall objective of this evaluation is to provide a comprehensive understanding of the implementation and cumulative effects of WIRED strategies on the Generation I regions, including transformations in their regional economic and workforce investment systems. ETA is interested in learning about any systematic patterns across regions that can be discerned and about lessons that can be gleaned from the regions' experience.

The evaluation's design builds on the conceptual model presented in Figure 1.3, which outlines the WIRED regions' inputs, processes, and outcomes of interest (see Appendix B for a more detailed list of the data items associated with various components of the conceptual model). As we discuss in Chapters 1 and 2 of this report, each region's inputs include its context, the partners available to participate in the initiative,[28] and ETA's requirements, funding, and other supports. Each region develops its own processes and structures, such as strategic planning, establishing collaboration and commitment with partners, facilitating innovation, and preparing the workforce (see Chapters 3 through 5). The evaluation is examining the regions' short-term outcomes related to the operations and health of business partners, the skills of the workforce, and changes in the workforce investment system. The goals of the WIRED Initiative are long-term, however, and the evaluation is assessing leading indicators that may hint at future improvements in the economic well-being of the region and investment in sustainable economic transformation.

Figure 1.3
WIRED Conceptual Model



[28] This report distinguishes between the national and local WIRED efforts by using Initiative (with a capital "i") for the national effort and initiative (with a lower case "i") for projects and programs associated with local WIRED regions.

The evaluation's study methods include: reviewing all existing materials on the WIRED Initiative in general, and the Generation I regions in particular; conducting annual visits to the WIRED regions; conducting two surveys of WIRED partners; gathering and analyzing information from existing databases on regional economic and other factors; and analyzing information from all of these sources together. The research design is, of necessity, iterative and changeable over time, within the broad general structure originally laid out in the evaluation proposal and design report.[29]

This study is not simply an evaluation of workforce training or of economic development activities, but also a description of how regional organizations that are concerned with economic growth and building human capital come together in new social relationships through which shared goals, co-investment, and a renewed sense of regional purpose and confidence can develop. The evaluation, therefore, focuses on three critical aspects of regional economic transformation: 1) regional alliance-building across geographic and professional boundaries, along with development of a regional identity; 2) specific organizational and programmatic strategies, in terms of partners, governance, co-investment, and specific business development and workforce investment initiatives; and 3) measurable progress toward sustainable economic transformation, as indicated by outcome metrics related to regional economic well-being and workforce preparedness.

Figure 1.4 illustrates how the evaluation is collecting information to explore these three master themes. To assess collaboration, alliance-building, and development of a regional identity, the research team is analyzing documents and plans, conducting site visits and interviews, and fielding the WIRED partner surveys. The team is using the same methods to explore the specific organizational and programmatic strategies that each Generation I WIRED region is employing, and will also use information from existing databases to analyze enrollment in training or education programs. Finally, to examine regional progress toward sustainable economic transformation, the evaluation is using information from documents, interviews, surveys, and existing data sources. The remainder of this section briefly describes the design of these data collection activities, and provides a brief overview of the evaluation's timeline.

Site Visits

The evaluation team is conducting three comprehensive site visits to each of the Generation I regions, one in each grant year. Each visit consists of three to five days on site conducting interviews with key WIRED players, partners, and stakeholders, and observing the region's collaborative efforts and mechanisms in action. The site visits provide the evaluation team with rich information about each WIRED region and the initiative's partners, and qualitative data on the WIRED regions' designs, philosophical underpinnings, collaborative strategies and partnerships, staffing, implementation progress and challenges, and lessons learned.

[29] Almandsmith, Sherry, M. Walshok, et. al. *Evaluation of Generation I of the Workforce Investment Regional Economic Development (WIRED) Initiative: Design Report*, August 30, 2007.

Figure 1.4
Analytical Framework for WIRED Evaluation

Research Tools	Master Themes		
	Collaboration; Building Alliances & Regional Identity	**Specific Organizational & Programmatic Strategies**	**Progress Toward Sustainable Regional Transformation**
Qualitative: Analysis of Documents & Plans	Activities planned and documented that build collaboration and foster awareness of the region as a cohesive economic unit; media reports about region	Specific steps planned and completed that foster innovation, new business development, improved workforce education and training	Reports of new businesses started, new products and markets developed, outside funding attracted to the region, lasting changes in education and training institutions
Qualitative: Site Visits & Interviews	Respondent reports about communication and decision making, how collaboration affects their work lives; observation of the region; social network analysis showing new relationships among leaders in business, government, and intermediary organizations	Observation of meetings, visits to new or changed programs and organizations; discussions about defining and implementing various WIRED strategies	Extent of respondents' genuine optimism about the region's future, reports that outmigration of talent is slowing, reports that jobs are created and institutions are changing
Quantitative: Surveys	Awareness among "non-leader" respondents of the region and its goals, reports of collaborative efforts and effects	Strategies used to communicate and strengthen collaboration and partnerships	Optimism about economy and converging beliefs that region is "on the move;" how collaboration has affected partners' activities, practices, and policies
Quantitative: Analysis of Existing Data		Workforce Investment Act Standardized Record Data (WIASRD) enrollments, education data (especially STEM) on achievement and graduations, numbers of faculty	Patents obtained, venture and angel capital attracted, research and development activities; entrepreneurial activity and small business innovation research (SBIR)[30] funding; data on accountants, lawyers, banks; unemployment, labor force participation and average wage by industry; poverty rates and average household income; payroll

Source: BPA/UCSD Evaluation Team

[30] The Small Business Innovation Research (SBIR) Program is a highly competitive award system which provides small businesses with opportunities to propose innovative ideas that meet the specific R & D needs of the federal government.

The evaluation's site visit data collection strategies are tailored to fit each WIRED region and project. Variations across regions mean that the number and types of individuals to be interviewed on site will vary, and that different types of secondary data will be available in—and appropriate for—different WIRED regions.

Site visits during the first year of the evaluation addressed collaboration, building alliances, and building a regional identity. Interviews explored the development of the original grant proposals and the regions' priorities for their WIRED grants. Interviews with respondents also clarified partnership structures, partner roles, and relationships; and reviewed specific activities initiated under WIRED. During the second round of visits, interviewers will delve into more specific organizational and programmatic issues. Interviews during this visit will collect up-to-date information about: specific steps that foster innovation, new business development, and improved workforce education and training services; implementation successes and challenges to date; and changes in structure and/or activities. The final round of site visits will focus on assessing progress toward sustainable economic transformation. The evaluation team will explore the influence of WIRED on the regional community and its service systems, how project staff measure outcomes and impacts, and the ongoing sustainability of each region's efforts.

Surveys

The evaluation team will survey staff at all levels in WIRED partner organizations and agencies to understand how roles and responsibilities in collaborative networks are distributed across staff at different levels of partner organizations, and to understand better how collaboration affects practices among the collaborating organizations. The surveys will supplement the information gathered from the regions during site visits by asking a large number of individuals at different levels within the participating organizations to report on the nature and effectiveness of collaboration efforts. The first survey will be drafted after the first round of site visits has been completed, and conducted in 2008. The research team will conduct a second, follow-up survey during 2009, asking questions similar to those included in the first survey in order to assess changes over time.

Survey results will allow the evaluation team to document collaboration systematically and to measure it across various dimensions such as: level of investment, engagement, and commitment; changes in operations; number and types of individuals involved; new partnerships or social networks; and roles and responsibilities across and within collaborating organizations. The survey will be a short questionnaire, designed to be administered through multiple methods (online, mail, phone), and completed by the individual respondent. This approach will keep the response burden to a minimum while ensuring consistency of data across respondents.

The sample for the survey will include individuals serving in a range of roles within partner organizations and other key stakeholders in the regional collaboratives. While the size of the survey sample will vary depending on the complexity and make-up of the regions, and of the collaboratives within each region, the evaluation team anticipates identifying at least 25 partner or key stakeholder organizations and a total of at least 50 individual respondents in each region. In some regions, the number may be far larger.

The evaluation team will aggregate responses from the survey sample in at least three ways to address specific research questions. Analyses will group responses by 1) the respondents' organizations, 2) WIRED region, and/or 3) the national level.

Analysis of Extant Data

The final data collection method for the evaluation is analysis of existing databases, both to describe demographic, economic, educational, and workforce factors in each region and to assess changes over time in relevant factors, in order to impute the influence of WIRED in the region. The evaluation team is using national data sources to identify a set of common outcome indicators across the regions. Region-specific indicators designed to capture the objectives and strategies outlined in the implementation plans of individual regions will supplement the common outcome indicators. The data sources go beyond the common measures for federally funded employment programs—job placement, job retention, and workers' earnings growth—to document educational outcomes, talent development, changes in innovation capacity, and the existence and growth of a receptive business support infrastructure underpinning the WIRED regions' enterprise development activities.

The list of potential outcome indicators that the evaluation will use is large because the WIRED implementers are aiming to accomplish a complex array of project activities aimed at a variety of different aspects of regional economic transformation. These indicators and outcome measures fall into five broad categories. All of the regions will be evaluated on these categories, which include:

- Workforce outcomes;
- Educational/talent development outcomes;
- Innovation capacity changes;
- Changes in existing business support infrastructure; and
- Characterization of new social and collaborative networks that are established.

In addition, the evaluation is using data on characteristics and demographics of the regions that serve as context for understanding and interpreting the outcomes.

Some indicators may be more useful for some regions than others, particularly when they are appropriate to the region's goals. For instance, some regions have developed activities that actively engage with K-12 school districts, while others are emphasizing entrepreneurship and business creation. As the evaluation proceeds, the research team will continue exploring additional data opportunities (and constraints) to enhance documentation of progress in the various regions.

Since system-building is by its nature a long-term investment, the true impact of the WIRED Initiative is not likely to manifest within the time frame of the evaluation, especially in light of some of the data sources identified for analysis. Many educational data sources are updated on an annual basis; consequently the evaluation team may have, at most, three or four data points (i.e., 2006, 2007, 2008, 2009) from which to draw conclusions. Thus, the evaluation's analysis

is designed to take advantage of as many outcome indicators as possible, so that implications can be drawn by using triangulation. The larger the number of indicators that show trends in the same direction, the more certain the research team will be that the evaluation has captured the change that is occurring, even if the data available for a given indicator may be scant.

Social Network Analysis

As described earlier, a key component of the WIRED model is the development of partnerships and working relationships that foster collaboration among key players from the workforce investment, economic development, and education systems, as well as community leaders and other key stakeholders. The evaluation's social network analysis is based on the hypothesis that regions that build strong, thick networks will be more competitive in the new economy than those with more diffuse networks. By mapping these networks, the evaluation team can better understand the connections of which they are made, and their overall strength.

The evaluation is collecting social network data through both the site visits and the surveys. Data collection consists of asking respondents to identify individuals with whom they have significant contact in the context of the WIRED initiative, along with key information about the characteristics of those collaborators. These characteristics include the type of collaborating organizations, individuals' level of responsibility within the participating organization, frequency of contact, geographical location, and nature of the contact.

Social network analysis uses simple descriptive statistics to summarize the nature and frequency of contacts between individuals in the social networks, and then uses specialized analysis tools that map those relationships graphically. The social network map (sometimes called web or net) is used to display key features of the regional networks such as strength of relationships, centralization, centrality, and betweenness, as well as providing visual images of the types of organizations and the levels within those organizations where most interaction is taking place.

Evaluation Timeline

Analysis of data from existing databases will be ongoing throughout the rest of the evaluation's contract period. During 2008, the evaluation team will conduct a second round of site visits, as well as the first survey of WIRED partners and stakeholders. The second of the evaluation's two Interim Reports, due toward the end of 2008, will summarize findings from these data collection activities. The evaluation team will visit the Generation I WIRED regions a third time and conduct a second survey of the regions' partners during 2009. The evaluation team will submit the Final Report late in 2010.

The original three-year WIRED grant period is an extremely short timeline to affect regional economic transformation.[31] Although the evaluation's study period extends 15 months beyond the end of the Generation I grants, changes in the regional economies resulting from WIRED may take ten years or longer to happen. Thus, the evaluation is designed to be sensitive enough

[31] Due to delays associated with start-up, in April 2007 ETA extended the period of performance for the Generation I WIRED grants through January 31, 2010.

to detect relatively small effects that represent indicators of progress in each region, and the study's Final Report will assess the progress that the regions have made toward transformation during the period of the WIRED grants.

Report Content

This first Interim Report presents information about the baseline status of the Generation I WIRED regions, as well as their early implementation of WIRED activities through the time of the evaluation's first site visits in July, August, and September 2007. This first view of the Generation I WIRED regions is based on a detailed review of the goals and implementation plans of each of the 13 regions; site visits to all regions; and analyses of extant data on each region relevant to their WIRED goals and plans. The subsequent chapters of this report describe observations from these activities:

- Chapter 2 describes the context and goals of the Generation I WIRED regions;
- Chapter 3 presents information on WIRED structures, communications, and collaboration in each of the 13 regions;
- Chapter 4 summarizes the implementation of WIRED activities, funding, and metrics of the Generation I regions;
- Chapter 5 provides an introduction to the evaluation's social network analysis of the communications and partnerships developed between the WIRED partners in each regional collaborative;
- Chapter 6 discusses the evaluation's quantitative measures of progress at baseline for the Generation I WIRED regions; and
- Chapter 7 presents an analysis of patterns and trends in the factors that contribute to progress and success across the 13 regions, and discusses the evaluation's next steps.

Appendices to this report include:

A. Site Visit Highlights from Generation I WIRED Regions;

B. Data Items for WIRED Conceptual Model;

C. Generation I WIRED Regional Development Goals;

D. Measures of Success;

E. Social Network Analysis Data;

F. Data Book on Generation I WIRED Regions; and

G. Trends in Workforce and Innovation Measures for Generation I WIRED Regions.

Chapter 2: Context and Goals of the Generation I WIRED Regions

This chapter provides background for understanding the implementation of the first generation of the WIRED Initiative and provides a description of the regions' starting points. The chapter first discusses the context of the WIRED Generation I regions including: the local needs they are addressing; history of economic activity; innovation and entrepreneurship assets and gaps; the diverse jurisdictional boundaries and history of interagency collaboration; the extent and nature of existing regional identity; and the important social values, cultural values, and traditions that affect the ways in which regions define problems and pursue collaborative relationships. The chapter then looks at how this local context has shaped the key economic, workforce, and educational systems transformation goals that regions are addressing.

Context of WIRED Regions

As mentioned in Chapter 1, one of the challenges and opportunities of this evaluation is the tremendous variation in the characteristics of the participating regions. First, the Generation I WIRED regions vary significantly in their geographical reach and the character of their urban to rural mix. Some regions (e.g., Finger Lakes, Kansas City) are attempting to balance traditional urban and suburban economic development workforce issues with the challenges of rural development and renewal. Other regions (e.g., the California Corridor) represent what the literature today refers to as "mega-regions" because they traverse hundreds of miles and multiple jurisdictions.[32] Some regions are a collection of small metropolitan centers surrounded by rural geography and economies; West Michigan, Wall Street West, and the North Star Alliance fall into this category. Some of the regions (such as Montana and WAEM) are primarily rural regions where natural resources have been the basis of their economy for decades.

In addition, the Generation I WIRED regions are diverse in terms of: 1) the specific needs of regional economies that WIRED is designed to address; 2) regional assets and gaps; 3) the particulars of local political and jurisdictional boundaries and policies; 4) readiness for WIRED, which includes several factors such as the existence of interagency collaborations and development of a regional identity; 5) the extent to which leadership, civic institutions, and private funders have become involved in economic development and workforce investment; and 6) the extent to which social and cultural values are congruent with the requirements of economic transformation. These factors are discussed below.

[32] Florida, Richard. *Who's Your City?: How the Creative Economy Is Making Where to Live the Most Important Decision of Your Life*, New York: Basic Books, 2008.; also Florida, Richard, T. Gulden and C. Mellander. "The Rise of the Mega-Region," October 2007, http://creativeclass.typepad.com/thecreativityexchange/files/florida_gulden_mellander_megaregions.pdf

Regional Needs Addressed by the WIRED Initiative

While the 13 WIRED regions represented in Generation I are quite diverse, they share a sense that business as usual can no longer assure long-term prosperity. The usual business at the regional level, and the challenges that need addressing, are highly variable across the regions, however. Although the overall intent of WIRED—to increase global economic competitiveness—results in most regions addressing at least some related economic development and talent development themes, across Generation I, WIRED partners are focusing on a range of specific local needs, including:

- Moving from a once-competitive old economy industrial base to advanced manufacturing capabilities supportive of knowledge-rich industries and high-wage jobs;
- Creating new globally competitive industry clusters characterized by knowledge-rich content and high-wage jobs;
- Improving the international competitiveness of the region's supply chain by developing smart supplier strategies that support manufacturers, small businesses, and entrepreneurs in adapting to global markets;
- Leveraging research and development (R&D) resources more effectively, including investing in both financial and intellectual capital;
- Integrating previously marginalized workers into the 21st century workforce by helping them develop the skills and competencies essential to knowledge-based industries;
- Building a culture of innovation and entrepreneurship and developing a support infrastructure that aligns resources, enhances knowledge, accelerates linkages, and integrates support across domains and jurisdictions throughout the region;
- Developing a strong pipeline of youth in transition from school to postsecondary education and vocational training through strengthening science, technology, engineering, and math (STEM) education;
- Strengthening both the talent development and innovation capacity of universities and other research and educational institutions;
- Creating a living and working environment that supports attracting and retaining (minimizing out-migration) skilled and well-educated young workers;
- Upgrading the skills of the local workforce, particularly incumbent workers within target industries and workers with relatively low educational levels who seek to shift to new industries; and
- Improving the ability of industry, education, and the workforce investment system to work together to identify needs on an ongoing basis as they evolve in the region over time.

As an example of the specific local focus of the regions, Metro Denver's WIRED Initiative is focusing on solving the "Colorado paradox." Denver ranks as a leader in high technology sectors, including the information technology, aerospace, bioscience, and energy industries. This, coupled with the area's quality of life amenities, has attracted a pool of highly educated professionals from around the country, ensuring a qualified and diversified workforce. At the

same time, native Coloradoans lag behind the nation in high school graduation rates, college attendance, and science and math skills.

Both Michigan regions are challenged by the need to address the state's long-term dependence on what is now a declining automobile industry. A decline in large manufacturing firms and suppliers along with the low educational attainment of an aging workforce were the impetus for the North Central Indiana's (NCI) WIRED grant proposal. Similarly, the most notable factor dampening the economic health of the Piedmont Triad region is the decline of legacy manufacturing—furniture, tobacco, and textiles—for which global competition (and for the tobacco industry, declining numbers of U.S. smokers) has caused huge layoffs.

California's economy is currently still quite strong, but a shortage of technical workers contributes to the California Corridor's higher than average unemployment rate. Communities included in the region are both those that have the greatest intellectual, R&D, high technology, and innovation assets, and those being hit the hardest by limitations in available talent. Kansas City cites the need to replace workers in a variety of occupational areas because of retirements or turnover in the next few years.

Several other regions, including Montana, Wall Street West, the North Star Alliance, and West Alabama/East Mississippi (WAEM), have also recognized the impact of an aging population. These regions are also experiencing brain drain as young people migrate to other labor markets either for or after college. Attracting a skilled workforce to these regions is difficult because of the perceived lack of job opportunities.

Regional Assets and Gaps

A critical component of the context in which the WIRED regional initiatives are taking place is the availability of resources within the region to support business and market development, innovation, lifelong learning, and talent development. The regions draw on different types of assets and face different challenges or resource gaps in implementing WIRED. Figure 2.1 offers a few highlights of the Generation I WIRED regions' assets and gaps.

The gaps summarized in the figure further illustrate both the variation across regions and the commonality of need for both economic and talent development in all of the regions. The assets summarized reflect the wide diversity of strengths and resources that the regional WIRED initiatives are building on as they work toward addressing their specific needs.

Relevant Policies and Jurisdictional Issues

Important contextual issues influencing how quickly and effectively individual regions are able to implement WIRED include the existing relationships between state economic and workforce investment agencies, state and local policies regarding local workforce investment and economic development regions, and even federal policies directed at a targeted industry. Jurisdictional issues are also important, as two of the 13 regions cross state lines, and most involve multiple counties which hope to align rural and urban economies in new ways. In many regions, decisions, resource approvals, and performance monitoring involve many units of government

Figure 2.1: Regional Assets and Gaps

Generation I WIRED Region	Assets	Gaps
WAEM	Community colleges strong in workforce development; existing relationships between government officials, college presidents, business community, and other potential partners; high degree of motivation to achieve economic growth	Slow economic growth; lack of an industrial base; need for workforce training and certification in high skill jobs; need for education in STEM and other fields leading to employment
California Corridor	History of innovation; strong technology and aerospace industries; strong R&D resources including major universities and federal labs; space industry strategic plan	Shortage of technical workers; off-shore manufacturing and global competition are contributing to a negative trade balance
Metro Denver	Thriving technology sector; strong regional identity; strong mayoral leadership	Low high school completion and college enrollment rates and inadequate STEM pipeline, particularly in K-12 education
Northwest Florida	Strong existing regional identity; existing partner network (membership of parent organization); political champions for WIRED-related goals; existing collaborations between parent organization, regional consortium of WIBs, local economic development organizations, business/industry	Non-diverse economy; lack of infrastructure (especially housing, transportation); brain drain; high cost of living/ low income jobs; need for STEM and other pipeline talent
NCI	Major research university (Purdue); reorganized workforce system focused on business needs	Decline in large firms and suppliers; low education; aging workforce; brain drain
Kansas City	Strong civic leadership; many resources in animal health and biotechnology; regional identity and history of collaboration among industry and economic development across state lines	Poorly coordinated training resources; little history of public sector collaboration across state lines
North Star Alliance	Small state; a lot of players already knew each other; world class composites expert; strong industrial history; strong regional identity	Transportation challenges; lack of adequately trained workers; brain drain
Mid-Michigan	Pre-existing statewide initiatives combining workforce and economic development; strong civic and foundation support; pre-existing involvement of research universities in technological solutions; high degree of motivation to address state's economic problems	Dramatic decline of auto manufacturing (GM) and related industries; brain drain
West Michigan	Pre-existing statewide initiatives combining workforce and economic development; pre-existing leadership; good infrastructure and transportation; proximity of large metropolitan areas (Chicago, Detroit)	Difficulty attracting and retaining young workers; past over-dependence on auto industry, and heavy manufacturing; brain drain
Montana	Entrepreneurial, independent spirit; highly motivated; SWOT analysis, Gubernatorial support, reorganization of local WIBs into a single state WIB	Limited R&D capacity; transportation challenges; declining population
Finger Lakes	Legacy of business vitality; good links between workforce and business; regional name brand recognition	Over-reliance on now-declining businesses discourages entrepreneurship; lack of unified vision among rural/urban partners
Piedmont Triad	Airport in region becoming a new FedEx hub; pre-existing regional identity and organizational structure; recently-developed strategic plan for economic development	Loss of jobs due to global competition; manufacturing legacy in which education is not valued
Wall Street West	Unique geography (proximity to NYC with sufficient separation from NYC infrastructure), fitting federal specifications for Wall Street backup operations; some prior collaboration at sub-regional level	Regional boundaries combine three very disparate areas with a history of competition; brain drain

Source: BPA/UCSD Evaluation Team interviews, site visits, and document review

and sometimes multiple layers of sign-offs. In other regions, a single institution or agency has been vested with wide-ranging authority and responsibility.

In those regions where geographic and economic boundaries are congruent, where economic development and workforce investment collaborations were already in place, where a shared strategy had already been developed prior to the WIRED award, the timing and character of outcomes is likely to be different than in those where connecting geographies and functional units or developing a shared strategy are just beginning. Evaluation of progress toward goals in a given region must take these jurisdictional and policy factors into account. In some instances they have facilitated the WIRED process, in others they are essentially irrelevant, while in a few instances they have represented serious challenges to be resolved. For example:

- Prior to award of the WIRED grants, Michigan's Governor had already consolidated the state's economic development and workforce investment agencies around the theme of the 21st Century Jobs Challenge. This effort identified strategic economic clusters and regional platforms that could potentially compensate for the loss of traditional industrial jobs. Drawing from $1 billion in state tobacco settlement funds, Michigan had already initiated a process to award combined economic development/workforce training grants to regions.
- At the time that the WIRED Initiative began, the NCI WIRED region consisted of two local workforce areas. Based on research about economic conditions, labor markets, and commuting patterns conducted by the Governor's Office, Indiana's Department of Workforce Development combined these two local workforce areas into a new state workforce region in July 2006. While the research data showed that these 14 counties comprised a region on paper, prior to WIRED these 14 counties had never before functioned as an integrated regional unit.
- County governments in Maine have limited political power (their role is limited to law enforcement and the courts), resulting in one less layer of governmental involvement and jurisdictional issues in the North Star Alliance's WIRED initiative, and making collaboration with state and municipal agencies a little easier than in other regions. The state has strong support for business cluster development as evidenced by the Governor's appropriation of $2.5 million for cluster development for 2008. Also, deadlines associated with the Clean Air Act have created an urgent need for training of new and existing employees in the region's target industry.
- Just as the WIRED Solicitation for Grant Applications (SGA) was released, the eight local Workforce Investment Boards (WIBs) in the nine-county Denver region created a Metro Denver Workforce Board to foster collaboration among the independent WIBs. On the other hand, strong local control of K-12 school districts is protected by the Colorado constitution, which may prove to be a barrier to developing consistent STEM curricula for the region.
- The Wall Street West region was overlaid on nine counties, four labor markets, five local workforce areas, and three regional economic development councils; it is a patchwork of two previously-defined economic development sub-regions and two outlying counties. The sub-regions have very different economic histories and populations. The five local WIBs had little history of working together. Two of the multi-county Economic Development Associations in the area were in direct competition with each other and with economic development organizations in surrounding counties.

- The Kansas City region has encountered challenges in creating a true regional identity across state lines. These include legislators' political concern that "their" resources not benefit the other state, competition to attract businesses to relocate across the state line, and the simple fact that each state has a different list of qualified training providers for WIA customers.
- The different agency arrangements and policies of Alabama and Mississippi governments make collaborating across the state line extremely difficult. The workforce investment systems in Alabama and Mississippi differ greatly in structure and administration. Collaboration among the community colleges in the two states is equally complicated. The Alabama community college system is state-run, under a strong Chancellor, while colleges in Mississippi are locally run, with state coordination.
- During Fiscal Year 2002-2003, the California state legislature eliminated the Technology, Trade and Commerce Agency and divided its functions across various governmental departments. After his election, Governor Arnold Schwarzenegger charged three State agencies (Labor; Agriculture; and Business, Transportation, and Housing) to work together at the state level to serve as a "virtual" economic development agency.

Taken together, these and related challenges and assets form a complex patchwork of conditions for the implementation of WIRED in Generation I. Individually, they affect each region's readiness to undertake the Initiative.

Readiness for WIRED

In his widely-read bestseller, *The Tipping Point*, Malcolm Gladwell addresses the factors that enable major social change to occur at epidemic speed once they reach a tipping point. Gladwell states that "What must underlie successful epidemics, in the end, is a bedrock belief that change is possible, that people can radically transform their behavior or beliefs in the face of the right kind of impetus." The early catalytic influence of the WIRED Initiative is characterized by the regional leadership who believe change is possible.

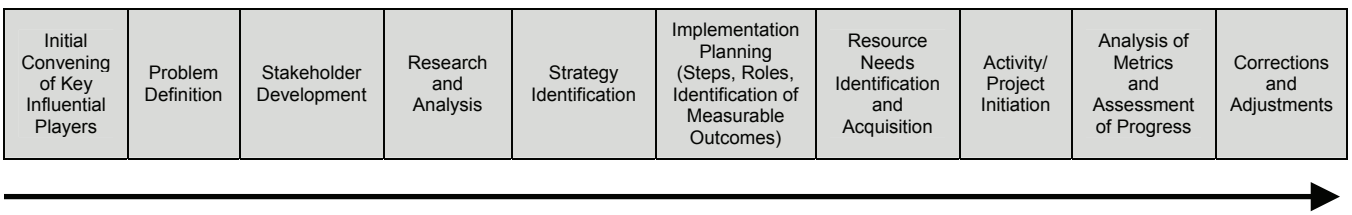
Factors that influenced the regions' readiness for WIRED include the kinds of workforce and economic development efforts already underway, the collaborative relationships already in place, and the extent to which regions had already identified themselves as a region geographically, economically, politically, and culturally. In addition, the character of regional leadership and civic engagement with economic development and workforce issues influenced the readiness of Generation I regions for WIRED. Finally, the local culture, based on decades of social and economic history, may also have contributed to the region's readiness for change. These factors come into play shaping how people recognize, define, and ultimately act on what is most needed for economic transformation to occur in their region. The readiness factors are explained in detail below.

Pre-existing Regional Efforts to Address Needs

Regions vary dramatically in the extent to which each had engaged in analytical, planning, and collaborative strategies prior to participating in the WIRED Initiative. The evaluation team classified such pre-existing regional efforts along a continuum of activities showing how a

community moves from an early recognition of the need for change to a fully developed set of actions and agreed upon metrics. Figure 2.2, below, illustrates this continuum.

Figure 2.2
Continuum of Stages in WIRED Initiative Implementation



Source: BPA/UCSD Evaluation Team

As the figure suggests, regions in which: 1) key players were already at the table; and 2) significant problem identification, research and analysis, and strategic planning had already taken place prior to WIRED, were at a very different starting place than those that were still convening key partners to identify regional needs at the beginning of their initiatives. Some regions had already taken many of these steps prior to WIRED. For example:

- Prior to the WIRED Initiative, Montana's Governor's Office had completed the first phase of strategic planning to support growth by conducting a SWOT analysis (i.e., analysis of strengths, weaknesses, opportunities, and threats) for the state's economy, and identified bio-energy as a target industry for growth in the state.
- Through its California Regional Economies Project, the California Economic Strategy Panel researched regional economies across the state and published a series of reports describing nine economic regions, industry clusters, and cross-regional economic issues. The California Space Authority developed the first-ever California Space Strategic Plan in 2004 and updated the plan in 2007, bringing together statewide aerospace stakeholders from public and private entities in all three sectors of the industry: commercial, civil, and national security space programs.
- A region-wide study by an outside consulting firm culminated in the publication of the Regional Vision Plan for the Piedmont Triad region. Many of the goals and strategies adopted by the region's WIRED initiative grew out of this Vision Plan, and the process has given legitimacy to the initiative's goals and activities.

Pre-Existing Partnerships and Collaborative Efforts

Generation I WIRED regions differ significantly in the extent to which they build on partnerships and collaboration efforts that were already in place prior to the initiative. In several regions, potential WIRED stakeholders had virtually no history of interacting with, much less partnering with, other WIRED partner organizations. WIRED partners in the Piedmont Triad

region, for example, shared more of a history of competition than collaboration. Mid-Michigan partnerships included three geographically and organizationally separate groups that were brought together for the purpose of preparing the WIRED proposal, many of whom were now working together for the first time.

In other regions, key leaders had already formed close working groups. Their challenge has been to create buy-in among those not previously involved. For example:

- In Finger Lakes, WIRED partners from the Rochester area had a long history of working together, while partners from the surrounding rural counties are not yet fully engaged in WIRED.
- Regional development and community college partners in the WAEM region led the WIRED proposal effort, while local workforce investment agencies have yet to become meaningfully involved as partners.
- Contributors to the Wall Street West WIRED proposal included a group who had strong professional connections, many of whom had served on each other's governing boards.
- Florida's Great Northwest was established a decade ago in recognition of the regional collaboration and strategic alliances among businesses and economic development interests that were necessary for the economic advancement of the 16-county region. Many of the current members of the coalition for the WIRED Northwest Florida Initiative had been involved in collaborations and partnerships facilitated by Florida's Great Northwest for a number of years prior to WIRED.
- The Alliance for Innovation in Manufacturing-Kansas City (AIM-KC) provided Kansas City WIRED with an established network of collaborative partners, as well as a program manager. Another factor that facilitated collaboration between workforce and economic development in the Kansas City region is that in both Kansas and Missouri, workforce investment services are in the same state agency as economic development.

Pre-Existing Regional Identity

Very few regions came into WIRED with a pre-existing regional identity; many of the regions represent geographic and agency alliances that had not been in place prior to WIRED. Finger Lakes and Kansas City were pre-existing brands, albeit not yet inclusive of the full set of WIRED regional partners. The 12-county Piedmont Triad region is well established; it was designated many years ago by the North Carolina General Assembly as one of seven economic development regions in the state. Metro Denver was starting to create regional partnerships just as WIRED was beginning. Most of the Generation I WIRED regions, however, represent newly created alliances of geographies, agencies, and industries that heretofore operated separately. Even in those cases where government or civic groups had agreed in advance to these new alliances, branding issues were central concerns. For example:

- Kansas City is a natural metropolitan region that has existed as a bi-state regional economy for a very long time. Although the state line can be a political barrier, economically, the metropolitan area has a long history of operating across the state line.

- The Coastal Maine counties covered by the North Star Alliance share an identity as a summer vacation destination. The region is building upon this reputation to brand themselves as the source of Maine-built boats.
- The California Corridor still does not consider itself a single region, except in the context of its WIRED initiative. Geographically, the region is a patchwork that includes several of the nation's leading cities, along with rural counties and areas with economies centered on activities as diverse as tourism, technology, military bases, and agriculture.

Leadership and Civic Engagement

Similarly, prior levels of leadership commitment and civic buy-in for economic transformation, especially across new geographies and in new industrial sectors, varied across regions. For example:

- Denver's Mayor John Hickenlooper led the reorganization of municipal economic and workforce development departments to emphasize collaboration and integration.
- Montana's Governor Schweitzer has focused the state's economic development efforts in two directions: 1) energy development; and 2) value-added agriculture. The governor's involvement and commitment facilitated the WIRED initiative's implementation by providing a well-publicized framework in which the initiative could form partnerships with both state agencies and businesses.
- Prior to the WIRED Initiative, Michigan's Governor Granholm had already consolidated the state's economic development and workforce investment agencies around the theme of the 21st Century Jobs Challenge. This effort identified strategic economic clusters and regional platforms that could potentially compensate for the loss of traditional industrial jobs.

Cultural Issues

The regions' social and cultural histories affect their orientation to contemporary challenges as well as their actual capacity to act in new ways. As site visit respondents said in regions such as Finger Lakes and the Piedmont Triad Partnership, "entrepreneurship and risk-taking have been bred out of us." In other regions, manufacturing jobs in shipbuilding and the auto and steel industries, which didn't require high educational attainment, were so plentiful and well paid that much of the local population saw a college education—or even high school graduation—as simply unnecessary.

Thus, a region's culture represents an important part of the context for WIRED. Culture is a powerful ally or adversary in transformative efforts. It involves the tradition, values, attitudes, expectations, and behavioral standards that people bring to their understanding of change. Culture also affects how readily institutions and citizens can adapt to new imperatives and conditions. Respondents from several regions offered examples:

- If a supplier of automobile components always serves local customers, the supplier may have to learn many new things about customers and markets outside of the state—or in Europe, or in Asia—if the company needs or hopes to expand its market into those areas.

- Parents and grandparents who built successful, prosperous lives as high school dropouts in traditional manufacturing jobs may have difficulty helping their children and grandchildren see the value of an advanced education, especially in fields such as math and science.
- Attorneys, bankers, and marketing professionals who are accustomed to serving large corporations may have to learn not only the skills but the culture that supports nimble, entrepreneurial business entities and affects their decision-making.

Interviews across the 13 regions uniformly included references to the need for cultural and attitudinal changes, in addition to shifts in economic strategies and approaches to workforce investment. Many WIRED regions have included in their implementation plans activities aimed at shifting a particular mind set among residents to transform their economic base. The Generation I regions have identified several basic categories of cultural changes needed for success. Building an entrepreneurial culture is central to some regions; thinking globally is key for others; and in still others, increasing the perceived value of education and training is critical to building a new, competitive workforce. Finally, building a culture of collaboration is a mindset identified as an important need in most regions.

A Typology of Readiness for WIRED

Looking across all of these aspects of the regions' readiness for WIRED—including any pre-existing projects or programs to address the region's needs; pre-existing partnerships and collaborative efforts; whether or not the region had a regional identity before the WIRED grant began; leadership and civic engagement; and positive or negative cultural issues—reveals that a few regions were indeed fairly far along in their readiness to move forward with regional economic transformation at the time ETA awarded the WIRED grants. Metro Denver, Northwest Florida, and West Michigan began their WIRED activities with existing partnerships, organizational structures, and projects in place. For these regions, WIRED is accelerating efforts that were already underway. Seven other regions (California Corridor, Mid-Michigan, Kansas City, NCI, North Star Alliance, Finger Lakes, and Piedmont Triad) had either strong existing regional identities or partnerships, or projects on the drawing board. WIRED support is enabling these regions to jumpstart strategies and projects that had been in the planning stage. Finally, three regions (WAEM, Montana, and Wall Street West) were just beginning to think about regional collaboration at the time the WIRED Initiative began. In these regions, WIRED has launched a new effort toward regional collaboration focused on economic transformation. As shown in Figure 2.3, each region falls within one of these readiness categories, in terms of the range and intensity of efforts being *accelerated* by WIRED, *jumpstarted* by WIRED, or initially *launched* by WIRED. The figure also provides a brief summary of the factors that influenced each region's readiness category.

These different starting points should prove to be an important factor influencing the overall success of the WIRED effort as each region moves toward measurable outcomes. Chapter 7 explores how a region's readiness for WIRED appears to have influenced the early implementation of the Generation I initiatives.

Figure 2.3
Readiness for WIRED

WIRED Readiness Categories	Generation I WIRED Regions	Readiness Factors
Accelerated by WIRED Pre-existing/on-going projects that were scaled up and expanded under WIRED	Metro Denver	Strong industry clusters already competitive; identified and funded pre-existing pipeline programs; conducted research to learn about workforce regional identity; regional organizations
	Northwest Florida	Regional identity, structure, and strategic plan already in place; pre-existing partnerships; many existing projects in the region expanded or augmented with WIRED funds
	West Michigan	Many projects already underway; pre-existing regional identity; organizational structure in place
Jumpstarted by WIRED Pre-existing concepts and project ideas that were refined and implemented under WIRED	California Corridor	WIRED builds on strategic plan developed by California Space Authority and on pre-existing partnerships
	Mid-Michigan	Prior and ongoing initiatives of Department of Labor and Economic Growth, universities, and Mott Foundation; three communities, each with their own regional identity, combined into one; some existing projects included in WIRED plans
	Kansas City	WIRED builds on pre-existing regional identity with OneKC campaign already underway; builds on pre-existing partnerships
	NCI	Not a region before, but ideas already in place; workforce system had been reorganized; background research had already been done; key industries' workforce needs already identified
	Finger Lakes	Pre-existing region defined by tourism and state agencies; but little shared sense of identity or ownership of challenges or solutions; some prior studies of assets and gaps by counties; limited involvement or collaboration with City of Rochester
	North Star Alliance	Limited prior collaboration; regional identity primarily tourism; no projects in place; some ideas to build on
	Piedmont Triad	Strong pre-existing regional identity but considerable competition among city/county level economic development entities; limited prior collaboration; pre-existing organizational structure; recently-developed strategic plan for regional economic development
Launched by WIRED New projects that were defined and implemented under WIRED	WAEM	Little regional identity; very few existing projects of this type; some prior regional development efforts and initiatives that crossed state lines; community colleges in both states strong in workforce training but not collaborative
	Montana	Limited prior collaboration; no pre-existing regional identity; Governor support of business cluster; SWOT analysis and selected target industry prior to WIRED
	Wall Street West	Existing, relatively well-defined concept with visible state support and local champions; no existing regional identity; limited prior collaboration

Source: BPA/UCSD Evaluation Team

Regional Goals for Transformation

Regional goals also vary because of the distinctive economic and social histories of each region. Whether it is shipbuilding in Maine, growing wheat in Montana, furniture building in Western Michigan, auto manufacturing in Mid-Michigan, or the aerospace industry in California, over time, regions develop particular capabilities supporting their core economic activities. The goals of each of the Generation I WIRED initiatives reflect how the regions have chosen to address changes in demand for their core economic capabilities, and how the regions plan to redirect those capabilities for renewed prosperity. The Generation I WIRED regions have adopted goals that target specific industries as engines for economic growth. Most of the regions are working with businesses in one or more of the following industries: advanced manufacturing; bio-energy; bioscience; health care; agribusiness; and information technology (see Chapter 4). Additionally, several regions focus on unique industry clusters such as finance, construction, animal health, aerospace, logistics/distribution, and creative arts.

Beyond focusing on specific industry sectors, however, the purpose of WIRED is to increase the regions' capabilities to respond to significant global economic challenges. The Generation I regions have chosen specific objectives that cluster under three distinct but interrelated categories of goals:

1. **Workforce Investment –** including goals such as:
   - Creating quality, high-skilled jobs;
   - Assessing and addressing labor needs and worker skill gaps;
   - Retaining workers in the region;
   - Creating a high-skilled workforce;
   - Providing entrepreneurial training;
   - Increasing knowledge of global competitiveness;
   - Increasing graduation rates;
   - Training teachers (K-12); and
   - Mentoring high school math and science students.
2. **Economic Development –** including goals such as:
   - Increasing innovativeness;
   - Increasing competitiveness;
   - Identifying, assessing, and aligning regional resources;
   - Adapting to global manufacturing transformation;
   - Developing toolkits to assess sustainability and replicability of models;
   - Expanding current markets and creating new ones; and
   - Increasing investment from external sources.
3. **Social and Community Development –** including goals such as:
   - Building new organizational relationships;
   - Increasing a support network;
   - Creating and adopting a regional identity and mindset;
   - Changing employment expectations;
   - Creating a leadership structure;
   - Creating collaboration across business, education, and government sectors;

- Creating broad community engagement; and
- Creating an entrepreneurial culture.

Appendix B provides details on which regions have adopted each type of goal.

This range of goals provides insight into the ways the Generation I WIRED regions are redefining economic prosperity. In addition, the goals underscore the extent to which regions are recognizing and grappling with the important cultural and social dynamics that affect the manner and extent to which they can renew or build prosperity in the face of rapid changes in technology and the global business environment.

What is even more interesting about the regions' goals is the extent to which major themes relevant to capacity-building, leveraging assets, and transforming community expectations are unifying issues across all program and project goals in many regions. This suggests that at least some regions have a more systemic and integrative view of their challenges and opportunities, and that they recognize the range of attitudes and practices that must change for sustainable transformation to occur. Regions with such comprehensive, integrative approaches may be more successful in achieving measurable transformation over the next few years than regions with a more fragmented approach to goals.

For example, many regions are concerned with the issue of attracting and retaining high value-added skills and industries. Some WIRED initiatives address this issue exclusively through workforce training programs in specific skill areas. Other regions are using business development efforts in addition to workforce investment initiatives to create or grow high value-added industries. Furthermore, some regions have identified social and cultural barriers that prevent residents of the region from seeing such companies and skills as the path to prosperity. Along with workforce and economic development strategies, these regions use approaches that create incentives for potential stakeholders to consider social and cultural issues.

The California Corridor is an example of a region with goals that address the multiple dimensions of a cross-cutting prosperity theme. Its focus on engineering-based industries on the business development side is echoed in its workforce investment initiatives, while its K-12 efforts aim to change the perceptions and interests of parents and young people about the fun and value of math and science.

Another theme that cuts across the Generation I WIRED regions is innovation and entrepreneurship. In many regions, this issue is addressed primarily through education and training courses in entrepreneurship; in others, through technical assistance to start-up companies, including mentors and start-up funding; and in still others, in community-wide affinity groups and celebratory activities focused on people and businesses that are entrepreneurial. The presence of all three kinds of goals and activities—business development, education and training, and social and community development—may be more likely to result in measurable and sustainable transformation than a more singular focus on activities such as enhanced support for a pre-existing small business support center in a region. For example, the Finger Lakes region uses all three types of activities to support entrepreneurship, in a variety of mutually reinforcing projects. The Finger Lakes WIRED Initiative is: 1) supporting a Kauffman

Foundation-funded entrepreneurship program at the University of Rochester; 2) implementing a program of technical assistance and financing support for start-up and growth of company entrepreneurs; and 3) providing community college-based training to increase the availability of skills needed in emerging technology companies.

Better coordination of previously fragmented efforts and resources is also a unifying theme that appears in the goals of some of the regions. The partners in these initiatives recognize that the existence of parallel agencies, restricted pockets of funding, and the absence of communication, common goals, shared metrics, and collaborative efforts may actually slow down or curtail progress towards prosperity. In response, these regions have made a commitment to partnering organizations and leveraging resources to accomplish their goals. The two Generation I regions in Michigan are good examples of this. In these regions, major funding incentives to stimulate new multiple-organization partnerships for specific projects are in place at the state level, among foundations and civic groups, as well as within WIRED.

Finally, a number of the regions focus on globalization and a readiness and ability to turn globalization trends to their own advantage. These regions are developing new global partnerships, moving toward advanced manufacturing, and concentrating on regional industries and skills that can help position the region in the global marketplace. Interesting examples of this type of initiative include the Mid-Michigan Innovation Team (MMIT), whose Michigan Manufacturing Technology Center provides training to entrepreneurs and other business in how to find new national and international customers. MMIT also encourages the efforts by Michigan Tier II supplier companies to penetrate the European vehicle manufacturer market. In similar fashion, the North Star Alliance supports its region's efforts to provide Maine-built boats to the Chinese pleasure boat market.[33] Even Pennsylvania's Wall Street West, which in this era of global terrorist threats sees an opportunity to provide backup to New York City-based financial institutions, represents a creative approach to globalization. These regions are actively identifying global business opportunities, training management and business owners in global marketing, engaging in civic efforts to change perceptions within the region about where the future lies, as well as branding the region to the rest of the world.

Conclusion

In addition to addressing the requirements of the WIRED SGA, the goals of the Generation I WIRED regions reflect the context in which their initiatives have been formed. Most of the regions both recognize and, through a variety of goals and projects, are attempting to address the need for simultaneous change in: 1) attitudes and social expectations, 2) economic development efforts; and 3) workforce investment priorities. Regardless of their initial state of readiness for implementing WIRED, all 13 Generation I regions are moving toward addressing this need for multi-level reframing of their approaches to economic development and workforce investment. The wide range of goals just described, and the mutually reinforcing character of the goals that a

[33] ETA issued guidance to the WIRED regions on allowable use of grant funds in July 2006, advising them that marketing expenses were not covered by their grants (see Chapter 4). The regions used funds from other sources to cover the costs of such activities.

number of regions have adopted, are signs that regions are taking important steps toward regional transformation.

The chapters that follow elucidate in more detail the ways in which the WIRED regions differ or cluster on a number of dimensions: governance, partnerships, funding, strategies and activities, and documentation of progress toward goals. The sorts of contextual issues just discussed profoundly affect the implementation and integration of WIRED at the regional level. Over the four-year evaluation process, these will become increasingly important variables in understanding the long-term outcomes and effects of WIRED on a region-by-region basis.

Chapter 3. WIRED Structures, Communications, and Collaboration

ETA believes that partnerships and collaboration are key to the WIRED Initiative's implementation and success. The Generation I WIRED regions are using a variety of organizational structures, management styles, and communication mechanisms to encourage the growth of partnerships, to foster collaboration, and ultimately, to transform their regional economies.

This chapter first discusses the structures that the Generation I WIRED regions have adopted for governing and managing their initiatives. Next, it summarizes the regions' mechanisms for collaboration, communication, and building partnerships. Finally, the chapter concludes with a discussion of the evaluation's social network analysis.

Regional Structures and Roles of Partners

The roles and governance structures that the Generation I WIRED regions have created to accomplish their goals are as diverse and complex as the organizations and histories that have shaped the initiatives. This section describes the key roles, structures, and partnerships that most centrally affect decision-making within the regions, and ultimately will help determine the effectiveness of the initiatives they are pursuing. These include the WIRED grantee, fiscal agent, WIRED regional management, Steering Committee, WIRED staff, consultants and contractors, and other partners.

WIRED Grantee – the State Role

The SGA for the Generation I WIRED grants identified state governors as the sole applicants eligible to receive an award; however, in all regions the governor has delegated grantee responsibilities to the state agency responsible for workforce investment services (see Figure 3.1). Examples are the Employment Development Department in California, the Departments of Labor and Industry in Montana and Pennsylvania, and the Agency for Workforce Innovation in Florida. In addition, governors play a more active role in some of the WIRED initiatives. For example:

- The governors of Alabama and Mississippi are the designated co-leaders of the WAEM WIRED team.
- The Pennsylvania Governor's Office has contributed over $8 million in matching funds for Wall Street West that will be used to fund the fiber optic cable connecting the region with lower Manhattan—required for convincing New York finance firms to establish their backup and back office operations in the region.

Figure 3.1
Generation I WIRED Regions: Grantees, Fiscal Agents, and Program Managers

Region	Grantee Organization	Fiscal Agent Organization	WIRED Management Organization
WAEM	Alabama Department of Economic and Community Affairs Office of Workforce Development	Alabama Department of Economic and Community Affairs Office of Workforce Development	The Montgomery Institute
California Corridor	California Employment Development Department	California Employment Development Department	California Space Authority
Metro Denver	Colorado Department of Labor	Colorado Department of Labor	Metro Denver Economic Development Corporation
Northwest Florida	Florida Agency for Workforce Investment	Florida Agency for Workforce Investment	Florida's Great Northwest, Inc.
NCI	Indiana Department of Workforce Development	Purdue University Center for Regional Development	Purdue University Center for Regional Development
Kansas City	Missouri Workforce Development	Mid-America Regional Council	Mid-America Regional Council
North Star Alliance	Maine Department of Labor	Maine Department of Labor	Maine Department of Economic and Community Development
Mid-Michigan	Michigan Department of Labor and Economic Growth	Michigan State University	Prima Civitas Foundation
West Michigan	Michigan Department of Labor and Economic Growth	Grand Valley State University	West Michigan Strategic Alliance
Montana	Montana Department of Labor and Industry	Montana Department of Labor and Industry	Montana Department of Labor and Industry
Finger Lakes	New York State Department of Labor	RochesterWorks!	RochesterWorks!
Piedmont Triad	North Carolina Department of Commerce	Piedmont Triad Partnership	Piedmont Triad Partnership
Wall Street West	Pennsylvania Department of Labor and Industry	Ben Franklin Technology Partners of Northeast Pennsylvania	Ben Franklin Technology Partners of Northeast Pennsylvania

Source: Generation I WIRED Regions' Implementation Plans

- The Montana governor's personal involvement and commitment are reported to have facilitated implementation of Montana WIRED by providing a well-publicized framework in which the initiative could form partnerships with both state agencies and business.
- The North Star Alliance's Executive Committee includes representatives from the Governor's Office as well as the Commissioners of the Maine Department of Labor and Department of Economic and Community Development.
- The Indiana Governor's Office usually limits its role in NCI WIRED to oversight and support but does intervene when the governor feels strongly that an issue needs to be addressed. In mid-2007, the Governor's Office strongly suggested the need for a communications and marketing plan, including a new website.

WIRED Fiscal Agent

The Generation I WIRED SGA also allowed governors of applicant states to designate a fiscal agent, but did not require the fiscal agent to be a governmental agency. As Figure 3.1 shows, in about half of the regions, the governor took advantage of this flexibility and selected universities or community-based nonprofit organizations to serve as the WIRED fiscal agent. In the rest of the regions, the state workforce agency is responsible for WIRED fiscal oversight.

A number of governors also chose to streamline operations of the WIRED initiative by designating the WIRED management organization as fiscal agent as well. The fiscal agent was the state workforce agency in only one of these regions (Montana).

Organizational Home of WIRED Initiative – Program Management

The choice of an organization to operate and manage the local WIRED initiative was typically made at the time the initial proposal was written. In most of the Generation I WIRED regions, the program management organization had taken the lead in developing the grant proposal that the governor chose to submit to ETA. As a result, the choice of a lead organization was automatic, or nearly so. For example, the lead organization in several regions (e.g., Northwest Florida, Piedmont Triad, and West Michigan) had led a region-wide planning effort that preceded the WIRED Initiative and that was an important determinant of the region's economic development and talent development goals. These organizations saw the Generation I WIRED SGA as closely aligned with their own objectives, took a strong interest in writing a WIRED proposal, and were the natural repository of the WIRED project management responsibility.

In a few regions, the state workforce agency or Governor's Office chose the WIRED management organization. One criterion in this selection process was the geographical boundaries of the proposed regional lead. For example, while the leaders of one organization had been instrumental in developing the Wall Street West concept, the Pennsylvania governor instead selected a different organization as project manager: the only organization with a jurisdiction covering the entire region. For similar reasons, management of WIRED activities in Mid-Michigan was assigned, post-award, to Prima Civitas, largely because this newly-established civic organization focused on economic and workforce development across the

geographic area of the WIRED region (unlike the fiscal agent, Michigan State University, with its statewide responsibilities).

Figure 3.2 shows Generation I regions by the type of organization managing the region's WIRED initiative (i.e., economic development, university, state agency, or other). The figure also indicates whether the WIRED initiative is the program management organization's most dominant activity, or just one of many activities.

Figure 3.2
Organizational Home of WIRED in Generation I Regions

Type of Organization	# of WIRED Regions	WIRED is Organization's Largest Activity	WIRED is One of Many Activities
Economic Development	5	Northwest Florida Piedmont Triad West Michigan	Metro Denver Wall Street West
State Agency[a]	2		Montana North Star Alliance
University	1		NCI
Other (Planning, Civic/Leadership, Industry-Specific, Workforce Board)	5	California Corridor Kansas City WAEM	Finger Lakes Mid-Michigan

Source: BPA/UCSD Evaluation Team interviews and site visits

[a]Montana's workforce agency manages the state's WIRED initiative, while staff from the Office of the Governor manage Maine's North Star Alliance.

The most prevalent type of organization managing WIRED in Generation I regions is one that has economic development (or closely-related activities) as its primary focus. Some of these WIRED management organizations are community-based nonprofits, while others are public-private entities. For example, the Piedmont Triad Partnership (PTP), one of seven regional economic development partnerships in North Carolina, is the economic development organization representing the 12-county Piedmont Triad region. Florida's Great Northwest, Inc. is a group of business and economic development leaders from counties in the Florida Panhandle that joined together almost ten years ago to take advantage of the collective benefits and regional strengths that can be harnessed by working together.

Only one region (NCI) uses a university division to manage its WIRED initiative, while state agency staff manage the two most rural regions (Montana and North Star Alliance). The lead organizations of the other Generation I regions have a variety of overall purposes:

- The California Space Authority (CSA) is a nonprofit corporation representing the commercial, civil, and national defense/homeland security interests of California's diverse space enterprise community.
- The Mid-America Regional Council (MARC) is a federally-designated regional Metropolitan Planning Organization responsible for planning, programming, and coordinating federal highway and transit funds in the Kansas City area.
- The Montgomery Institute (TMI) in the WAEM region is a nonprofit, regional organization focusing on leadership development and civic engagement. Prior to award of the WIRED grant, TMI staff had led regional planning efforts.
- The lead organization for Finger Lakes is a local workforce board, RochesterWorks!.
- To enhance Mid-Michigan, the Prima Civitas Foundation (PDF) emphasizes sustainable entrepreneurship, job growth, wealth creation, higher quality of life, equitable educational opportunities and a strong community identity, commitment, and momentum.

Figure 3.2 also shows that for about half of the Generation I regional program management organizations, WIRED represents the majority of the organization's activities. All of these lead organizations are small nonprofit agencies that had existed prior to the WIRED grant award; however, the initiative now eclipses their previous activities. Program management organizations for the other half of the regions consist of a range of different types of larger organizations. As might be expected within larger organizations, four of these WIRED initiatives are operated by a distinct sub-unit of the management organization.

The missions of the Generation I WIRED lead organizations all are consistent with or closely aligned with the goals of WIRED for their regions. The two are not always identical in their scope, however. For example, the mission of the West Michigan Strategic Alliance (WMSA) "to make the region the best place in the Midwest to live, learn, work, and play," is broader than the WIRED goals. On the other hand, the mission of the Purdue University division that is operating NCI WIRED, "to conduct applied research and policy analysis on regional needs and policy issues, assist with regional strategic planning, and provide research technology and expertise in regional development," is somewhat narrower than the aim of WIRED.

Interestingly, the lead organizations of two WIRED regions have modified their missions to conform more closely to the goals of the WIRED Initiative. North Carolina's lead organization states on its website that its mission is "marketing the 12 counties of the Piedmont Triad for business expansion and relocation." The organization has evolved over the months since the beginning of the WIRED Initiative, however, and its overall purpose now incorporates the WIRED goals of fostering regional thinking, building a strong workforce, and strengthening existing business sectors. Similarly, TMI in WAEM has expanded its mission to incorporate workforce-related goals into its purpose of promoting regional collaboration using the community college system.

WIRED Steering Committees and Their Roles

This report uses the term Steering Committee to designate the group responsible for governing, overseeing, or setting overall direction for the local WIRED initiatives. Individual regions use a variety of names for this group: Governing Board, Executive Committee, WIRED Action Committee, Leadership Team, Governance Council, High Skills Leadership Council, Governing Commission, and WIRED Policy Council. These committees guide and govern the Generation I WIRED initiatives and are as diverse as the efforts they oversee. Most regions have a single committee, although their roles vary considerably. The funding section in Chapter 4 describes the types of agreements that regions use to hold these structures together.
In four regions, the committee plays (or has played) a strong governance role. The California Corridor's Leadership Team played a strong role in the initial year; however, since then much decision-making has devolved to staff and to those who operate funded projects. The North Star Alliance's Executive Committee plays a strong governing role, while its Steering Committee serves more in a leadership capacity. Finger Lakes' Governing Board (and its Executive Committee, which is a subset of the Board) are the leaders to whom WIRED staff report. Mid-Michigan's Steering Committee or Governing Board has evolved since the first year from a consultative role to taking on more responsibility for decision-making and assuming ultimate responsibility for achievement of WIRED goals.

At the other end of the spectrum are the regions in which the Steering Committees serve in a less directive oversight role, or are concerned more with policy and overall direction than with strategy. They may serve an important advisory role, but are not directly in the "chain of command." WAEM, Metro Denver, Kansas City, NCI, and (increasingly) the California Corridor fall into that category.

Between these two extremes, the Steering Committees in the remaining regions are important sources of leadership, creative ideas, momentum, problem-solving skills, and accountability. Many of these groups make important decisions, such as which projects should receive WIRED funding, but typically do so after hearing the recommendations of a proposal review group. They may develop policies or rules governing WIRED operations, but do not appear to play a directive role in project management or operations.

Several aspects of the regions' Steering Committees are relatively similar across regions. One is their composition: almost all committees include representation from the private sector, the workforce investment system, the K-12 education system, higher education, economic development, the nonprofit sector, local government, and state government or a representative of the grantee. Many Steering Committees include individuals with expertise in entrepreneurship, such as a Small Business Development Center representative. A few also include individuals representing the venture capital or angel investment community. In some regions, such as Wall Street West, efforts to increase the involvement of the private sector are ongoing.

Another similarity across regions is the hard work involved in recruiting and convening large and diverse committees. Time is a scarce commodity for most of the members of WIRED Steering Committees and other related groups. Both obtaining a commitment to serve and resolving scheduling conflicts can be challenging.

A final recurring theme across Steering Committee is the personal benefit and professional satisfaction their members receive from participating in these committees. The WIRED initiatives have in many cases brought together individuals who would not otherwise interact. It has also brought about collaboration and problem-solving among organizations that have previously competed, as their leaders learn to work together effectively in the Steering Committee and other working groups.

WIRED Staff and Their Roles

Staffing the WIRED initiative was a major early challenge in most Generation I regions. All regions recruited new staff to operate WIRED; only a few positions were filled by diverting existing staff. Recruiting, for many, turned out to be quite time-consuming, and the early steps of WIRED implementation, including development of an implementation plan, therefore took longer than expected. The rest of this section discusses staffing issues, such as number and centralization of staff, specialized functions, and turnover.

Staff Size and Centralization

At least five Generation I WIRED regions have invested heavily in staff centralized within the program management organization. They are described below:

- The California Corridor has 12 staff members devoting all of their time to WIRED, including individuals operating within the California Space Authority (CSA) and those within the California Space Education and Workforce Institute (CSEWI), CSA's nonprofit sister organization. In addition, other individuals within both CSA and CSEWI make part-time commitments to managing WIRED.
- Northwest Florida began with four WIRED staff positions, then added nine additional positions as the need for them became apparent.
- Piedmont Triad has a WIRED staff of nine plus part-time contributions from at least three other individuals within the organization. In addition, Piedmont Triad has recently collaborated with North Carolina State University to create a shared position of Business Innovation Agent.
- TMI in the WAEM region also has nine centralized staff positions.

By contrast, several WIRED regions have internal structures with few staff:

- The Finger Lakes Partnership has four staff members. The WIRED program manager also serves as the executive director of RochesterWorks!, the nonprofit that staffs the local board for the Rochester area and operates a One-Stop Career Center. The efforts of the three other staff members (two project managers and an executive assistant) are assisted through part-time efforts from RochesterWorks! data and finance staff.
- West Michigan manages its initiative with three full-time WIRED staff. The group is referred to as the Core Team and consists of the program manager, assistant program manager, and administrative assistant. During the first year of the WIRED grant, the staff of West Michigan WIRED included two additional temporary positions: the knowledge

manager position, which ended in June 2007; and the historian position, which was eliminated when it was determined this role was no longer needed.

- NCI has a WIRED staff of three full-time persons, with part-time contributions from two others.
- Wall Street West has four full-time staff persons, with part-time involvement of the host organization's Chief Executive Officer and two other managers.
- The North Star Alliance had two staff members at the time of the site visit: a program manager and a deputy program manager who is an expert in cluster-based economic development. When the deputy program manager left his position, the initiative sought to replace him with an all-purpose administrative associate.
- Montana has only three full-time centralized WIRED staff.
- The two state-operated programs, in Maine and Montana, supplement the efforts of full-time WIRED staff with additional staff outstationed in field offices.
- The North Star Alliance has four business liaisons who work in Career Centers throughout the region. Their primary functions are to assess employer needs and assist businesses to link with needed resources.
- In addition to Montana's three central staff are WIRED case managers who work in eight of the state's 23 One-Stop Career Centers.

Specialized Functions

Nearly half of the Generation I regions have staff with specialized functions. For instance, both Metro Denver and Piedmont Triad have created full-time industry specialist positions, one devoted to each of four targeted industry clusters. These individuals are responsible for convening and providing staff support to their industry panels. They gather information about industry needs, particularly workforce-related needs, and ensure that this information is taken into account in WIRED decision-making. The California Corridor also has several specialized positions. These include: a manager of technology commercialization and business development, who has particular knowledge of and expertise in technology development, advanced manufacturing, and entrepreneurship; a media public relations manager; and a director of state and local government relations.

Turnover

Several Generation I regions experienced turnover in key staff positions—including the WIRED program manager—during the first 18 months of their operations. Turnover in any organization, particularly at the top, is disruptive. In an initiative as complex and time-constrained as WIRED, losing a program manager can be a major impediment to accomplishing goals.

Wall Street West represents the most dramatic example of staff turnover among the Generation I WIRED regions. The initative operated without a program manager for its first nine months, then the program manager who was hired resigned nine months later. At the time of the evaluation visit, Wall Street West had therefore spent more than half its history with other staff

playing multiple roles. The CEO of Wall Street West's lead organization has had to remain closely involved in managing the initiative, and the remaining three WIRED staff members have worked hard to fill the gaps.

In another region, the CEO of the WIRED management organization stated that if he could go back and do one thing differently, it would be to devote more time earlier to recruiting the new staff members needed to manage and operate the WIRED initiative.

Project Management and Operations Roles Filled by Consultants and Contractors

At least half of the Generation I regions accomplish some of their management and operations roles through subcontracts or consultant agreements with partner organizations. Often these roles are as straightforward and transitory as, for instance, setting up the structure of the WIRED website, but leaving the content and related communications to those more integrally involved in the initiative. Several regions also sought help from consultants and subcontractors in creating their WIRED implementation plans and goals matrices. Outside help was often needed because the WIRED staff were not fully on board at the time these activities were taking place.

Some regions used consultants and subcontractors to fill relatively specialized roles in their initiatives. For instance:

- In Western Michigan, WMSA hired consultants to provide assistance with communications, information technology, and as an advisor for funded Innovations (i.e., WIRED projects). The technology innovation advisor was a one-year position that ended in September 2007.
- Wall Street West uses a subcontractor to manage a large portion of project communications, including writing articles for the online newsletter and other website content, managing the project's mailing list, and ongoing media relations and press releases.
- NCI has an economic policy consultant who also leads the WIRED civic leadership initiatives.
- Piedmont Triad recently created a new position—business innovation agent—jointly funded by the Piedmont Triad Partnership and North Carolina State University. This collaborative university/economic development position will focus on the transfer of technology into the 12-county Piedmont Triad region, and put people with ideas in touch with those who have resources, in order to foster innovation.
- Northwest Florida and WAEM both hired consultants with expertise in state-level grant management. Northwest Florida later transitioned its consultant into a regular staff position to handle ongoing operations.

In other regions, subcontracts and consultant agreements have been used as mechanisms to secure the participation of partners in roles more central to project operations. For instance:

- The California Corridor uses some partners as project leads with the authority (although with CSA oversight) to run their projects. While these projects are more correctly classified as program activities than as operations and management, project leads also have operational responsibilities. Subcontract agreements spell out contractual obligations, including

requirements for convening meetings of leads and partners, and the expectation that leads will facilitate collaboration among partners involved in the project.

- Montana's projects are managed through contracts with the state Departments of Agriculture and Commerce, and the Office of the Commissioner of Higher Education (OCHE). Senior managers from these departments are also members of the WIRED Executive Committee. The Department of Agriculture staffs four Bio-Product Innovation Centers, while the Department of Commerce provides technical assistance to employers on manufacturing, and funds the training of bio-energy company workers. OCHE funds the development of curricula on bio-fuels at the Bio-Energy Innovation and Testing Center at Montana State University, as well as training for entrepreneurs at community colleges.

WIRED Partnerships and Other Groups Instrumental in WIRED Implementation

Among the notable achievements in many Generation I WIRED regions are the unprecedented partnerships that stakeholders are forging. These partnerships are of many different types. Their histories reflect the pre-WIRED challenges and strengths of the regions. Their creation has often consumed enormous time and energy and, in some instances, may have delayed measurable progress in implementing WIRED activities. Their strength lies in the fact that they are making changes possible that previously could not have been implemented.

Regions have developed various partnership mechanisms for guidance and support of WIRED goals, in addition to the Steering Committees. Partnership groups are important as advisors, as centers of volunteer activity, or as sources of information, expertise, guidance in specific aspects of implementation, and/or communications with particular stakeholder groups. Types of partnerships include those that span professional barriers, those that transcend geographical boundaries (especially where organizations and governments have traditionally competed), and those created despite differences in partner organizations' cultures and missions.

In several regions, partnership groups are formalized as subcommittees of the Steering Committee. Many such subcommittees have additional members who do not also serve on the Steering Committee. Respondents in one region that currently lacks such structures believed that creating them would be advantageous, by involving a larger number of stakeholders in decision-making.

One example of such ancillary partner committees is the North Star Alliance's four pillars of economic development committees that develop, budget for, and oversee activities appropriate to the focus of each pillar:

- Workforce Development – Develops and delivers applied knowledge and skills to both incumbent and new workers, utilizing faculty jointly sponsored by industry and education;
- Research and Development (R&D) – Identifies and prioritizes new industry-based research initiatives, leveraging existing R&D resources with the ultimate goal of increasing Maine's industry-focused R&D workforce. Leveraged funds support these activities;
- Outreach and Market Development – Works to expand new market development initiatives within the boat-building and composites industries; and

- Capitalization and Infrastructure Development – Focuses on providing capital and management assistance for business and industry growth, facility improvement, and expansion in the targeted industries. The committee is working with local banks to establish a revolving loan fund to support these activities.

In addition, the North Star Alliance uses two senior level committees to guide management of the WIRED initiative. First, the team leader of each of the four pillars serves on the Executive Committee together with WIRED staff, Commissioners of the Maine Departments of Labor (MDOL) and Economic and Community Development, representatives from the Governor's Office, and key industry associations. This 16-member committee supports the program manager in running the initiative, and puts WIRED-related issues into the proper form to present to the Steering Committee for action. Second, the MDOL Commissioner and an industry representative co-chair the Steering Committee that is the initiative's formal governing authority, providing oversight and final decision-making on major topics. This committee is a larger group that also includes multiple stakeholders from all sectors.

The North Star Alliance is committed to using consensus as its decision-making model. Though the management team facilitates Executive and Steering Committee meetings, the structure is flat, with all members having equal voice and input. All of the initiative's committees, including the pillar committees, make decisions via consensus.

In Western Michigan, each funded project (referred to as an Innovation) has at least one advisory group to serve as the voice of the customer during the Innovation development process and to provide the Innovation team with insight and guidance. As the Innovations evolve, their advisory groups continue to grow, so that many of the groups now have more than 20 participating members, with over 100 organizations represented across all of the advisory groups.

NCI has three partner teams to support its WIRED initiative. First, the Policy Advisory Team acts as a Board of Directors for WIRED. Second, the Core Team, composed of NCI partner managers, acts as a tactical group. The Core Team reviews proposals that do not fit neatly into NCI WIRED or proposals for large dollar amounts. NCI's administrative team has approval authority for small proposals, but staff members often solicit input from the Core Team to ensure that proposals are understood, supported, and aligned with key partners' objectives. Over time, NCI's decision-making process has shifted from a consensus model in which the Core Team was involved in most management decisions to more of an advise and consent model. The third NCI leadership group is the Local Economic Development Organizations, composed of representatives from these key partner agencies. The group serves as a forum for managers to share information with, and to solicit feedback from these stakeholders.

An important source of leadership for the California Corridor is the group of funded project leads and partners. CSA hosts semi-annual meetings of all partners to enhance communication, discuss project implementation, and foster project team communication. Project leads also meet semi-annually to discuss the progress of their projects and to seek opportunities to leverage resources across the projects. Representatives from many sectors are encouraged to participate on a variety of advisory panels to provide valuable insights and to facilitate the successful completion of WIRED projects. Some of the panels include:

- The kindergarten through university (K-U) science, technology, engineering, and mathematics (STEM) education strategy panel, which solicits input from businesses about current and future shortages of technically skilled workers;
- The workforce and skill gaps analysis panel, which uses input from employers on future anticipated skill needs to assist economic development and workforce specialists to prepare for future workforce needs; and
- The venture capitalists panel, which assists with developing support mechanisms for entrepreneurial companies with Phase II SBIR grants.

Additionally, California makes active use of task forces to take on particularly challenging decisions or to grapple with issues that transcend particular strategies or projects.

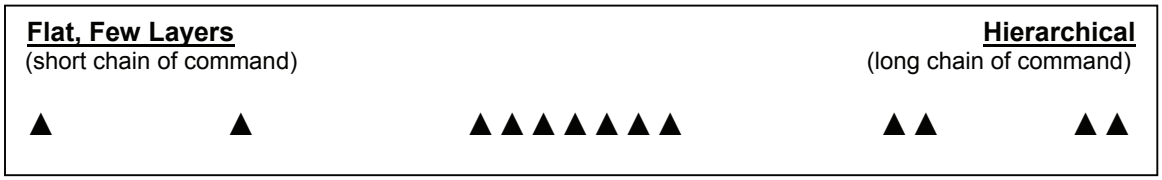
Northwest Florida, Metro Denver, Mid-Michigan, and Piedmont Triad have each organized Advisory Councils (or Panels, Learning Communities, or Roundtables) around each targeted industry. These groups specialize in issues related to their specific industry sectors, such as identifying the existing skills pool and identifying workforce skill requirements. They are cited by respondents in these regions as groundbreaking venues for collaboration among competitors, and as one aspect of the WIRED Initiative that may well endure beyond the end of the grant period. WAEM has organized four Goal Committees that are responsible for the primary goals of the WAEM WIRED initiative: community and leadership development; entrepreneurship; credentialing of workers; and youth programs. These committees require collaboration across all of the community college, workforce development, and economic development partners involved in the initiative, and, like the industry-related Advisory Councils described above, are likely to last in some form or another beyond the end of the grant.

Conclusions: Leadership and Decision-Making within Generation I WIRED Regions

Generation I WIRED regions rely on a variety of individuals and groups within their governance structures for the leadership that drives their initiatives. Any key partner in a WIRED initiative can provide the most important source of leadership within a region, and in most regions, more than one partner provides the leadership needed for different areas of WIRED implementation. In only one region was leadership truly centralized, with two individuals providing much of the project's momentum. In one other region, the project management team (paid staff) was deemed the principal source of leadership. In all other regions, leadership for the WIRED initiatives appeared to come from multiple sources.

Instances of centralized leadership may be reflective of the management style used by the WIRED management organization. As Figure 3.3 illustrates, management structures can range from horizontal or flat, to multi-layered, to vertical and hierarchical. The figure is a graphic summary of where the management of the Generation I WIRED regions appears to fall along a continuum representing length of the chain of command and extent to which multiple layers of authority are present within the structure, with each symbol denoting one region. The regions tend to cluster in the middle of the continuum, with a few more WIRED initiatives near the hierarchical end than at the flat end.

Figure 3.3
Generation I WIRED Regions: Overall Management Structures, Chain of Command

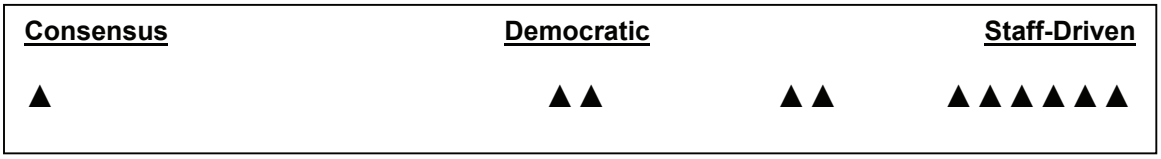


Source: BPA/UCSD Evaluation Team

The figure presents an oversimplification of extremely complex management and decision-making structures that are often varied, even within a particular region. Over the life of the Initiative, the evaluation team will track how the array changes as individual regions become more experienced at fostering collaboration and including more and more diverse partners within the management and operational structures they have established.

As discussed above, decision-making across the regions also ranges along a continuum from consensus-driven, through democratic, to staff-driven or authority-based. Figure 3.4 shows where the Generation I WIRED regions fall along this continuum, with each symbol denoting one region. The predominant model of decision-making is one in which staff do the majority of the work. Staff and program managers typically gather information and bring thoroughly-formulated proposals to the Steering Committee or other decision-making group, which then usually signs off on the proposal as presented, albeit sometimes with extensive deliberation.

Figure 3.4*
Generation I WIRED Regions: Predominant Decision-Making Models Used



* California Corridor and West Michigan not included (see text)
Source: BPA/UCSD Evaluation Team

For two regions, the continuum illustrated in Figure 3.4 is not entirely applicable. One of these is the California Corridor, in which most key design and partnering decisions had already been made during development of the WIRED proposal. Many current decisions are decentralized, made at the project level or by using a problem-specific task force. Other decisions are arrived at by staff offering options that are then discussed within the appropriate decision-making group and adopted through consensus. In Western Michigan, leaders have made conscious changes in the decision-making process, moving from a top-down model to adopt a more consensus-driven model.

One region, the North Star Alliance in Maine, stands out because of its explicit attention to management and decision-making structures. In this region, in which staff from the Office of the Governor manage the WIRED initiative, leaders have made a conscious choice to make WIRED-related decisions by consensus. One interview respondent noted that leaders and decision-making groups sometimes find it challenging to sustain this model of governance and not revert to a hierarchical structure.

The next sections explore the specific structures for communication and collaboration that have evolved in the Generation I WIRED regions.

Communications

The Generation I WIRED regions have developed a number of communication mechanisms to facilitate achievement of the goals outlined in their respective implementation plans. Such communication structures are also used to: foster, develop, and augment regional identities; engage stakeholders; exchange information; and discuss and resolve issues. Other communication activities, such as regional forums, annual meetings, outreach materials, and media releases, seek to promote WIRED among regional partners and the general public.

This section first describes mechanisms that regions have developed to facilitate communication with WIRED partner organizations, then explores mechanisms that regions use to communicate with the world at large.

Regional Communications Structures and Mechanisms

Each of the Generation I WIRED regions has had an evolutionary approach to building its regional WIRED community. A small circle of individuals initially reviewed and shared the Generation I WIRED SGA. The circle was then expanded during the proposal process to pull in more players. After the WIRED grant award, the circle continued to expand to include members of the Steering Committee and other committees, subcontractors (primarily responsible for individual projects), and partners from education, workforce investment, economic development, and business. Each region's management team incorporated input from stakeholders in developing its WIRED implementation plans. In varying degrees of detail, all regions included both internal and external communication structures and mechanisms in their implementation plans.

Each region uses a variety of communication structures, including committee meetings, websites, and conferences. The remainder of this section discusses each of these mechanisms.

Meetings of Regional Boards and Committees

The creation and development of regional Steering Committees, advisory boards, and other committees provide an opportunity for WIRED partners from workforce investment, industry, and economic development to interact. More importantly, committee meetings are a mechanism for obtaining stakeholder involvement, buy-in, and support for the WIRED initiative.

- Metro Denver has created a High Skills Innovation Network consisting of two sets of committees: 1) four Demand Side Panels are made up of representatives from four target industries—aerospace, bioscience, energy, and IT/software; and 2) four Supply Side Panels convene representatives from K-12 school districts, higher education, the workforce investment system, and small business. The panels collect information about employers' particular needs for workers (demand side) and available education and training opportunities (supply side) within the region. This structure was established to allow panels to hone in on their respective areas of expertise, and to support relationship-building between panel members. In the first year of the initiative, however, no formal communication mechanisms existed to enable the panels to share information. All of the panels met together for the first time in September 2007.
- The WAEM region uses a Goal Committee structure that ensures communication and committee participation across all of the WIRED community college partners from both Alabama and Mississippi. In addition, workforce development staff members at the participating community colleges have cultivated a strong interpersonal network across state lines. They have developed a variety of means of working together, including e-mail and phone calls, to support the individual WIRED goals developed by their colleges, as well as the overall goals of the WAEM region.
- Mid-Michigan developed Learning Communities as a strategy to promote networking across geographic, professional, business, and interest-based communities within the region. These groups meet to define challenges related to the WIRED goals for each industry group and to generate ideas for WIRED projects.
- Across regions, most committee meetings are held face-to-face. Wall Street West experimented with conducting a governance meeting via teleconference, but found it to be ineffective and returned to holding these meetings in person.

Regional Websites

The Generation I regions have all created websites to provide information about their WIRED initiatives, and are updating the available information on a continuous basis. Figure 3.5 presents a summary of the contents of the regions' websites, which include an overview of the region's WIRED goals, regional boundaries, and information on specific projects being implemented. Each region's website also includes contact information for the WIRED program manager, as well as a list of key partners. Some regions (such as the North Star Alliance) include links to their partners' web pages as well. The websites present success stories, and information on outreach activities, including workshops and annual meetings. Many websites also post news releases and copies of articles on the region's activities from both local and national media. In addition, some regions have begun to use their websites as a means of providing information about job openings, grant opportunities, and programs funded by other sources that are available in the region.

The North Star Alliance, Wall Street West, Finger Lakes, Mid-Michigan, West Michigan, and Northwest Florida have posted membership lists of their governing bodies on their websites. Other regions, like WAEM, also post documents such as the region's quarterly newsletters in

Figure 3.5
Content of Generation I WIRED Regions' Websites

Generation I WIRED Region	Contact Information	Map of Region	Overview/Goals	Organization Structure	Management Team/ Staff	Governance/Leadership	WIRED Funding Opportunity Announcements	Descriptions of Projects	Progress Reports and Updates	Calendar/Events	Press Releases	Media Coverage	Blog	Discussion Forum	Newsletter	Partner Information	Regional Resources	Job Opportunities	Training Opportunities	Market & Competitive Assessments	Automatic Announcements about WIRED Activities	Public Feedback Mechanisms
WAEM	X	X	X												X	X						
California Corridor	X		X					X		X		X				X						
Metro Denver	X		X		X		X		X	X	X	X				X						X
Northwest Florida		X	X		X	X	X	X			X											
NCI		X			X			X	X	X			X		X	X					X	X
Kansas City																						
North Star Alliance	X		X	X		X		X		X						X		X				
Mid-Michigan	X	X	X			X		X	X	X					X	X	X		X			X
West Michigan	X		X		X	X	X	X	X		X						X					
Montana	X	X								X		X		X								
Finger Lakes	X	X	X		X	X	X	X	X	X	X	X			X	X						
Piedmont Triad		X					X				X	X			X							
Wall Street West	X	X	X			X				X	X	X			X	X				X		

Source: Generation I WIRED Region websites

order to provide detailed information on projects, activities, partners, and committee members. Other examples of Generation I WIRED website features include the following:

- The Montana region's website includes a discussion forum that provides a mechanism for members of the community at large to share information and their viewpoints about various topics including (but not limited to): agriculture, bio-fuels, workforce issues, education, alternative energy, innovation, and markets. Staff members are also working on creating an online collaborative workspace for partners to share information and documents.
- Websites for Mid-Michigan and the Piedmont Triad provide a mechanism for the public to provide comments directly to the WIRED team.
- The Purdue Center for Regional Development (PCRD), NCI's program management organization, is experimenting with a blog posted on its website that addresses both WIRED and other regional information. The purpose of the blog is to encourage creative thinking, network-building, and the exchange of ideas within the region.
- The Mid-Michigan website has links to training programs offered within the region. This website also includes videos showcasing the region's WIRED activities and success stories. Supported with leveraged funds, the videos are an innovative approach to documenting the region's activities, and they provide another communication mechanism to support the region's outreach activities.

Regional Conferences and Retreats

Many of the WIRED regions have convened gatherings apart from their regular committee meetings to bring partners together to share information, plan activities, and build relationships. Some regions also hold meetings and workshops that are open to the public as a mechanism to both promote their WIRED initiatives and to solicit feedback from the community. Examples of these meetings include the following:

- The Metro Denver region held a daylong leadership retreat in September 2007 that brought together the region's demand and supply side panels for cross-pollination. The group reviewed findings from recent regional studies, and together developed requirements for their upcoming grant solicitation process.
- To facilitate communication and collaboration between partners, Montana convened a regional WIRED Academy for its partners and subcontractors in August 2007. Presenters included both industry representatives and project managers who updated more than 75 attendees about WIRED activities in the region, discussed issues related to different bio-fuels, and encouraged networking across the region.
- WAEM conducted a series of community workshops to support the development of a culture of innovation and entrepreneurship in the region. The workshops presented information on community resources available to entrepreneurs, and solicited feedback from participants. The workshops were followed by a series of regional roundtables that solicited input from local leaders on top priorities for the region. This culminated in a Governors' Summit where over 200 regional leaders used electronic voting devices to choose and rank priorities for the region. In addition, the presidents of WAEM's community college partners have met periodically as a group to help foster regional identity and to coordinate committee work.

Other Communication Structures – Collaborative Efforts

Reflecting ETA's significant investment in WIRED, the quarterly WIRED Academies serve as an important mechanism for fostering collaboration between regions and for sharing regional practices and lessons learned. The WIRED Academies provide a venue for regions to present information on projects and activities within their regions, and have included topics such as: workforce system engagement and transformation, training new entrepreneurs, developing regional performance metrics, developing successful implementation plans, and business incubation. In addition, ETA has supported additional structures for promoting the sharing of information among all of the regions, such as online collaborative workspaces, communities of practice, and learning communities. Importantly, the regions themselves have also created structures, both formal and informal, that support collaboration across regions, such as the peer-to-peer communication that started in the Generation I regions and now includes Generations II and II as well. Over the past year, ETA and the WIRED regions have developed a common language that is now used among regional partners to discuss and describe activities. This development is an important component in the successful integration of workforce, industry, and economic development partners who all have different organizational cultures and languages. In future reports, we will look more closely at collaboration between ETA and the regions and at cross-regional collaboration.

External Communications

In addition to communicating with partners, the Generation I WIRED regions have embarked on a range of communication activities to inform the residents of their regions and the larger world about WIRED activities, projects, and resources. Such dissemination mechanisms have included websites, hardcopy and electronic newsletters, WIRED information materials, public meetings, meetings with stakeholders, and media campaigns. All of the following have focused on supporting the development and/or growth of a regional identity.

- While the program management teams of most regions develop and implement their own communications plans, West Michigan hired a communications firm after hearing from both the media and the public that the region's messages about WIRED were confusing. West Michigan uses a unique vocabulary to describe their initiatives and activities. For example, the region refers to WIRED projects as Innovations and project managers as Champions. The public relations firm has helped improve the public's understanding of the West Michigan WIRED initiative, and is now part of the core program team working closely with the program manager to develop materials for distribution to the public and the media. West Michigan also conducts communications and media training for all Innovation Champions and their teams to ensure that they communicate clear and consistent messages to the public about their projects.
- Wall Street West created a focused communication plan that targets students, their parents, the financial services industry, and regional educational institutions to educate and inform them about job opportunities in the financial services industry. The region has used an enhanced website, newsletters, and direct communication with universities and the banking industry to provide information about how the Wall Street West initiative can directly and positively impact their individual prosperity, and improve the prosperity of the entire region.

The communication plan includes a targeted effort to ensure that Wall Street West's message is communicated effectively to the financial services industry in New York.

- To address WIRED communications issues, the California Corridor hired a communications/ outreach director to develop a comprehensive communications plan that was presented to the WIRED partners. The plan includes a press release template for partners and stakeholders to use that will ensure the continuity of messaging and outreach to partners. In addition, the region is using a contractor to assist in the design and development of their website, which will focus on sharing best practices through a success story portal featuring partner, project, and accomplishment profiles.

Media Relations

WIRED regions have taken an active approach in working with the media to promote activities and initiatives within their respective regions. The regions have written press releases to announce new staff hires, WIRED-funded programs, and funding available to regional partners. Examples include:

- Regions such as Wall Street West, Finger Lakes, West Michigan, Northwest Florida, and Metro Denver post press releases on their websites, as well as subsequent articles that appear in both the local and national media.
- Articles about Wall Street West's activities have appeared in national publications such as the *New York Times* and *Business Week*. Site visit respondents said that, after seeing these articles, they felt that their work was having an impact on the region. Wall Street West staff noted that the WIRED program manager, who has a background in public relations, has supported both media coverage of the region's activities, and communication among the initiative's partners.

Public Outreach

The implementation plans of all Generation I WIRED regions included regional outreach events for the public, as well as events targeting the various economic development, industry, and government stakeholders within the region. About half of the regions (including Finger Lakes, Wall Street West, Piedmont Triad, Mid-Michigan, NCI, and WAEM) currently distribute newsletters and post them on their websites. For instance:

- WAEM's quarterly newsletter provides overviews of regional projects and lists members of WIRED committees. The newsletter was first distributed in 2006, and is currently distributed to several hundred people including partners and individuals who have participated in WIRED events. WAEM's community college partners helped compile the newsletter mailing list, which is reported to include a diverse group of recipients.
- Some of the regions, such as Finger Lakes, Mid-Michigan, West Michigan, NCI, and Metro Denver, periodically prepare WIRED program progress reports and updates that are shared with the region's governing bodies. The regions have also posted these reports on their websites as another mechanism to provide information about their activities.

- West Michigan held a WIRED Innovation Conference to inform residents of the region about the new economic and workforce innovations taking place at the local, state, and federal levels as a result of both WIRED and the state of Michigan's efforts.

Conclusion

The Generation I WIRED regions are managing a multiplicity of partners and projects, and need communication structures that reinforce the message of collaboration between workforce investment, economic development, education, and industry organizations. Additionally, as attracting public attention, participation, and support has become increasingly important, the WIRED regions have planned and implemented various dissemination efforts to inform and engage the citizens of their respective regions. Despite the regions' successes with these efforts, some challenges related to communications remain, such as the following:

- Site visit respondents in West Michigan and Kansas City noted that many individuals are hesitant to bring up issues in public that may be viewed as confrontational. They referred to this phenomenon as being "Mid-West nice." The result is that certain issues are discussed offline in informal meetings with a subset of participants. This leads to the perception that issues are discussed and decisions made outside of formally constructed processes.
- Metro Denver's demand side industry panels consist of competitors who are reluctant to share information with one another. As one respondent noted, egos of highly confident, highly driven individuals sometimes inhibited group collaboration. Nonetheless, these panels eventually were able to coalesce, conduct research, and complete their designated tasks, with the help of the region's industry coordinators and their expert facilitation skills.

The evaluation team will continue to monitor the growing complexity of communication between partners and stakeholders in the Generation I WIRED regions. These evolving communication structures will have an integral role in facilitating the necessary dialogue between partners to strengthen the workforce investment system and support the successful economic transformation of the region.

Collaboration

The Generation I WIRED regions have encountered, and have made significant progress in overcoming, a challenge of unprecedented difficulty. Building collaboration region-wide, in the face of multiple barriers and rivalries among partners, is an absolute prerequisite for building a shared vision of the region's future and for transforming the region's economy. This section describes some of the regions' experiences and accomplishments, including a summary of barriers to collaboration, stages of collaboration, and strategies that facilitate cooperation.

Pre-Existing Barriers to Collaboration

Without exception, the Generation I regions have encountered significant barriers to collaboration among WIRED stakeholders. Examples of these challenges include:

- Nearly all regions contain several geographical areas that were previously isolated, often disparate, and lacking a history of positive interaction, such as:
  - Counties separated by great distances;
  - Areas with a traditional manufacturing-based economy in the same region as areas with an historical dependence on agriculture, mining, or tourism—each with its distinctive set of skills, priorities, vocabularies, and values;
  - Communities in separate media markets with limited opportunity for inter-community communications; and
  - Areas separated by a mountain range or other geographical feature that is not only a physical barrier, but also often a cultural and traditional dividing line.
- Regions all include multiple sub-regions and jurisdictions, typically with significant histories of inter-jurisdictional competition and friction: between states; among multiple county and municipal governments; among local or sub-regional economic development organizations; among community college districts; and among workforce boards.
- Many stakeholders have spent most of their professional careers in organizations that have little in common with the organizations with which they must now communicate and collaborate. Considerable insularity can be found within the workforce investment system, the economic development community, the K-12 education system, the world of a research university, the community college structure, the business world, and government. Prior to WIRED implementation, many stakeholders did not have a full understanding of the vocabulary used by other types of stakeholders, much less of the constraints and accountability structures that influence their decision-making. Some members of these isolated worlds came to their WIRED roles with preconceived ideas about their collaborators-to-be.
- Other barriers are related to organizational self-interest—a reluctance to discuss problems with individuals outside one's own organization or to share ideas that may be deemed proprietary. This reluctance is common among competing companies within the same industry.
- Efforts to collaborate have been complicated by other factors that may be cultural or historical. These include:
  - A tradition of self-reliance and a lack of any prior need for or history of collaborating;
  - Conversely, a culture of reliance on others to make decisions, more typical in regions with a history of dominance by one or a few giant firms or by legacy manufacturing industries;
  - Disdain for, or suspicion of, government involvement in new ventures, especially those usually in the purview of business and/or the private sector;
  - A suspicion of outsiders, which may include people within the region but outside a narrow portion of it, not just those from outside the region;
  - A cultural or traditional hesitancy to confront controversies head-on and resolve them in a straightforward manner; and
  - A dislike of spending time in meetings or discussions of what needs to be done.

Steps in the Journey toward Collaboration

Without exception, Generation I WIRED regions have made progress toward developing a collaborative group of partners. While they differ in their beginning points and in the extent to which they have encountered each of the barriers outlined above, their leaders believe collaboration to be important for their ultimate success in economic transformation. This section describes some of the stages in what has typically been a difficult process of building collaboration among the disparate regional stakeholders.

In several regions, potential WIRED stakeholders had virtually no history of interacting with, much less partnering with, other WIRED partner organizations prior to award of the WIRED grants. In Piedmont Triad, for example, despite a pre-WIRED strategic planning process, competition was more the norm than was collaboration. In Mid-Michigan, the governor brought together two groups, from three different sub-regions of the state, which had proposed competing regional collaborations, and asked them to form a single region. Not only were many of the key players working together for the first time, they were engaged in a process of merging their competing ideas for what the WIRED initiative should look like.

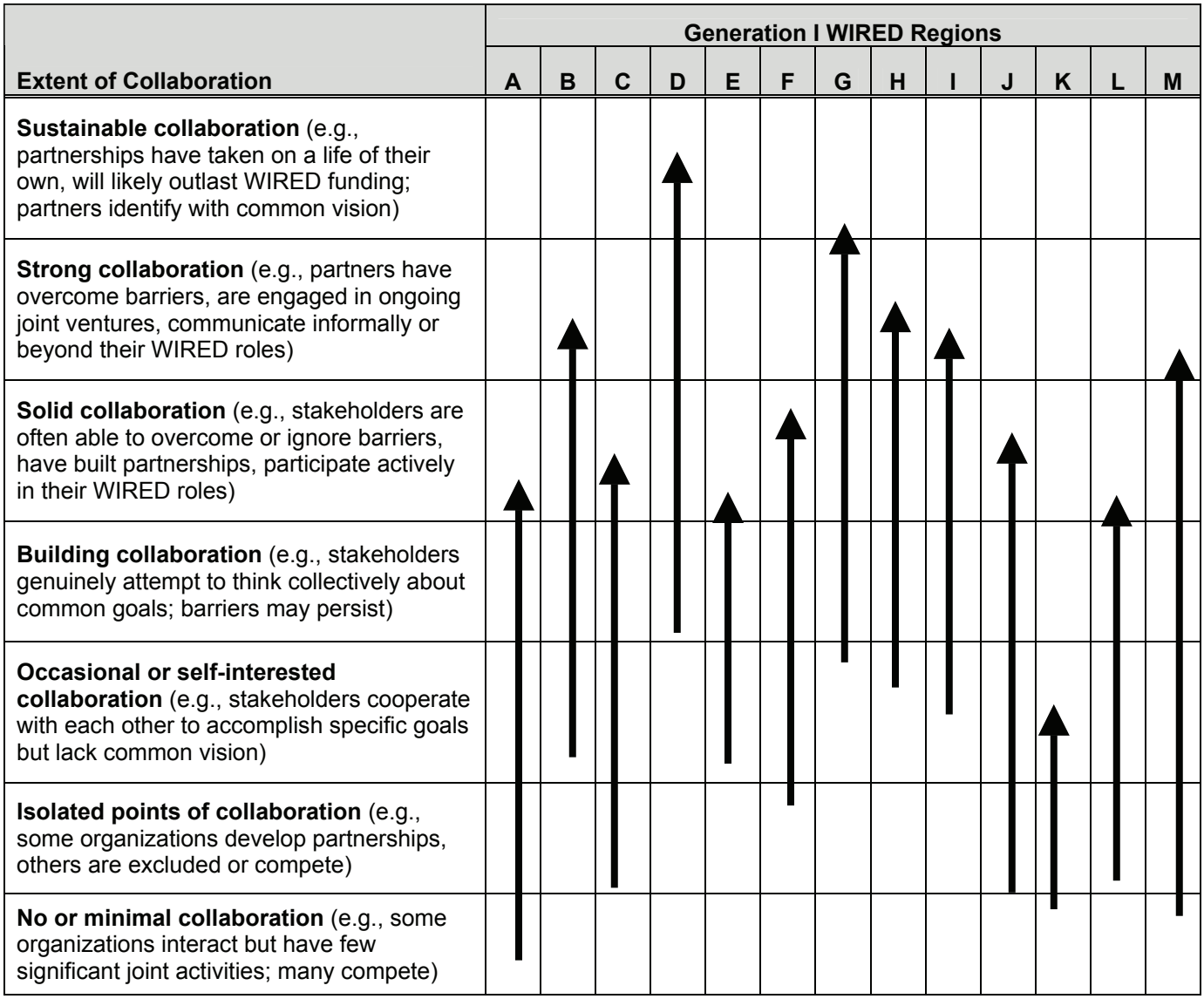
In other regions, key leaders had already formed a close working group before the initiative was implemented. Their challenge was to create buy-in among those not previously involved. In Finger Lakes, for example, many respondents from the rural counties surrounding Rochester say that they are not fully engaged in WIRED. In WAEM, although the regional development and community college partners had a history of working together and have developed even closer working relationships as their WIRED activities have proceeded, they have not yet succeeded in creating meaningful partnerships with the local workforce boards. The Wall Street West proposal was written by a group who had strong professional connections and served on each other's governing boards. Nonetheless, the leadership group needed to overcome inter-jurisdictional competition and professional silos to create collaboration.

Figure 3.6 illustrates the journey the Generation I WIRED regions have traversed in their quest to learn to collaborate. For each region, the arrow begins at the stage of collaboration at which the region as a whole was operating prior to the release of the WIRED SGA; it ends at the stage of collaboration apparent during the evaluation's first site visit. This characterization of the historical collaboration and the extent of collaboration at the time of the first site visit necessarily relies on the perspectives of the site visit respondents who were most outspoken about their opinions on the topic. Often respondents within the same region told diverging stories based on their individual perspectives. Different geographic areas within the region may also have started at different stages, as may have various key players in a region. Therefore, Figure 3.6 serves as highly subjective illustration, a snapshot in a constantly evolving saga.

Strategies Used to Foster Collaboration

The Generation I WIRED regions have, without exception, devoted significant time and effort to the challenge of creating or enhancing collaboration across a wide range of partners. They have used numerous strategies to do so. The most prevalent, perhaps, is simple persuasion: inviting individuals and organizations with a demonstrated interest in transforming the regional economy

Figure 3.6
Illustration of Progress toward Collaboration in Generation I Regions



Source: BPA/UCSD Evaluation Team

to participate as leaders or as members of committees and subcommittees that will contribute to achievement of shared goals. Site visit respondents in a majority of the regions noted the rewards of working with fellow members of governing boards and subcommittees and getting to know them as individuals. They added that the increased understanding that comes from that work has deepened the shared commitment to WIRED goals and solidified collaboration.

In many regions, a group of stakeholders was already working together prior to WIRED. Certain partners in Northwest Florida, for example, had formed Florida's Great Northwest almost ten years earlier to promote regional collaboration among local economic development efforts.

Similarly, the West Michigan Strategic Alliance was formed in 2000 to develop a common vision for the future of the region. The strategic planning process they undertook in the 1990s formed a solid foundation for WIRED collaboration. Kansas City has a long-standing tradition of civic engagement that includes business and economic development organizations, and in which leaders are close professional and personal colleagues. WIRED has built on these foundations, brought new partners on board, and continued to emphasize the shared interest in economic transformation that keeps partners working together effectively.

In other regions, government has taken action to create collaborative structures. For instance, Denver's mayor reorganized the City/County government to emphasize collaboration, integrating economic development and workforce development agencies and creating an ideal environment for implementation of WIRED. States (such as Kansas, Missouri, Michigan, and Florida) have undertaken similar reorganizations, thereby creating broader cross-professional understanding among those who would become WIRED partners and thereby facilitating collaboration.

Some regions have relied on the competitive contracting process to create new partnerships at the sub-regional level. Organizations seeking WIRED funding as subcontractors in Piedmont Triad and Wall Street West, for instance, are informed that they must create a new partnership (or a partnership with a prior competitor) to be approved for funding. Conversely, California may well have enhanced collaboration by making funding decisions at the proposal stage and thereby creating an environment in which the partners do not compete with each other for funds.

Summary

The WIRED Initiative has brought together individuals and organizations with diverse interests and capabilities, many of whom would not otherwise be working together. In addition to creating significant challenges, this fact may be the Initiative's greatest strength. Over the next year, WIRED partnerships are likely to grow and deepen, as they encounter new roadblocks and together work to overcome the resulting challenges.

The next chapter describes the strategies and activities that the WIRED collaboratives have adopted to meet their transformation goals, then discusses funding issues and how the regions measure their success.

Chapter 4. WIRED Activities, Funding, and Metrics

The nuts and bolts of WIRED's implementation—the strategies and projects that regions employ, how those activities are funded, and how their performance will be measured—are the connection between the 13 Generation I WIRED regions' goals and their eventual attainment. This chapter provides a descriptive review of the implementation of the Generation I WIRED regional initiatives as a preface to the comparative analysis that follows in later chapters.

The first section of this chapter describes the strategies and activities that the WIRED regions have implemented to meet their economic transformation goals. The subsequent section discusses funding, noting the significant challenges and opportunities that the regions have experienced due to the infusion of WIRED funds. Finally, the chapter ends with a discussion of the regions' measures and methods for documenting success.

WIRED Strategies and Activities

The goals of the 13 Generation I WIRED regions are based on using specific target industries to fuel economic growth, and the region's industry partners determine the flavor of the initiative's activities. All of the initiatives are implementing some type of workforce investment activities; however, the specific type of training that the region provides will reflect the needs of the region's targeted industries. As Figure 4.1 illustrates, these target industries can be grouped into four main categories: 1) advanced manufacturing (including aerospace, automobiles, and shipbuilding); 2) bio-fuels; 3) life sciences, health sciences, and agricultural science (including medicine, pharmaceuticals, food processing, and animal health); and 4) information technology (IT) applications, software, and telecommunications. In addition, a number of regions target industries outside of these categories. For example, Wall Street West is working with finance companies, while Northwest Florida and Mid-Michigan include construction as a target industry. Other industry targets include supply chain companies[34] (in Mid-Michigan and California Corridor); tourism and culture (WAEM); creative enterprises/arts (Piedmont Triad); and logistics/distribution (both WAEM and Piedmont Triad). Finger Lakes, California Corridor, NCI, and WAEM also give equal focus to entrepreneurship as an industry in its own right.

This section summarizes the types of activities that the Generation I WIRED regions are undertaking within their targeted industries. These include asset mapping, entrepreneurship development and support, preparation of future workers, workforce training, innovation and technology transfer, and leadership development.

[34] The term supply chain is used differently by various industries. In manufacturing, the supply chain consists of everything the business needs to build a product, from raw materials to component parts, and the companies that supply these. The aerospace industry uses the term to include all subcontractors who contribute to a project, even if they are not providing physical components.

Figure 4.1
Generation I WIRED Targeted Industries

Generation I WIRED Regions	Advanced Manu-facturing	Bio-Fuels	Life, Health, and Agricultural Sciences	IT, Software and Broadband	Other
WAEM	X		X	X	Warehousing & Distribution, Tourism/Culture, Business Services, Entrepreneurship
California Corridor	X		X	X	Aerospace, Entrepreneurship, Supply Chain Bio/nano-technology
Metro Denver		X	X	X	Aerospace
Northwest Florida	X	X	X	X	Aerospace/ Defense, Construction
NCI	X		X		Entrepreneurship
Kansas City	X		X		
North Star Alliance	X				Boat Building, Composite Materials
Mid-Michigan	X	X	X		Construction, Supply Chain
West Michigan	X	X	X		
Montana		X			
Finger Lakes	X	X	X	X	Entrepreneurship
Piedmont Triad	X		X		Logistics/Distribution, Creative Enterprises /Arts
Wall Street West				X	Finance

Source: Generation I WIRED Regions' Implementation Plans

Asset Mapping

A significant component of WIRED implementation is the host of research activities that have helped direct and launch the design of the Generation I initiatives. These include asset mapping, gap analysis, employer surveys, and other strategic planning efforts.

An asset map can be defined as an inventory of the resources in a given geographical area. In the WIRED context, the asset-mapping concept has been used to identify stakeholders and partners, enumerate facilities and programs, or assess regional economic conditions. In some regions, research was a minor activity, while in others it was a major element of the region's first year. The following are examples of different research activities often called asset mapping:

- Developing a comprehensive and detailed asset map and regional analysis was a major focus of the first year of WAEM's WIRED initiative. Despite concerns expressed by ETA and pressure from both the Alabama and Mississippi governors regarding the relatively slow pace of implementation, the WAEM program management team believed that a thorough understanding of the challenges, opportunities, and available resources in the region was critical to successful implementation of the initiative.
- California Corridor's Innovation Asset Inventory profiles 272 federal/military research facilities, academic/educational laboratories, and private industry technology research and development resources. In addition to cataloguing assets, the underlying purpose of this activity was to design a model of economic development in which the region becomes an environment that fosters and supports innovation.
- The North Star Alliance is conducting a broad industry analysis using its Business Visitation Program survey to identify industry trends, concerns, and needs, and to map out entrepreneurship opportunities. The survey is also identifying gaps in services, products, and distribution, and will be the basis for the region's activities aimed at micro- and small business attraction, development, and expansion.
- The Montana Manufacturing Extension Center, located at Montana State University surveyed bio-manufacturers in the region to determine their employee training needs. Through the WIRED initiative, the state's Department of Commerce is using the results to assist these employers in providing appropriate training to their workers.

Many regions had completed some form of analysis prior to the start of the WIRED Initiative. In Kansas City, a 2004 study had revealed the importance of the Animal Health Corridor, now a critical focal point of regional economic development. In Montana, the Governor's Office had completed an analysis of the state's economic strengths, weaknesses, and opportunities prior to WIRED. This research served as the foundation for the region's WIRED initiative and the selection of bio-fuels as a target industry. Metro Denver's keen understanding of its high-growth industry clusters comes from a 2005 study that coined the term Colorado Paradox to describe the contrast between the region's highly talented workforce and its inadequate talent pipeline. The results of this 2005 study informed further research, funded by WIRED, about workforce needs, career pathways, and assessments. Prior to WIRED, the WIRED management organization for West Michigan, the West Michigan Strategic Alliance, conducted an 18-month study and strategic planning process that involved input from 250 diverse participants. This project resulted in a sourcebook describing ten factors critical to the region, ranging from the environment and education to tourism and transportation. From this work WMSA developed a set of vital signs based on 15 indicators (five environmental, five economic, five social) that has been an important basis for the region's WIRED initiative.

Support and Development of Entrepreneurship

Entrepreneurs are often thought of as the young mavericks who create and lead high-tech start-up firms. In the WIRED context, however, entrepreneurship has taken on a much broader definition to include shifting the paradigm of existing firms, or instilling an attitude of ownership and creativity in the regional workforce and culture. Entrepreneurs are not just the next Bill Gates, starting multi-national firms in basements or garages, but also factory workers who find new ways to ensure product quality, suppliers who create more effective means of fulfilling orders, and old economy firms that are able to identify and respond to emerging global markets. Many of the Generation I regions are undertaking activities that both support the formation and growth of new businesses, and encourage entrepreneurship revitalization among existing businesses. For example:

- In Mid-Michigan, Saginaw Valley State University's Accelerated Entrepreneurship Initiative assists new ventures and existing businesses with market diversification, new market development, and commercialization of intellectual property. Lansing Community College's entrepreneurship curriculum prepares students to start their own businesses.
- In the Finger Lakes region, The Entrepreneurship Network operates a six-month workshop and boot camp for promising entrepreneurs. The Entrepreneurship and Strategic Growth Immersion Sequence Program, led by the Rochester Institute of Technology, encourages small enterprise managers with high growth potential to join or lead commercialization teams.
- NCI seeks to build community-level and region-level support for entrepreneurship. Facilitated by the Center for Rural Entrepreneurship, local elected officials, representatives from business-support organizations, entrepreneurs, and other community stakeholders are working together to foster community support for entrepreneurship. The Indiana Center for Economic Education Entrepreneurship's Youth Institute offers a fall semester boot camp for teachers and students, tools for teachers to incorporate entrepreneurship principles into the curricula of both business/economics and STEM courses, and a spring follow-up session during which students present business plans. The Indiana Venture Center runs a Regional Business Plan Competition that consists of county- and region-level "Elevator Pitch" competitions. NCI's Regional Angel Investor Network convened a workshop as the first step in developing a region-wide angel network. The region's Local Economic Development Organizations have negotiated a common statement of the importance of entrepreneurship and innovation as viable economic development strategies.
- WAEM's MyBiz project is connecting entrepreneurs, communities, and service providers into a system of support for seeding and growing entrepreneurs in the region. The project has three components: 1) community entrepreneurship development infrastructure, offered through the community colleges participating the WIRED initiative; 2) a regional network of service providers; and 3) a website that includes virtual services for entrepreneurs and for other entities that might support entrepreneurs, as well as a library of relevant materials, and a resource directory with links to the websites of WAEM partners and service providers. WAEM also provides a Youth Entrepreneurial Training program with foundation funding.
- Entrepreneurship support is woven into everything that California Corridor is doing. In addition, the region has several projects that focus specifically on helping entrepreneurs. For

example, the Innovation-Based Entrepreneurial Ventures project is a joint effort with 40 entrepreneurial companies to identify best practices for commercializing technology and creating jobs. These success stories will provide other entrepreneurs with examples of approaches to completing product, securing funding, forming alliances and partnerships, entering new markets, generating revenue, and growing their companies. The region is also creating a resource manual for local workforce investment boards to provide them with guidelines to identify and support the needs of entrepreneurial companies.

- Montana is supporting the Bio-Energy Innovation and Testing Center at Montana State University-Northern, which includes a Business Incubation Center to foster and grow bio-energy companies. Dawson Community College is also developing a Cluster Hub for bio-products manufacturing. In addition, Fort Peck Community College is developing curricula to be used in all of the colleges throughout the WIRED region covering bio-energy entrepreneurship issues, production management, and marketing issues. Miles Community College is cultivating a universal entrepreneurship certificate and/or degree program using innovative delivery models and faculty shared across colleges in the region.

Talent Pipeline Development

Development of the talent pipeline is a phrase that is used to describe the process of ensuring that an ongoing supply of workers are recruited and prepared to meet the needs of employers in a particular community. Pipeline development focuses on future entrants to the workforce. Activities include, but are not limited to, STEM education in K-12 and postsecondary education settings, as well as occupational skills training. Other job readiness preparation and career awareness programs also fall under this category.

The Generation I WIRED initiatives are implementing various types of STEM education projects designed to prepare 21st Century workers for a range of occupations, from shop floor technicians to rocket scientists. Several examples are described below.

- Through Kansas City's Making It In KC project, the Metropolitan Community College is providing 16 weeks of general employment and workplace training, including workplace mathematics, teamwork, lean manufacturing,[35] and quality assurance methods. The Partnership for Regional Education Preparation-KC (PREP-KC) creates greater connections between K-12 schools and local industries within the greater Kansas City area. PREP-KC has developed school-to-industry liaisons for each of the three key industry sectors of the WIRED initiative: healthcare, biotechnology, and advanced manufacturing.
- Metro Denver's JumpStart grant program supports several existing education programs with the goal of expanding their capacity and regional scope. These programs include the Community College of Denver's NASA-subsidized degree program in Aerospace Systems Engineering Technology and its Making of an Engineer summer camp program. JumpStart also funds a project at the Community College of Aurora that equips and trains high school teachers to bring students hands-on instruction in molecular biology and information about bioscience careers. Finally, JumpStart is funding the Denver School of Science and

[35] Lean manufacturing is the production of goods using less of everything: less human effort, less manufacturing space, less investment in tools, and less engineering time to develop a new product.

Technology's internship program, which connects high school juniors with real-world science and technology work experience in high-wage/high-skill businesses. At the same time, the program connects industry partners early with potential future employees.

- Project Lead The Way (PLTW) is a secondary education curriculum that prepares students for high-tech, high-growth careers in engineering, manufacturing, and biotechnology. Several WIRED regions have introduced PLTW's problem-based learning strategies into their high schools, including California Corridor, Metro Denver, NCI, and Kansas City.
- The North Star Alliance was a key contributor to the creation of the Advanced Technology Center (ATC) in Brunswick, Maine. The ATC is a facility that community colleges and employers can use to train students and employees in boat-building and the fabrication of composite materials.
- Montana funded development of the curriculum for an online Associate of Applied Science in Energy Technology degree program available beginning in Fall 2007. Students may enroll through two of the WIRED initiative's community college partners or through the University of Montana College of Technology.

Workforce Training

In contrast to pipeline development, workforce training includes activities targeting incumbent, displaced, or dislocated adult workers. These projects seek to increase existing skill sets, improve educational attainment, or provide workers with the new skills necessary to participate in a high-growth economy. Examples of Generation I WIRED workforce training projects include:

- NCI's Maturity Matters project which focuses on providing information, resources, and education to mature workers (age 45-plus). This effort aims to provide older workers with new 21st Century skills and assist employers to attract and retain older workers.
- WAEM has recently developed an internet-based advanced manufacturing training system, consisting of more than 450 training modules for use in technical courses at the region's eight community college partners and allied high schools, online individual skills training courses, and on-site training at businesses.
- A number of Generation I regions are using the WorkKeys system to ensure that workers have the basic skills needed to perform a job successfully. The system has three components: 1) job profiling, which engages employers in determining the basic skills required for individual jobs and occupations; 2) assessment of the basic skills that job seekers or trainees can apply to workplace situations; and 3) curricula designed to improve an individual's skills so that he or she can be successful in a particular job. West Michigan has far exceeded its 2007 goals for testing (by 129%) and issuing National Career Readiness Certificates (161%). The West Michigan initiative is also on track to meet its goals for increasing the number of employers using the certification.
- Kansas City has several workforce initiatives designed to increase the number of nurses in the regional health care system. The Nurse Preceptor and Mentorship Initiative trains bedside nurses to be mentors and preceptors for recent nursing school graduates. The Nurse Re-Entry Initiative provides refresher courses for non-practicing licensed nurses to return to

the profession. The New Clinical Faculty provides opportunities for nurses with baccalaureate degrees to receive additional education, potentially leading to graduate degrees.

- Montana is providing employee training for workers in bio-fuels and related industries through collaborating community colleges and through its contract with the Department of Commerce, mentioned above.
- In collaboration with The Landing School, a nationally recognized boat-building school, the North Star Alliance has organized a Train The Trainers program, known as T3, to certify incumbent workers as trainers so that they can train their coworkers on-site at their companies to minimize disruption of workers' lives and companies' production schedules. The goal is to have at least 24 trainers throughout the state trained in the established T3 curriculum, and to be able to both teach on-site and conduct regional presentations.
- The Healthcare Employment Opportunity project in Mid-Michigan provides services for current healthcare workers designed to increase job retention, and offers retraining programs for displaced workers from other industries to move into healthcare occupations.

Given the economic transformation goals of the Generation I regions, both the talent pipeline development and workforce training efforts focus on high growth knowledge-based industries and high value-added jobs. This does not mean that the regions focus these efforts exclusively on high-skill, high wage jobs. Rather they tend to address the full range of jobs in key industries along the whole career ladder, and along the full supply chain and network of support industries. Thus, while regions place considerable emphasis on preparing the future workforce of innovators, researchers, and highly skilled engineers and technical workers, the regions are also investing in upgrading skills among high school graduates and those with one or two years of post-high school vocational training.

Innovation and Technology Transfer

Several Generation I WIRED regions have undertaken projects that connect universities and other research facilities with businesses to create or improve products, processes, and services. These activities aim to build on research and development that has taken place in the region in order to create or increase high-skill jobs.

- The Advanced Engineering and Wood Composites Center (AEWC) at the University of Maine, Orono—a key North Star Alliance partner—is a leader in composite materials research and development. AEWC clients include businesses that work with composites, wood products, paper, and chemicals. The AEWC Center plays a key role in the WIRED initiative by helping both boat-building and composite businesses to adapt cutting edge composite technologies for the production of specific products.
- The Michigan Manufacturing Technology Center (MMTC) is assisting Mid-Michigan firms with developing new markets and addressing job retention beyond the automotive industry. During WIRED's first year, MMTC held several Discovery Sessions to assess needs in product development, market research, marketing, and sales performance. MMTC also

provides high-potential firms with consulting services to identify new markets, grow existing markets, and serve emerging markets.

- As the full name of California's WIRED initiative, the California Innovation Corridor, suggests, one of the region's key goals is designing a sustainable innovation support architecture to create an atmosphere in which the culture, environment, and systems are characterized and driven by robust innovation and flourishing entrepreneurship. California Corridor has seven projects designed to support an innovation-driven environment that aligns resources, enhances knowledge, accelerates linkages, and integrates programs and support across jurisdictions throughout the region.
- With WIRED funding, Montana's Departments of Commerce and Agriculture have partnered to create Bio-Product Innovation Centers in four communities in the region. These regional centers provide technical assistance to farmers, private entrepreneurs, university officials, and others interested in developing bio-based and value-added agricultural ventures. The Bio-Energy Innovation and Testing Center at Montana State University-Northern, provides Montana companies with performance and emissions testing for bio-fuels, additives, and bio-lubricants developed for internal combustion engines.

Leadership Development

Several Generation I WIRED regions have devoted resources to leadership development in an effort to engage business and civic leaders in their initiative's activities, and to help develop a shared vision for the region. Respondents in one region said that such projects would address the need to build new civic habits of collaboration, an effort they believed necessary for WIRED to be successful. For instance:

- The Rural Policy Research Institute (RUPRI) provides WAEM with consulting and technical assistance in leadership development and entrepreneurship. Recently, mayors from across the WAEM region gathered in a meeting that RUPRI hosted at the University of West Alabama to discuss regional opportunities; the participants agreed to move forward to form a WAEM Mayors Network. WAEM has successfully rolled out leadership development activities in eight communities in the region, bringing together civic and business leaders in rural place-building.
- One of NCI's transformative strategies is to build civic networks that foster collaboration across jurisdictional boundaries. A key activity of the region's civic leadership initiative is quarterly regional forums that bring people together around specific ideas to establish trust. NCI has convened forums with elected officials that focused on topics such as clean energy and regional economic development.

Summary

All of the Generation I WIRED regions are involved in activities such as asset mapping, entrepreneurship development and support, preparation of future workers, workforce training, innovation and technology transfer, and leadership development. Each region selected specific target industries to assist the initiative in transforming the region's economy, and these industry partners strongly influence the type of WIRED activities and projects within the region. These and

other contextual factors impact the implementation of WIRED. Thus, one region may choose to dedicate much of its first year's efforts in conducting research to develop a clearer understanding of the complexity of its economic challenges, while another may allocate much of its resources to expanding existing programs, and yet another may concentrate on developing regional structures that foster collaboration. The evaluation team will continue to assess the range of each region's activities as, over time, the emphasis that each region gives to a particular type of activity may change as the initiative moves into a new phase.

Funding

ETA awarded each Generation I WIRED region $5 million per year for up to three years. The source of these funds is the fees paid by employers for securing H-1B visas for foreign workers needed in the U.S. As discussed in further detail later in this section, the funding source has consequences for the implementation of regional initiatives.

The grants from ETA are not the only sources of funding for WIRED activities, as all of the WIRED regions have secured at least some leveraged resources from partners. This section explores the challenges and successes faced by WIRED regions in distributing WIRED grant funds and in obtaining matched and leveraged funds. Due to the flexible nature of the WIRED grant, regions vary widely in their grant distribution structures, the amount of funds leveraged, and progress in securing additional funding.

Distribution of WIRED Grant Funds

This section first discusses the processes that regions use to share their WIRED funds with partners, then reports on the status of spending by the regions, and describes several issues that the regions have encountered in distributing WIRED funds.

Distribution Agreements

The Generation I WIRED regions are using a range of mechanisms for distributing grant funds to their partners, including sole-source contracts, memoranda of understanding (MOUs), and competitive RFP processes. The regions vary in how they implement these mechanisms, and a region may use multiple mechanisms depending upon the partner that is to receive funds and their role in the initiative (e.g., major partner or Steering Committee member, vs. service provider or vendor). Figure 4.2 summarizes the variation across regions in the use of these mechanisms.

Most of the regions had determined their major partners, their roles, and their initial funding levels during the process of developing their grant proposals. For example, the WIRED partners who were intricately involved in preparing the Mid-Michigan application allocated all of their grant resources at the proposal stage without a competitive bidding process, which meant the distribution of funds was predetermined for the duration of the grant. (The predetermined budget created problems because Mid-Michigan had not originally planned for a WIRED management organization, so pre-allocated funds had to be redirected from WIRED projects to Prima Civitas.)

Figure 4.2
Mechanisms Used to Distribute WIRED Funds

Region	Vendor Selection Process			Matching Requirement	Type Agreement with Major Partners	Comments
	Competitive RFP Process	Determined When WIRED Proposal Written	Other Mechanism			
WAEM		X		none	Sole Source Contract	Partners and roles were identified during the proposal-writing stage. No redistribution of funds to date.
California Corridor		X		none	Sole Source Contract	Partners and roles were identified during the proposal-writing stage. A very small amount of redistribution has occurred as projects were implemented.
Metro Denver	X			none	Sole Source Contract	Partners' funding pre-determined. Vendors developed through RFP process—Year 1 education grants, Year 2 workforce grants.
Northwest Florida	X			Requires 1:1 match	Formal Partner Agreement	Periodic RFPs for different categories of training.
NCI			X	none	Sole Source Contract	Partners' funding predetermined. Vendors awarded via an ongoing flexible application process.
Kansas City		X		none	Sole Source Contract	Funds allocated according to specific WIRED goals. No redistribution of funds to date.
North Star Alliance	X		X	MTI vendors required to provide 1:1 match	MOU	Partners' funding pre-determined. NSAI funded vendors' unsolicited proposals until recently; agencies now wishing to submit proposals must first participate in the NSAI structure and identify needs from within the initiative. If further needs are then identified and funding is available, the RFP process will be implemented.

Region	Vendor Selection Process			Matching Requirement	Type Agreement with Major Partners	Comments
	Competitive RFP Process	Determined When WIRED Proposal Written	Other Mechanism			
Mid-Michigan		X		none	Sole Source Contract	Partner and vendor funding pre-determined. Other than partners contributing 6% for leadership functions (Prima Civitas), very little redistribution of funds.
West Michigan	X	X			Sole Source Contract	Year 1 "concept" funds pre-determined; subsequent "implementation" and "sustainability" funding by application.
Montana	X			Commerce RFP requires 1:1 match	MOU	Partners' funding pre-determined. Vendors developed through RFP process; OCHE chose 1 set of vendors for grant period; Commerce has RFP open to ongoing proposals.
Finger Lakes	X		X	1:1 match required for Scholarships; other RFPs require small percent match	Sole Source Contract	Major funding was pre-determined; ongoing Scholarship Program invites businesses to apply for short-term training funds for employees; WIRED issues periodic RFPs for other types of funding (STEM camps, emerging high-tech careers).
Piedmont Triad	X			1:1 match required for Focus Grants	Bylaws	Multiple rounds of RFPs focused on workforce development and education related to target industries; initial Focus Grants were screened by subcommittees and approved by WIRED Action Committee; more recent Transformation Grants include emphasis on innovation and encourage matching funds.
Wall Street West	X		X	1:1 match required for Innovation Investments	N/A	Contracts for infrastructure and communications; RFP process used for workforce development and education projects (Innovation Investments and Gap Investments) results in one-time grants.

Source: Site visit interviews and documents obtained by BPA/UCSD evaluation team

Mid-Michigan secured the cooperation of its partners through sole source contracts. In West Michigan on the other hand, partners also received initial funding through a sole-source contract, but must reapply for continued funding. Projects that do not prove successful or sustainable can be denied funding in subsequent grant distributions. Other regions sign MOUs with their major partners, particularly if all parties are either state or local government agencies or if no funds are involved.

Some of the regions (WAEM, California Corridor, Kansas City, Mid-Michigan, and West Michigan) also determined which organizations would provide which services during the proposal writing process. Overall, however, the regions were more likely to use a competitive application process to select providers of specific services. For example, Piedmont Triad has released multiple rounds of RFPs to select subcontractors to provide workforce development services and training related to the region's targeted industries. The Finger Lakes Steering Committee has reallocated funds and initiated an RFP process to encourage applications for workforce investment initiatives from a more diverse range of providers.

Specific application procedures vary according to the region's fiscal governance, with West Michigan and NCI using the most structured processes. In West Michigan, partners must be approved separately for three phases of funding: concept (agencies written into the WIRED grant as sole-source contractors); prototype/business plan; and implementation/sustainability (in which subcontractors must show a plan for post-WIRED funding). NCI uses a two-stage funding process in distributing the region's WIRED Opportunity Fund, which mirrors the process for federal SBIR and Small Business Technology Transfer (STTR)[36] grants. Phase I funding is to be used for exploratory and demonstration projects, and applications can be fairly brief. Phase II applications for implementation funding require a regional expansion plan to demonstrate how the initiative will achieve sustainability.

Some of the regions that use the RFP process require applicants to provide matching funds to supplement their WIRED grant funds. Northwest Florida requires all vendors to match their grant funds on a 1:1 basis, while other regions (such as the North Star Alliance, Montana, Finger Lakes, and Piedmont Triad) require matching funds for only certain types of applicants. The North Star Alliance's partner, MTI, requires businesses seeking technology transfer assistance to provide a 1:1 match, while other partners do not ask applicants for matching funds. Similarly, Montana's Department of Commerce requires firms applying for employee training funds to provide 1:1 matching funds, while other partners do not. Piedmont Triad required a 1:1 match for its initial Focus Grants, but only encourages applicants to provide matching funds for its more recent Transformation Grants. Finger Lakes requires a 1:1 match for training scholarships, but smaller matches for other types of contracts.

Finally, a few Generation I WIRED regions either accept unsolicited proposals or have issued grant announcements that allow applicants to submit proposals on an ongoing basis. NCI has a very flexible process for funding services; interested parties can call the project manager and

[36] The goal of the Small Business Technology Transfer (STTR) program is to move ideas from the laboratory to the marketplace and to foster high-tech economic development. This competitive program reserves a specific proportion of federal R & D funding for award to small businesses in partnership with nonprofit research institutions.

discuss an idea, which then may be funded after a basic proposal is submitted. Until recently, North Star Alliance accepted unsolicited proposals on a rolling basis. The initiative has now implemented a policy stating that unsolicited proposals will no longer be accepted: "instead, agencies wishing to submit proposals will first be asked to participate in the North Star Alliance structure and explore for further needs from within the grant. If further needs are identified and funding is available, the RFP process will be implemented and [the] originator of [the] initial proposal will be asked to submit at that time."[37] One of Montana's major partners, the Department of Commerce, has announced the availability of funds for employee training, and will accept proposals from businesses on an ongoing basis.

Compared to selecting partners and vendors during the proposal writing stage, both the competitive RFP process and acceptance of unsolicited proposals allowed the regions flexibility in allocating grant funds based on the changing needs and priorities of the initiative. Regions may attach more conditions to contracts awarded after start-up of the WIRED initiative, however, such as requiring matching funds, or using a multi-stage funding process that requires vendors to show evidence of sustainability.

Spending to Date

A detailed accounting of the regions' spending to date is not feasible at this time because consistent data are not available across all regions at the line item level. The regions have provided the evaluation team with budgets for the first grant year or for all three years; for total planned spending or for total disbursed funds. As the regions generate a more concrete spending history, the research team will gather uniform budget and expenditure data so that an analysis of differences in spending patterns across regions can be included in future reports.

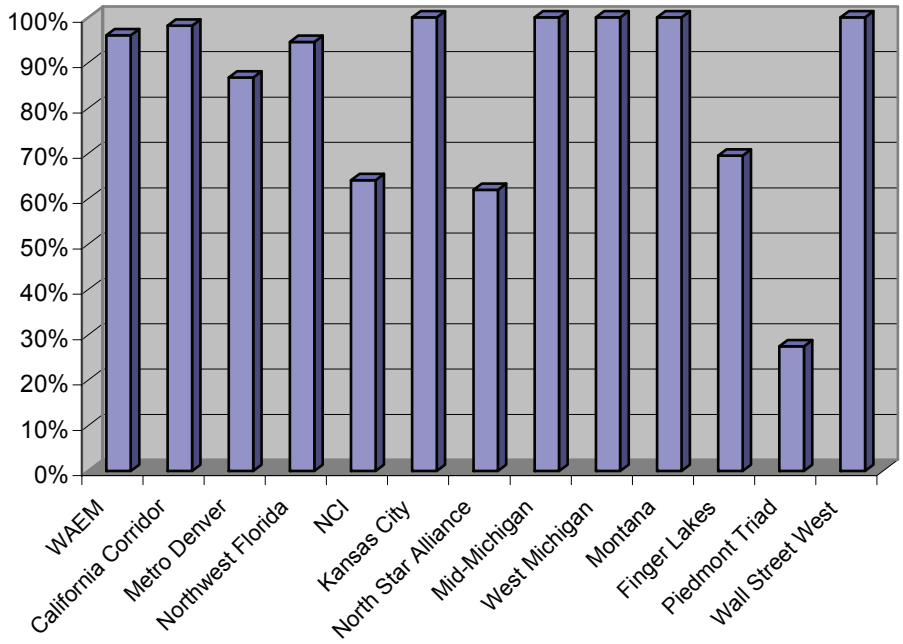
Through the end of September 2007, the Generation I WIRED regions have received WIRED grant funds ranging from $6.9 million to $7.5 million, depending upon their individual budgets. Figure 4.3 presents information from the regions' quarterly financial reports submitted to ETA. The figure illustrates that, including both expended and obligated funds, most regions have spent most if not all of their total WIRED grant awards to date. This was not the case for many WIRED regions during the first grant year, however, and most regions requested that remaining funds roll over to the second year.

Issues Related to Distributing WIRED Funds

Many of the Generation I regions encountered barriers to the timely allocation and distribution of WIRED funds. As Figure 4.3 shows, however, most of the regions had overcome these difficulties and had obligated almost all of their WIRED funds by the time of the evaluation visits. Issues related to distributing WIRED funds included lack of knowledge or understanding of federal regulations, delays in processing contracts, delays in reimbursements, and disagreement about funding decisions. These issues are further discussed below.

[37] *Maine's North Star Alliance Initiative K-12 Subcommittee Agenda* Wednesday July 25, 2007

Figure 4.3
Percentage of Total WIRED Award Obligated as of September 30, 2007[a]



[a] Total award amounts range from $6,899,053 to $7,500,000.
Source: Generation I WIRED Regions' Quarterly Financial Reports to ETA

Varying Familiarity with Federal Regulations. The WIRED SGA states that "grants will be funded with H-1B fees as authorized under Sec. 414(c) of the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277, title IV), as amended . . . Determinations of allowable costs will be made in accordance with the applicable Federal cost principles as indicated in Part VI.2. Disallowed costs are those charges to a grant that the grantor agency or its representative determines not to be allowed in accordance with the applicable Federal Cost Principles or other conditions contained in the grant. As discussed above, only costs that would be allowable with grant funds may be counted as part of the recipients' share of project costs."[38] In essence, allowable costs for the WIRED grants must be in line with the requirement of the legislation which indicates that the majority of H-1B funds are to be used for job training and scholarships.

In many regions, however, the individuals who read the original SGA (and, in some cases, the organization the governor selected to be the fiscal agent) were not familiar with the limitations that the source of WIRED funds might impose on spending. Regions that use the state agency responsible for workforce investment services as their fiscal agents were more likely to anticipate restrictions on H-1B funds than those who designated other organizations as fiscal

[38] DOL/ETA, *Workforce Innovation in Regional Economic Development (WIRED) Initiative Solicitation for Grant Applications,* http://www.doleta.gov/sga/sga/SGA-DFA-PY-05-04.pdf

agent. Nonetheless, even in regions with workforce investment fiscal agents, staff may not have been familiar with H-1B fund restrictions if their backgrounds were in program management instead of finance.

In July 2006, ETA issued a memo to the WIRED regions clarifying allowable costs under H-1B funding, followed by a webinar/training session. The memo instructed regions that, "H-1B WIRED funds may be used to pay for the costs of training; curriculum development and dissemination; other career and labor market information; outreach and recruitment; tools, equipment and supplies used for training purposes; and other related costs. On the other hand, H-1B WIRED funds cannot be used to pay for product R&D; public infrastructure improvements; inventory acquisition; or general business capitalization or expansion even though these activities may result in the creation of new jobs."[39] (The memo was updated in June 2007.)

Most WIRED applicants were not familiar with H-1B restrictions at the time their proposals were written, so unallowable costs emerged as an early barrier to both implementation of activities and distribution of funds in WIRED regions. Several regions included in their implementation plans activities that were unallowable under the H-1B regulations, only to find after the plans were approved that other sources of funds would have to pay for those activities. For example:

- North Star Alliance has not been able to distribute funds that had been earmarked for a North Star Technology Fund and a business assistance grant program for marine and composite companies. To replace the budgeted funds, members of the region's capitalization pillar committee are currently forming a revolving loan fund with local banks to fund business expansions.
- Wall Street West's WIRED strategy was heavy on marketing and outreach, and the region has had difficulty raising funds for those activities not supported by ETA funding.
- Major delays occurred in awarding the Entrepreneurship Grants in Northwest Florida because the originally planned grants to businesses were not allowable under the WIRED grant. Instead of using funds as venture capital to support small entrepreneurs as planned, the initiative is instead funding employee training, and is moving forward quickly with the revamped program.
- In California Corridor, restrictions surrounding intern pay forced an industry partner to move paid interns into voluntary mentor positions, which has been counterproductive in terms of attracting quality people for internship positions.

At least one region assumed that, despite the fact that the Generation I WIRED SGA stated that administrative costs would be negotiated at the time of grant award, WIRED limited these costs to 15%, as is required of the WIA formula grants to the states. Ultimately, ETA decided not to limit the administrative costs that regions could charge to WIRED. While this ruling has not

[39] *WIRED Initiative: Uses of the H-1B Funding Revenue*. Subsequently, ETA has provided two more guidance memos for the WIRED Initiative, one addressing economic development activities and another on allowable uses of funds for youth services.

impacted most regions, California Corridor did decide to hire additional staff after this decision was made to ensure appropriate administrative oversight and effective management of that region's substantial scope.

Delayed contract processing. In several regions, including North Star Alliance and West Michigan, the rollout of WIRED activities was delayed because partners were waiting for their contracts to be signed. Similarly, intellectual property language in California Corridor's WIRED contracts created serious project start-up delays with some partners. In Metro Denver, contractual issues regarding indemnification against liability created a significant administrative barrier to the timely distribution of WIRED funds. The City and County of Denver allocated $800,000 from its general fund to cover WIRED activities until the contractual issues between the state, city and county, and WIRED management organization were resolved.

Delayed reimbursements. In general, the fiscal agent for a WIRED region is either a state agency or a large organization such as a university, and the bureaucracy of such entities can extend the turnaround time for reimbursement requests. In Montana, state guidelines stipulate that organizations may not be paid in advance for costs associated with training, so the region has only expended a small amount of its grant because grant administrators are waiting for approved applicants to incur training-related costs before reimbursing these partners. Purdue University's Center for Regional Development, the fiscal agent for NCI WIRED, uses a pay-as-you-go system, which means that in addition to the delays inherent in payment processing at a large university, the distribution of funds happens in smaller increments.

Across the regions, smaller nonprofit WIRED partners noted that they have difficulty waiting for reimbursement because they have very little cash flow. In Piedmont Triad, however, if an organization does not have sufficient funds to wait for a reimbursement check, the Piedmont Triad Partnership will work with them to manage their cash flow needs until the quarterly payments are processed.

Dissatisfaction within the region about the distribution of funds. In several regions, community partners have been surprised by the funding decisions made by WIRED leadership, and funding distribution has contributed to intra-regional tensions. West Michigan WIRED's leadership stressed that funds would be distributed based on impact rather than equity, which resulted in Innovations in the City of Grand Rapids receiving most of the funding. This has fueled the perception in the region's outlying areas that Grand Rapids has disproportionately benefited from what was supposed to be a regional initiative.

Matched and Leveraged Funds

ETA did not require applicants to secure matching funds, or propose cost-sharing or cost participation, to be eligible to receive a WIRED grant. Nonetheless, the original SGA encouraged applicants to leverage the resources of all strategic partners whenever possible. Subsequent communications from ETA, including presentations at WIRED Academies, have stated that the WIRED grants are seed money and that the regions will need to secure other sources of funding to cover the full range of activities that will be needed to transform their local economies. The evaluation defines leveraged funds as any funds other than the WIRED grants

that are specifically supporting WIRED activities or any project within the WIRED region that is related to the vision and objectives of the region's WIRED initiative.

Figures 4.4 and 4.5 use data that ETA collected from the regions about the leveraged funds received in the regions at roughly the time that the evaluation visits were completed. These figures do not include pending awards, or grants for which the amount had not been determined.

- As Figure 4.4 illustrates, the majority of Generation I WIRED regions have taken ETA's advice to heart, and the regions have raised an average of $16,812,140 in leveraged funds. The Finger Lakes region leads the group with nearly $60 million in leveraged funds. Three regions—Piedmont Triad, California Corridor, and West Michigan—had not reported any received leveraged funds to ETA at the time these data were collected. This does not mean that these regions had not secured resources in addition to their WIRED grants, however. Staff from Piedmont Triad provided the evaluation team with leveraged funding information, which has been included in the figure. In addition, all three of these regions are in the process of securing additional funds:

Figure 4.4
Total Leveraged Funds By WIRED Region

Region	Leveraged Funds Reported to ETA	Percent of Leveraged Funds In All Regions
WAEM	$550,000	0.3%
California Corridor	$1,500,000	0.8%
Metro Denver	$11,175,347	6.0%
Northwest Florida	$6,700,000	3.6%
NCI	$4,203,015	2.3%
Kansas City	$8,811,000	4.7%
North Star Alliance	$7,200,000	3.9%
Mid-Michigan	$27,475,493	14.7%
West Michigan	N/A	N/A
Montana	$33,988,782	18.2%
Finger Lakes	$58,079,900	31.2%
Piedmont Triad	$1,750,000	0.9%
Wall Street West	$25,000,000	13.4%
TOTAL	**$186,433,537**	**100.0%**
Average	**$15,536,128**	**9.1%**

Source: ETA, current as of 8/27/2007, except for data for the California Corridor, Piedmont Triad and Wall Street West, which were provided by regional WIRED staff.

- Piedmont Triad, California Corridor, and West Michigan are three of the seven[40] regions that are demonstration sites for the National Institute of Science and Technology (NIST) Hollings Manufacturing Extension Partnership (MEP) (amount to be determined), a pilot initiative to identify opportunities for aligning MEP goals and WIRED activities;
- Piedmont Triad requires its subcontractors to provide matching funds (either cash or in-kind);
- California Corridor has applied for Department of Defense funding (amount to be determined) to support STEM activities; and
- West Michigan has been selected for Energy Lab Site Visit funding from the Department of Energy (amount to be determined).

Across all Generation I regions, the largest source of leveraged funding is federal grants, providing one-third of the additional funds available to support WIRED activities (see Figure 4.5). Foundations (16%) and private sources (28%) also contribute substantial proportions of the leveraged funds reported by the regions. These funds represent a particular success for the regions, since they mean that diverse stakeholders are supporting the WIRED process. State and local funding account for only 17% of total reported leveraged funds; in Colorado and California, this may be explained by spending restrictions imposed by taxpayer bill of rights legislation. One notable success in leveraging local government funding is Mid-Michigan, where, as a result of WIRED presentations to the Lansing and East Lansing City Councils, each Council committed $10,000 per year for three years to the Prima Civitas Foundation to continue its work in regional economic development.

Figure 4.5
Leveraged Funds For All Generation I WIRED Regions By Funding Source

Source	Percent of Total	Amount
Federal	34%	$62,037,571
Private/Corporate[1]	28%	$51,315,829
Foundation	16%	$30,098,345
State	16%	$29,349,465
Multiple	4%	$8,276,433
Local	1%	$1,984,080
Education	1%	$1,871,814

[1] Private funds include membership dues, employer matches for training programs, corporate investments, and private equity (through the sale of stock).

Source: ETA, current as of 8/27/2007, except for data for Piedmont Triad and Wall Street West which were provided by regional WIRED staff.

[40] Montana, Finger Lakes, Kansas City, and NCI are the other four regions that are part of this demonstration.

Most regions did not provide information on in-kind contributions. In the four regions that did discuss in-kind contributions, support included physical building space, in-kind technical assistance and consulting, and materials donations for K-12 education programs. In-kind contributions are a largely untapped resource. While most regions did not quantify the value of their in-kind contributions, the very fact that local businesses are donating materials to K-12 education programs represents a collaboration that might not have occurred before WIRED.

Several regions have also refocused pre-existing funding in response to WIRED activities. In North Star Alliance, for example, an educational institution had worked with the Maine Department of Labor to develop an apprenticeship program, but until the WIRED grant was awarded, no funding was available to cover on-site training for apprentices. Now, employers can get training funds through North Star Alliance's WIRED grant for their apprentices.

Success in obtaining matching funds also varies by region, in large part due to differences in regional grantmaking or contracting structures. In Northwest Florida, for example, the WIRED initiative is essentially set up as a grantmaking entity. Almost all of the WIRED funds are distributed through this mechanism, which requires a minimum 100% match from the recipient, thus doubling the amount of WIRED funds available. This has been a very successful way of extending the amount of the grant award, and means that the region's reported leveraged funds are largely a function of the amount of funds they have disbursed. Piedmont Triad, the North Star Alliance, Montana, and Finger Lakes employ a similar requirement for at least some of their subcontracts. In several other regions, WIRED-funded programs charge a fee for services and/or membership to generate program revenue. An innovative approach under consideration by one of North Star Alliance's WIRED industry partners is establishing an internal training trust fund to continue the apprenticeship and training programs currently supported by WIRED funds.

Many regions also actively encourage their grantees or subcontractors to locate post-WIRED funding. West Michigan provides grantees with access to Grant Station, a searchable database of grant opportunities, to help them find replacement funding after their WIRED funds have been expended. Wall Street West is also using Grant Station to explore funding for 2010 and beyond, as well as to finance activities that cannot be paid for with WIRED funds; additionally, this region's collaborative is pooling organizational resources to engage a professional grant writer to secure funding to cover WIRED activities after the WIRED grant expires.

Other regions are also trying to secure resources to fund R & D activities and entrepreneurship. One of the key activities in the Finger Lakes region is High Tech Rochester's SBIR Outreach and Access program, which provides assistance to SBIR and STTR applicants in preparing their grant proposals, and links them to other available resources. Northwest Florida WIRED partners are in the process of identifying potential angel investors and creating a network that supports entrepreneurs in the region. In the North Star Alliance, as mentioned earlier, the WIRED capitalization team is now in the process of raising funds from local banks to create the North Star Alliance Capital Corporation, a $6-8 million revolving loan fund for companies in the region's target industries to use for business expansion and R & D activities.

The administrative policies and procedures implemented by the Generation I WIRED regions to disburse and leverage WIRED funding are diverse and complex. Equally complex are the

measurements and metrics instituted by the WIRED regions. The final section of this chapter describes the systems and methods used to record and measure progress toward regional transformation.

How Regions Document and Assess Success

ETA has provided the regions with guidance on how to approach measuring their success, which consists of three major components:

1. The common measures of: a) entered employment, b) employment retention, and c) average earnings;
2. A range of additional metrics appropriate to the specific goals and activities of each region; and
3. The evaluation effort that will build on this first Interim Report.

This framework calls for regions to leverage the existing workforce investment system infrastructure and reporting mechanisms to report WIRED participant data through the Workforce Investment Act Standardized Record Data (WIASRD) system. ETA recognizes, however, that while the common measures are very important, information about partnerships, capacity-building, economic development, innovation, and system transformation is essential to telling the WIRED story. Therefore, the framework relies on regions to define and adopt the metrics most relevant to their planned activities.

This section first discusses the processes that the Generation I WIRED regions have used in defining appropriate measures to document the success of their activities, and the types of measures they have selected. This is followed by a summary of the data collection and reporting procedures that the regions are developing.

Defining Measures of Success

The process of identifying and implementing measures of success has been filled with challenges because of the complexity of the WIRED objectives. The goals of most of the regions have social and cultural dimensions, in addition to economic development and workforce investment changes. ETA staff have worked diligently to provide guidance and technical assistance to the regions to help them assess progress, despite early delays in clarifying how to operationalize the common measures requirements in the context of the WIRED grants. Regions are breaking new ground with the types of goals and strategies that characterize this initiative, and most have spent the early months of their grants building their leadership structures, pulling partners together, and creating a shared vision of the region's future. For most regions, the process of developing metrics was moved forward during the development of their implementation plans. Many regions have defined measures of success for each major project or subcontractor, but may not yet have fully spelled out how success will aggregate across their whole regional effort. Some continue to further refine their measures. For example:

- Piedmont Triad has convened a metrics subcommittee to develop measures of success for the region. The subcommittee is charged with designing metrics that a range of stakeholders

(including agency partners, industry partners, and ETA) consider to be practical, applicable, and inclusive of both traditional and transformation-based measures.

- Each of California Corridor's project leads is responsible for creating their own project metrics. The state workforce agency (the California Employment Development Department, or EDD) is responsible for common measures and works with local workforce boards to collect data. A WIRED Metrics Task Force comprising representatives from ETA, EDD, CSA, and WIRED partners is determining how this will work. CSA is also discussing implementation of the common measures with EDD, awaiting the definition of 'participant' and other relevant information.

Appendix E presents the measures of success that regions have identified. The measures can be categorized into three different types designed to address three different purposes:

- Documenting implementation of major regional initiatives and activities;
- Documenting progress toward goals and interim achievements; and
- Documenting outcomes or ultimate results, i.e., regional transformation.

Each of these is discussed below.

Documenting Implementation

The first and simplest measures of success focus on documenting the implementation of project activities and milestones. For example:

- Kansas City identified fully equipping a biotechnology lab with the equipment necessary for teaching a quality biotechnology program as an important implementation milestone;
- Wall Street West identified ongoing effective communication with economic development organizations and stakeholders as an implementation measure;
- West Michigan reported as a success that their Innovation Curriculum project finalized development of its first learning module to teach the skill of synthesis, a skill critical to developing innovative thinking; and
- California Corridor reported that A.S. degrees in Electronics Technology and Engineering Technology with an emphasis in Mechatronics were approved by the California Community Colleges' Chancellor's Office.

Documenting Progress

While documenting the implementation of key project activities and milestones provides evidence of early successes, the Generation I regions' measures also include qualitative measures of progress towards achieving specific goals and objectives. Some of these measures include the degree to which their initiative:

- Achieved a shared understanding of problems/opportunities;
- Formed new initiative partnerships;
- Achieved a shift in emphases in policy issues and priorities;

- Changed investment priorities;
- Changed what is taught in existing institutions and organizations;
- Established new organizations and/or networks;
- Attracted new investments in business development, workforce investment, and general education;
- Formed new companies or business partnerships;
- Increased the number of jobs in the region, generated by existing businesses, new enterprises, and/or as measured by the number of businesses attracted to move to the region;
- Changed existing industries, in terms of increased job retention, business growth, or changes in average wages;
- Changed the number of professional support firms available in the region; and
- Changed how leaders and citizens talk and/or feel about the region, and the extent of their optimism about the future.

Many of these measures of progress are largely qualitative and fairly subjective. In reality, these metrics may be difficult, if not impossible, to document. Following are examples of some of these measures from specific Generation I regions.

- One Wall Street West measure is achieving "sustainability of innovation environment at conclusion of grant period."
- WAEM defined one of its progress measures as "the new 'Anytime, Anywhere' training system has generated a great deal of public support."
- Northwest Florida is measuring whether "there has been good press coverage of the WIRED Initiative since the beginning."

The regions have also identified numerous quantitative measures of progress. Such metrics should be easier to document than the qualitative measures. Examples include:

- California Corridor will measure whether the initiative's Mechatronics Degree Program will achieve a participant retention rate of 93% at the end of the first course.
- North Star Alliance is recording attendance at promotional events and counting the number of positive responses to industry satisfaction inquiries.
- Wall Street West is measuring whether enrollment in identified Centers of Excellence at universities has increased.
- Montana is counting the number of individuals using the region's market information clearinghouse.

Some regions have created metrics that are potentially measurable but complicated to document. One example is the following West Michigan measure: "Companies involved in both SOURCE/TEAM "clusters" experienced major savings from improved employee retention, reduced hiring costs, and increased output from training courses. Additionally, by putting

welfare recipients to work, the state's social service system has experienced reductions in payments to those workers." This measure might impose a significant burden on the initiative's industry partners by requiring them to track and report employee retention, costs associated with hiring, and employee productivity before and after participating in training.

Documenting Outcomes

Finally, WIRED regions have identified a variety of different outcome measures. While the regions will likely track performance on these measures over time, achievement of some may not be fully evident until the end of the grant period, or even beyond. Such metrics include:

- Number of new jobs created in targeted industries;
- Increased wages in targeted industries;
- Retention of older workers;
- Number of new businesses created;
- Number of new patent applications;
- Increases in angel investments in targeted industries;
- Increases in public and private grant funds and other leveraged resources;
- Number of trainees completing vocational programs;
- Number of incumbent workers with upgraded credentials; and
- Increases in the number of students completing STEM postsecondary degrees.

In addition to the regions' documentation of such measures, the evaluation team will analyze data from existing data sources to assess changes in these metrics over time.

While some regions identified metrics that are quite long-term, others regions were careful to define their measures of success in terms of benchmarks that are potentially achievable within the time frame of the WIRED grant. For example, Metro Denver identified five key three-year outcome objectives:

- Increase the number of employees in four targeted industry sectors by 10%;
- Increase the number of incumbent workers enrolled in training in the region by 20%;
- Increase the number of students taking advanced STEM courses by 10%;
- Increase the number of low-income students in participating districts who go directly from high school to college by 20%; and
- Increase the number of business start-ups in targeted sectors by 10%.

Data Collection and Reporting

The data collection activities of the regions so far have primarily been focused on data required for asset inventories and for completing other project activities. Other than asking subcontractors or project leads to contribute to quarterly narrative reports, little region-wide data

collection has taken place for the purpose of documenting WIRED success. Many individual projects and initiatives have been collecting their own data on numbers of attendees at events and numbers of students participating in education and training programs, but most regions have done little more than report these as bullet points in their quarterly narratives. Most are still determining how they will go about aggregating data across the region to measure the region's overall success.

Common Measures

The common measures serve as outcome metrics for the Generation I WIRED regions' talent development goals. Since ETA has designed a means of using the WIASRD system for documenting achievement of the common measures, the ability to collect these data region-wide depends on the ability of the regions to develop strong partnerships with state and local workforce investment system partners. Some regions have established mechanisms to collect the data, while others have not yet worked out the details of how this will be accomplished. For example, in Montana and North Star Alliance, the WIRED staff located in the One-Stop Career Centers will take responsibility for collecting the common measures data. California Corridor is currently identifying individual One-Stop Career Centers that will collect data for WIRED participants in their local workforce areas.

Use of Contractors to Document Success

A number of regions have contracted with research firms to help them measure their success. For example:

- Mid-Michigan has received funding from the Mott Foundation to hire a contractor to document the implementation of their WIRED grant and share what they have found within the region and with the other regions.
- With the help of a contractor, California Corridor is identifying success stories and accomplishments across all of its projects. This process has encouraged projects to be reflective about what they are doing and to distinguish the specific outcomes, successes, and experiences from which others might learn.

Reporting Success

The WIRED regions prepare progress reports and submit them to ETA on a quarterly basis. The quarterly reports are currently the regions' primary mechanism for reporting their progress and outcomes to date. For many regions, these are the only reports currently being produced. Some regions have already begun to take advantage of the marketing potential of disseminating early success stories and evidence of progress toward their WIRED goals, however. For example:

- Finger Lakes has summarized its achievements in annual reports for the public which are posted on the region's website. Called "Wired for Growth," the reports summarize the

number of participants who completed various training programs, the number of new jobs created, and the amount of capital raised to support entrepreneurs.[41]

- California Corridor highlights the Success Stories System on its website as one of its accomplishments. Accomplishment profiles focus on the significant benefits, milestones, and products achieved by Corridor projects and partners while pursuing their various goals. The region currently has 65 accomplishments posted on its website.[42]
- NCI posts its quarterly reports to ETA on its website and recently made its summary of performance on leading indicators available online as well.[43]
- Through its Mott Foundation-funded documentation of the implementation of its WIRED initiative, Mid-Michigan is documenting and sharing its successes in an electronic newsletter.

By the end of 2008, the evaluation team will be able to report much more on the progress regions have made toward accomplishing their goals, and on the evidence of their success. The team looks forward to observing the Generation I regions' progress in the area of measuring performance over the coming year, and to seeing if more regions see the marketing potential of documenting success and learn from each other via conferences and sharing materials.

Summary

Many of the strategies and activities that the WIRED regions employ have multiple purposes and meet more than one objective, such as a STEM high school education program that also teaches the principles of entrepreneurship. Some activities have ancillary benefits, such as a collaborative asset-mapping project that strengthens regional identity. As the first section of this chapter illustrated, the Generation I WIRED initiatives have relied on their partners throughout the region to plan, fund, and implement the wide array of projects they are using to achieve their goals.

Funding posed both a significant challenge and an opportunity to the Generation I WIRED regions. Much of the first year of implementation centered on complying with federal regulations governing the WIRED grant. While regions struggled with meeting the grant requirements, they succeeded in using their WIRED funds as seed money in order to support transformative change.

The WIRED regions have defined and adopted the metrics most relevant for telling their own unique stories. At the same time, they will be collecting data to document their performance on the common measures. At the time of the evaluation team's first site visits, the regions were still in the process of defining the procedures that they will use to document their implementation, progress, and outcomes. If the regions see the marketing potential of documenting their progress, the quality and frequency of their reporting is likely to increase.

[41] See http://www.fingerlakeswired.com/docs/FLWreport11.07.pdf
[42] See http://innovatecalifornia.net/success/search/results/list/all#three
[43] See http://www.indiana-wired.net/program_leader_documents.asp

Chapter 5: Social Network Analysis

As Chapter 3 discussed, a critical component of WIRED regional structures and roles is the social networking that characterizes collaboration and partnerships. During the first round of site visits, the evaluation team collected preliminary social network data to explore ways of analyzing and characterizing the interactions among each region's partners. This first look at adapting social network analysis methods to the WIRED Initiative lays the groundwork for a more comprehensive social network analysis that the research team will conduct through future surveys and site visits.

This chapter first defines social network analysis, then gives a brief description of the data that the evaluation team collected from site visit respondents in the Generation I WIRED regions, and concludes with a preliminary analysis of this data.

What is Social Network Analysis?

Communities are built on connections. Better connections usually provide better opportunities. The evaluation's social network analysis explores the hypothesis that regions that build strong collaborative networks thick with connections will be more competitive in the new economy than those with more diffuse networks. By mapping these networks, the evaluation team can better understand the connections of which they are made, and their overall strength.

Social network analysis is based on the assumption that relationships among interacting units are important. The unit of analysis is not the individual, but a network consisting of a collection of individuals and the linkages among them. A network map shows the nodes and links in the network. Nodes can be people, groups, or organizations. Links can show relationships, flows, or transactions. A link can be directional.

Social network analysis can provide a revealing snapshot of a business ecosystem at a particular point in time, and can help answer many key questions in the community- and collaboration-building process:

- Are the right connections in place? Are any key connections missing?
- Who is playing leadership roles in the community? Who is not, but should be?
- Are there "stars" or facilitators who are linked with a very large number of people, and/or isolated people who are only linked with one or two others?
- Are collaborative alliances forming between local businesses?
- How do patterns of association among entities evolve over time?[44]

[44] Krebs, Valdis and June Holley. "Building Smart Communities through Network Weaving," http://www.orgnet.com/BuildingNetworks.pdf

This preliminary analysis focused on four measures of social networks that can address such questions. The analysis section later in this chapter presents preliminary observations of how these measures might apply to the Generation I WIRED regions, providing examples of how each measure looks in a social network map.

- **Centrality** – The count of the number of ties to other actors in the network. Common wisdom in personal networks is the more connections, the better; however, this is not always so. What really matters is where those connections lead, and how they connect the otherwise unconnected. Some individuals may have a lot of connections but only to others in their immediate cluster, thus connecting only to those who may already be connected to each other.
- **Centralization** – The extent to which a small number of nodes have a large number of links. A centralized network will have many of its links dispersed around one or a few nodes, while a decentralized network is one in which there is little variation between the number of links each node possesses. If these nodes are removed or damaged, the network quickly fragments into unconnected sub-networks. A highly central node can become a single point of failure.
- **Strength of Relationships** – The extent and nature of interactions. While this preliminary analysis used frequency of contact as a proxy for the strength of a relationship, the upcoming survey of WIRED partners will explore other dimensions of the nature of relationships.
- **Betweenness** – The degree to which an individual lies between other individuals in the network; the extent to which a node is directly connected to nodes that are not directly connected to each other; intermediaries; liaisons; bridges. A node with high betweenness has great influence over what flows—and does not flow—in the network, and if that individual leaves the network, these connections might be broken.

Collection of Social Network Data from the WIRED Regions

For this preliminary exploration of social network analysis among the Generation I regions, the evaluation team's site visitors simply asked each respondent to identify "five individuals with whom you have significant contact in the context of WIRED." The term significant was defined to include meaningful and important contact, not necessarily the most frequent contact. For each of the five individuals identified, respondents were asked to provide three key characteristics:

- Organization – Coded into organizational types that included workforce investment, economic development, education, government, industry, and research;
- Job Title – Coded into three levels within organizations that included leaders and decision-makers, managers and administrators, and staff who conduct the day-to-day business of the organization; and
- Frequency of Contact – Coded into six categories ranging from daily to annual.

Thus, the social network dataset consisted of the name, type of organization, and level within organization for both the respondent and his or her five important contacts, plus the frequency of contact that the respondent reported for each contact.

Several important limitations in this first round of data collection should be taken into account when interpreting the data:

- Only site visit respondents were asked to name contacts. Therefore:
  - Not all individuals in the network were represented. Although every effort was made to include the most critical respondents in the site visits, many other individuals who are important to the networks were not included.
  - The contacts named by the respondents were not in turn asked to name their contacts, so the data do not include reciprocal information;
- Respondents were asked to name only five individuals, which for some was far too few to accurately reflect their significant interactions;
- This effort should be considered a pilot test of social network data collection. Despite training every site visitor in the protocols of this analysis, staff were inconsistent in how hard they pressed respondents for complete data and how some of the categories were interpreted.

In collecting social network data throughout the remainder of the evaluation, the evaluation's emphasis will be on identifying and securing responses from as many relevant individuals as possible in order to provide a more accurate picture of the regions' collaborative networks. In the meantime, given these limitations, the preliminary data described below should be understood as merely illustrative examples that begin to show the kinds of insights that social network analysis might contribute to understanding the WIRED Initiative.

Preliminary Analysis of Social Network Data

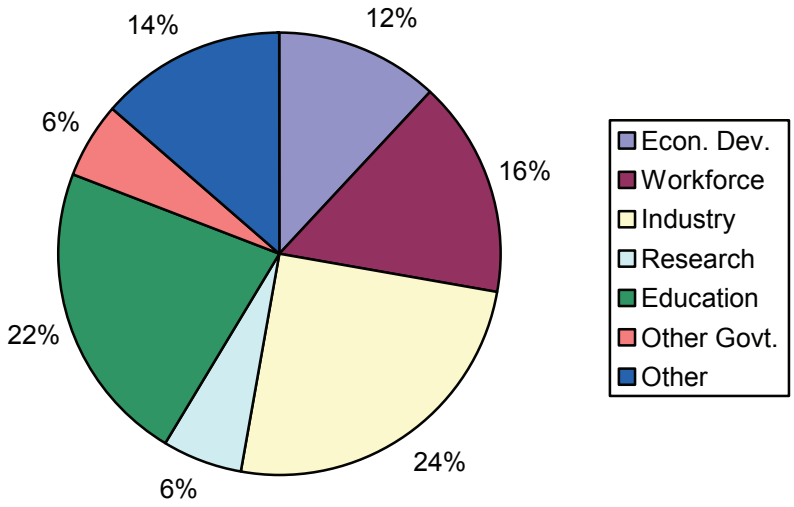
Overall results for the key variables of interest (organization type, level within organization, frequency of contact) across all of the regions are summarized in the figures below. Appendix C includes a set of tables that break out results by region. The end of the chapter includes social network maps for each region[45] that provide a visual display of the social networks and linkages between collaborators.

Organizational Type

Figure 5.1 shows the organizational affiliation of all the individuals in the social networks (including both the respondents and the individuals with whom they have contact). The largest number are from business and industry (24%), followed closely by those from education (22%), workforce investment (16%) and then economic development (12%). The relatively large number from "other" organizations suggests a need to refine these categories for future data collection efforts.

[45] Data for North Central Indiana (NCI) are not available.

Figure 5.1
Types of Organizations in Regional Networks



Source: BPA/UCSD Evaluation Team site visit interviews

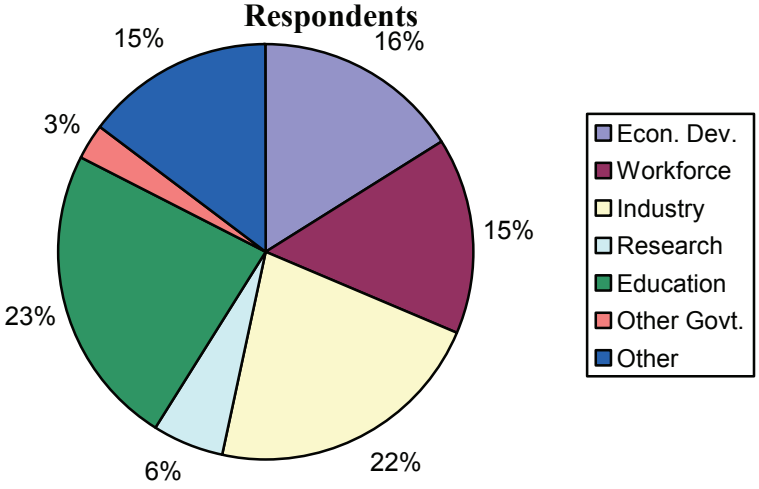
These proportions[46] fairly closely reflect the organizational types of the respondents themselves as shown in Figure 5.2, suggesting that the respondents were fairly representative of the collaborators in the network. (Another possibility is that respondents were more likely to name contacts in the same type of organization as their own. As is shown later, however, the social network maps suggest this is not the case.) These results suggest that the WIRED Initiative has succeeded in engaging industry in regional efforts.

While the figures in this chapter summarize data across regions, the tables in Appendix D show the variations between regions. Table D.1 in the appendix shows that the proportion of collaborators of each type varied significantly across regions:

- Business and Industry – from 5% to 38%;
- Education – from 10% to 40%;
- Workforce Investment – from 5% to 29%;
- Economic Development – from 5% to 18%;
- Research – from 0% to 15%;
- Government – from 0% to 43%; and
- Other – from 4% to 28%.

[46] For the percentages in this graph, the unit of analysis is the individual. When the same calculation is performed with the *organization* as the unit of analysis (thus eliminating multiple contacts from the same organization), the two most prevalent types of organizations are still industry (29%) and education (20%).

Figure 5.2
Types of Organizations of Site Visit Respondents



Source: BPA/UCSD Evaluation Team site visit interviews

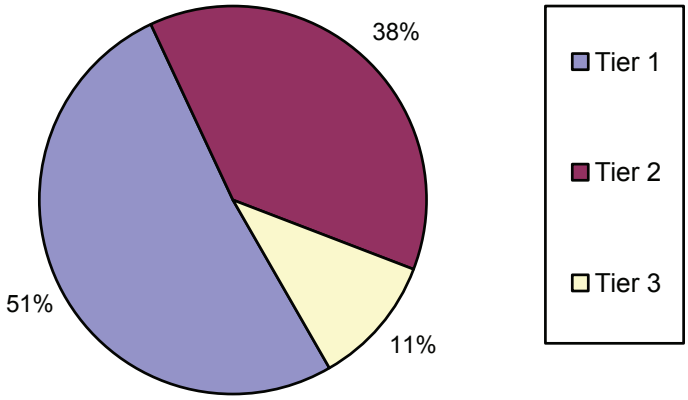
Level Within Organization

One of the key areas of interest in assessing how effective partnerships work is understanding how collaboration works at different levels within organizations. As a first look at this issue, the evaluation team collected data on a simplified indicator of organizational roles categorized into three levels:

1. Tier 1 includes Leaders, Strategists, Visionaries, Decision-Makers – Examples in this category could include WIRED leadership, company presidents, CEOs, upper level managers, executive directors, members of Boards of Directors, benefactors and foundations, civic leaders, or chancellors;
2. Tier 2 includes Implementers, Managers, Administrators – Individuals in this group have the authority to make things happen, and could include WIRED program managers, partner organization managers, directors of operations, mid-level management, division heads, or college deans; and
3. Tier 3 includes Day-to-Day Staff – These individuals conduct the day-to-day business of the organization, and may include front-line employees, clerical and supporting staff, professors, project service providers, instructors, and trainers.

As Figure 5.3 shows, most of the contacts reported were at the decision-making or managing levels within their organizations. About half of the contacts were at the most senior levels in their organizations, and 38% were at the mid-level. Only 11% of the contacts held positions at the day-to-day level in their organizations. Again, the distribution is very similar to the

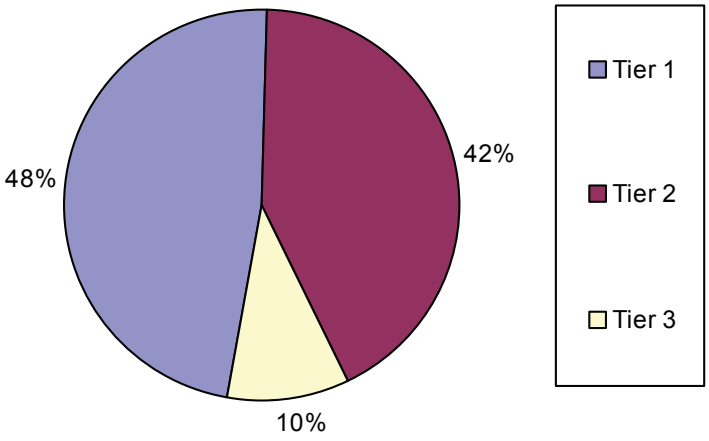
Figure 5.3
Organizational Roles in the Regional Networks



Source: BPA/UCSD Evaluation Team site visit interviews

organizational levels of the respondents themselves, shown in Figure 5.4. Given that respondents were asked to name contacts with whom they had significant interaction in the context of WIRED, these findings suggest that the Generation I WIRED regions have been successful in securing the participation of the decision-makers who operate the partner organizations, believed to be an important step in ensuring the success of any endeavor but vital to the success of collaborative initiatives.

Figure 5.4
Organizational Roles of Site Visit Respondents



Source: BPA/UCSD Evaluation Team site visit interviews

Once again, the regions vary in the proportion of respondents and contacts at each organizational level. Table D.2 in Appendix D presents the distribution for each region:

- Tier 1 – from 33% to 60%;
- Tier 2 – from 18% to 52%; and
- Tier 3 – from 2% to 22%.

Who Interacts with Whom?

Given that the distribution of contacts across the different organizational levels is very similar to the levels of the respondents themselves, one might assume that individuals tend to relate most frequently to their peers at the same level in collaborating organizations. These preliminary data suggest that is not uniformly true, however. As Figure 5.5 illustrates, individuals at the top level in their organizations were most likely to report contacts with individuals at their own level within collaborating organizations. Two-thirds (65%) of the contacts reported by top-level respondents also held senior level positions in their organizations. In contrast, only 37% of the contacts reported by mid-level respondents were at their same level, while half held top-level positions. Among respondents who were day-to-day staff, only 17% of the contacts they reported held positions at their same level (48% were mid-level and 35% were top-level).

Figure 5.5
Proportion of Contacts at Each Level within Collaborating Organizations

	Respondent		
Contact	**Tier 1** (48% of respondents)	**Tier 2** (42% of respondents)	**Tier 3** (10% of respondents)
Tier 1	65%	51%	35%
Tier 2	30%	37%	48%
Tier 3	5%	12%	17%

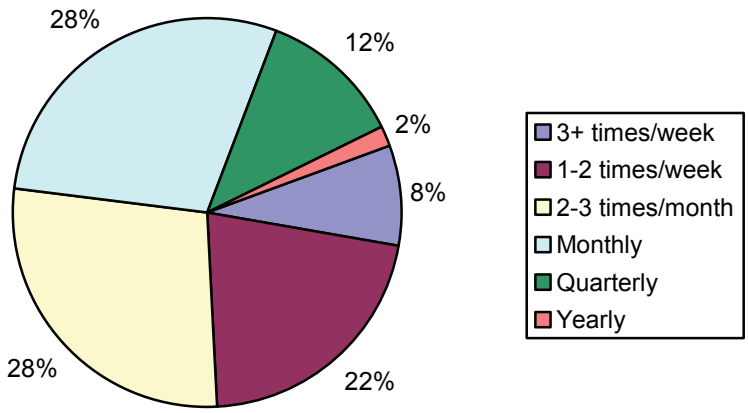
Source: BPA/UCSD Evaluation Team site visit interviews

In part, these findings are a result of the main question that the evaluation team asked. As clarification for what constituted a significant contact, site visitors asked respondents to identify "the most important people for WIRED outside your own organization in terms of getting things done, or changing the way that organizations function and work together."

Frequency of Contact

As Figure 5.6 illustrates, respondents across the regions reported that the majority of collaborators have contact monthly (28%) or two to three times a month (28%), followed by once or twice a week (22%), quarterly (12%), and more than three times a week (8%).

Figure 5.6
Frequency of Contact in Regional Networks



Source: BPA/UCSD Evaluation Team site visit interviews

Table D.5 in Appendix D shows the variation in frequency of contact across regions:

- Three or more times per week – proportion of responses ranged from 2% to 23%;
- One to two times per week – from 15% to 30%;
- Two to three times per month – from 20% to 45%;
- Monthly – from 11% to 42%;
- Quarterly – from 3% to 27%; and
- Annually – from 0% to 5%.

This variation is also apparent in the average frequency of contacts across the regions. In eight of the regions, respondents estimated being in contact with partners two to three times a month overall. Collaborators were in contact less frequently in three of the regions (Finger Lakes, Northwest Florida, and Wall Street West), where the average frequency was monthly. On the other hand, collectively, respondents from North Star Alliance reported being in contact with partners once or twice a week.

Social Network Mapping

Once the data collection methodology is refined and the samples are more comprehensive, these statistics, while of some interest in and of themselves, may also turn out to be analytically interesting in terms of their relationship to regional success. A powerful analysis tool that allows a closer look at the nature of the linkages is the social network map, mentioned earlier in this chapter (also sometimes called a web or net). Again, the maps provided here are illustrations of how these graphics can be used to analyze the data and not offered as accurate maps of the social networks in the regions. A more complete and refined dataset is needed in order to accurately characterize the regions' social networks. Meanwhile, however, these illustrations do shed some light on some of the interesting variations in networks among regions.

As mentioned earlier, social network analysis uses four key measures to examine networks: centrality, centralization, strength of relationships, and betweenness. The following are some initial observations about these four measures that are based on a review of the maps or network graphics. These observations do not reflect quantitative analysis of these measures for this preliminary analysis, in part because of the relatively small sizes. The observations that follow are based on interpretation of some of the patterns apparent in the graphics themselves.

Centrality – On the social network maps, those individuals with the most ties are displayed closest to the center of the network. The maps for some regions, such as Metro Denver and Mid-Michigan, have no obvious single network center (see Figures 5.8 and 5.17, respectively). Other regions, such as Finger Lakes and North Star Alliance, appear to have a substantial number of players with a fairly high degree of centrality (see Figures 5.9 and 5.12, respectively).

Centralization – Kansas City is an example of a fairly centralized network (see Figure 5.11) with a small number of key players who are linked with a significant number of collaborators (in the middle of the map) and have frequent contact with each other (thick lines). In other regions, such as North Star Alliance and Montana (see Figures 5.12 and 5.13), the networks appear to be fairly decentralized. Wall Street West is an example of a combination of centralization and decentralization, with a fairly small network of interrelated collaborators that is also linked to other clusters of collaborators (see Figure 5.16).

Some of the maps—such as those for Metro Denver, Finger Lakes, Piedmont Triad, and Mid-Michigan—show groups of contacts that are not linked to the rest of the network, indicating that none of the other respondents named them among their contacts (see Figures 5.8, 5.9, 5.14, and 5.17, respectively). This may be due to limiting respondents to five contacts, or because the site visits intentionally included interviews with some respondents from organizations that are not currently key collaborators. Whether these clusters connect to the rest of the network over time will be interesting.

Strength of Relationships – Some regions—such as California Corridor, North Star Alliance, and West Michigan—have a relatively large number of collaborators who are in frequent contact (see Figures 5.7, 5.12, and 5.18, respectively). In other regions, such as Mid-Michigan, only a few key players have frequent contact (see Figure 5.17). In some regions, such as WAEM and Kansas City, the active leaders in the center of the network (those with the most links to other

individuals) tend to be the ones with the most frequent contacts (see Figure 5.15 and 5.11, respectively). In other regions, such as the North Star Alliance, Piedmont Triad, and West Michigan, the frequency of contact is scattered throughout the network (see Figures 5.12, 5.14 and 5.18, respectively).

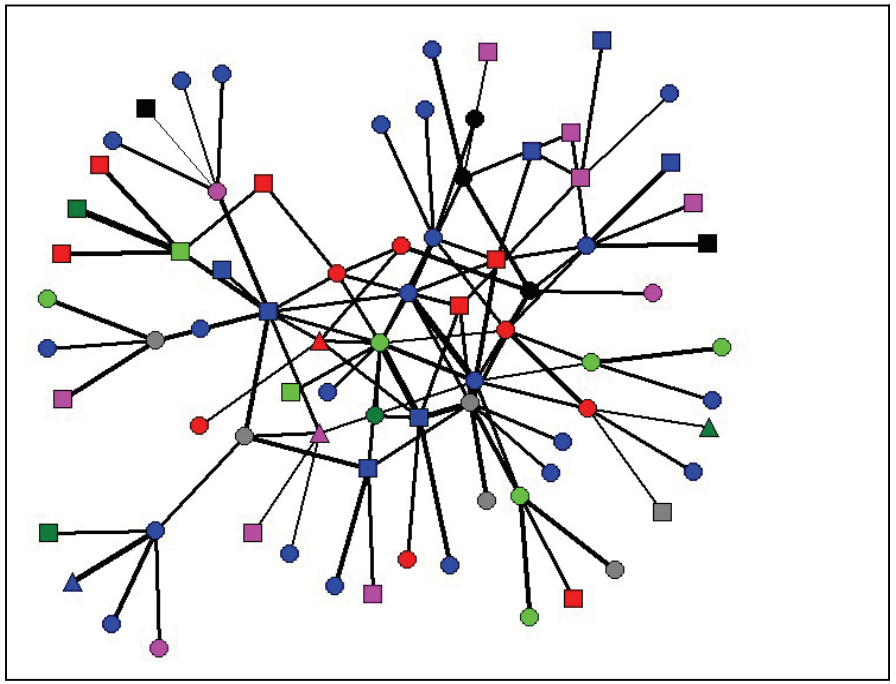
Betweenness – Mid-Michigan (see Figure 5.17) offers an example of a network with several bridges or individuals who link clusters of contacts. Although these individuals are largely in Tier 2 positions and not leaders or decision-makers, they are vital to the network as bridges between groups of collaborators. Piedmont Triad (see Figure 5.14) also has several key players linking groups of collaborators. These include individuals in both Tier 1 and Tier 2 positions.

In addition to these measures, the maps also provide a visual representation of the roles of different types of organizations in the regional networks. For example, in Kansas City the small, centralized group of key players includes individuals from industry, workforce, economic development, and education (see Figure 5.11). In Wall Street West (Figure 5.16), educators tend to collaborate with colleagues within the education field and a few industry contacts, while economic development and industry are more frequently linked together. The California Corridor map shows industry, workforce investment, and economic development in the center of the network, with education well represented in the number of collaborators but less central in the network (see Figure 5.7).

These visual representations of the regions' social networks are a useful tool for looking across regions and identifying key similarities and differences in collaborative networks. Over time, the analysis might look for larger networks with more penetration into underrepresented systems or groups of players, increased connectedness among players, and changes in frequency of contact patterns. The mapping tool might also be useful to the regions to better understand how partnerships and linkages are working. Each node or colored shape on the map represents a single individual. For confidentiality reasons, names are not included, but the regions themselves might find examining the detailed data interesting, especially if later results show that certain configurations are optimal for supporting regional transformational goals.

Generation 1 WIRED Regions' Social Network Maps[47]

Figure 5.7: California Corridor



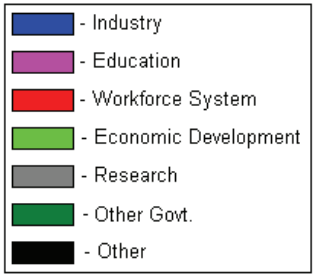
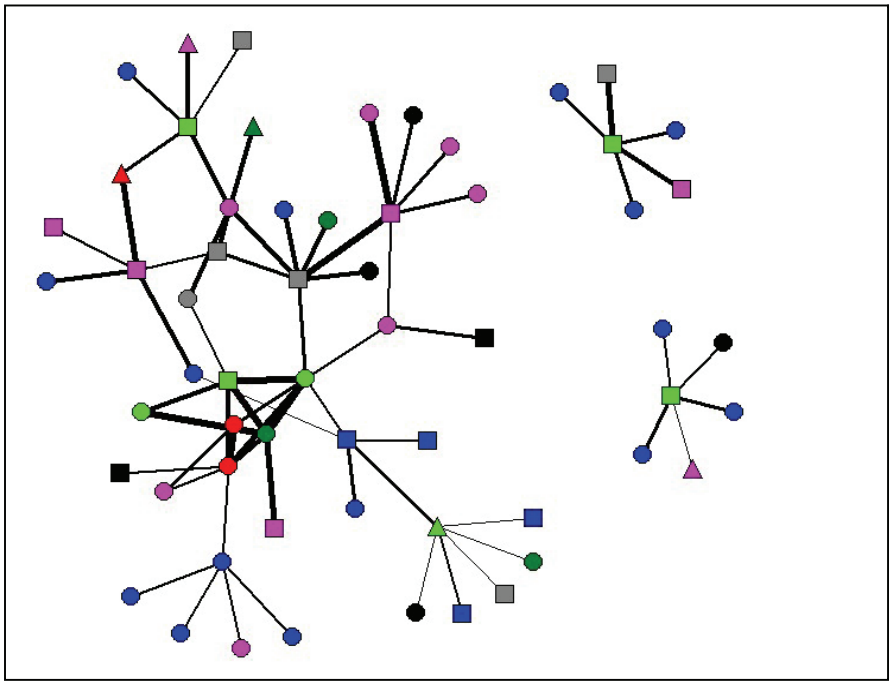
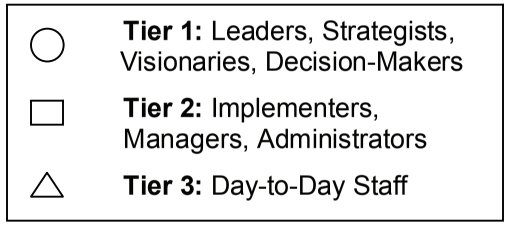


Figure 5.8: Metro Denver





[47] Source: BPA/UCSD Evaluation Team site visit interviews. Data not available for North Central Indiana (NCI)

Figure 5.9: Finger Lakes

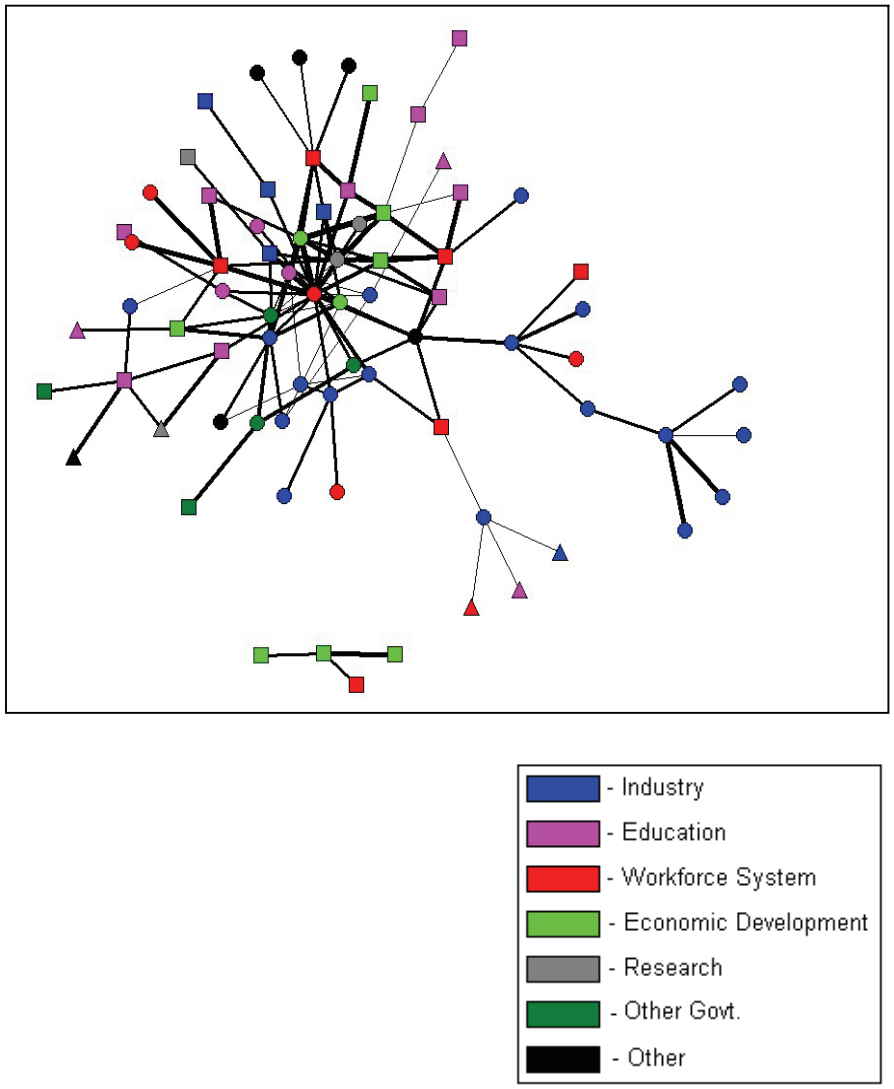


Figure 5.10: Northwest Florida

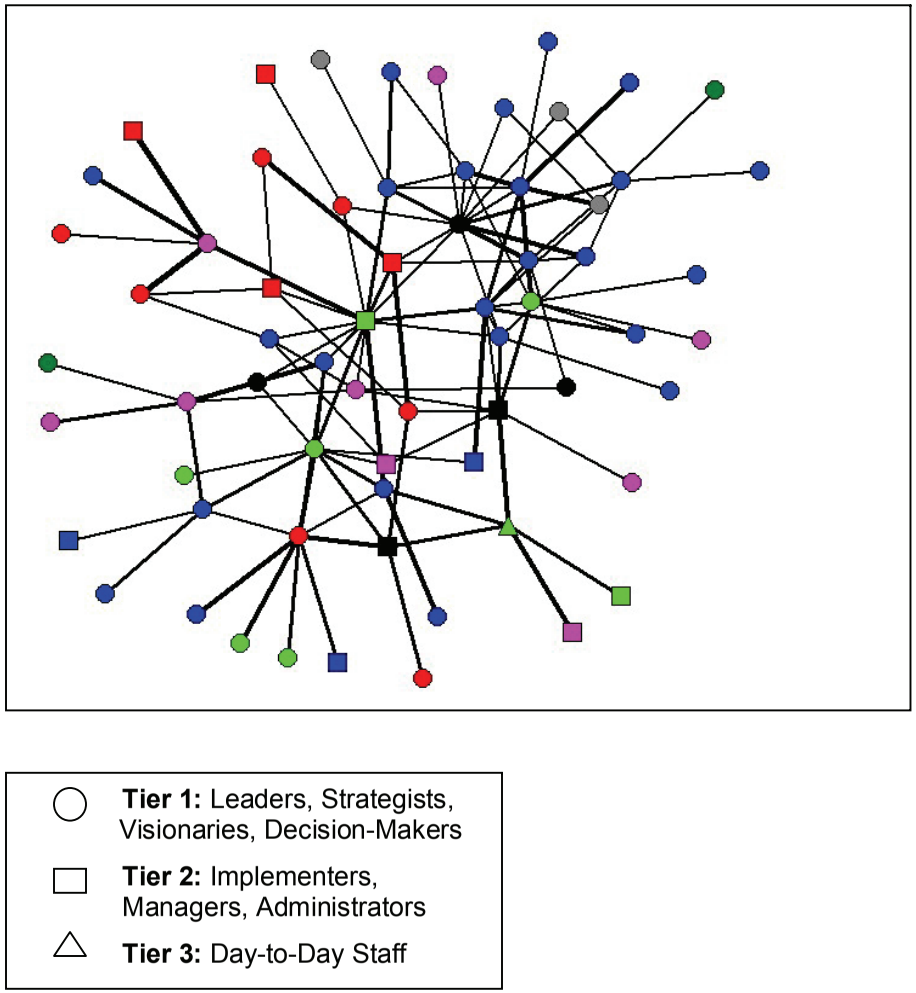


Figure 5.11: Kansas City

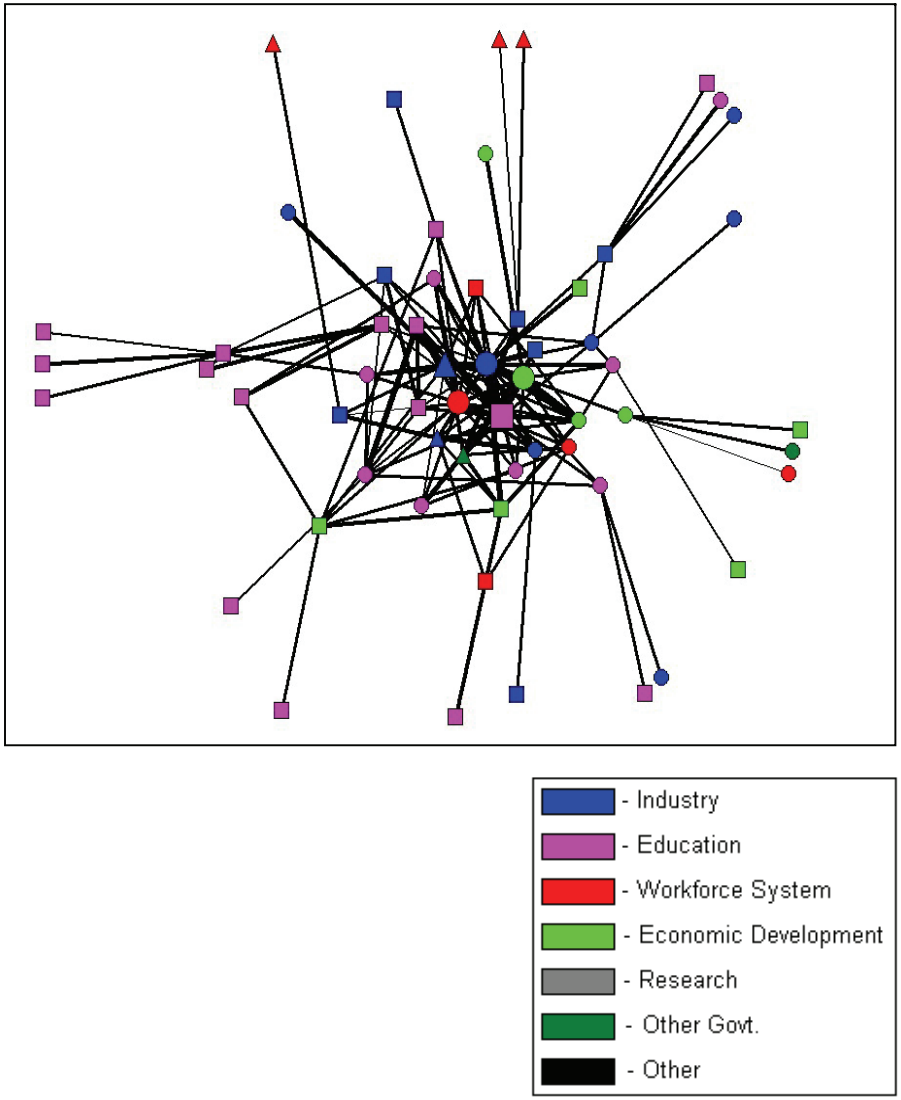


Figure 5.12: North Star Alliance

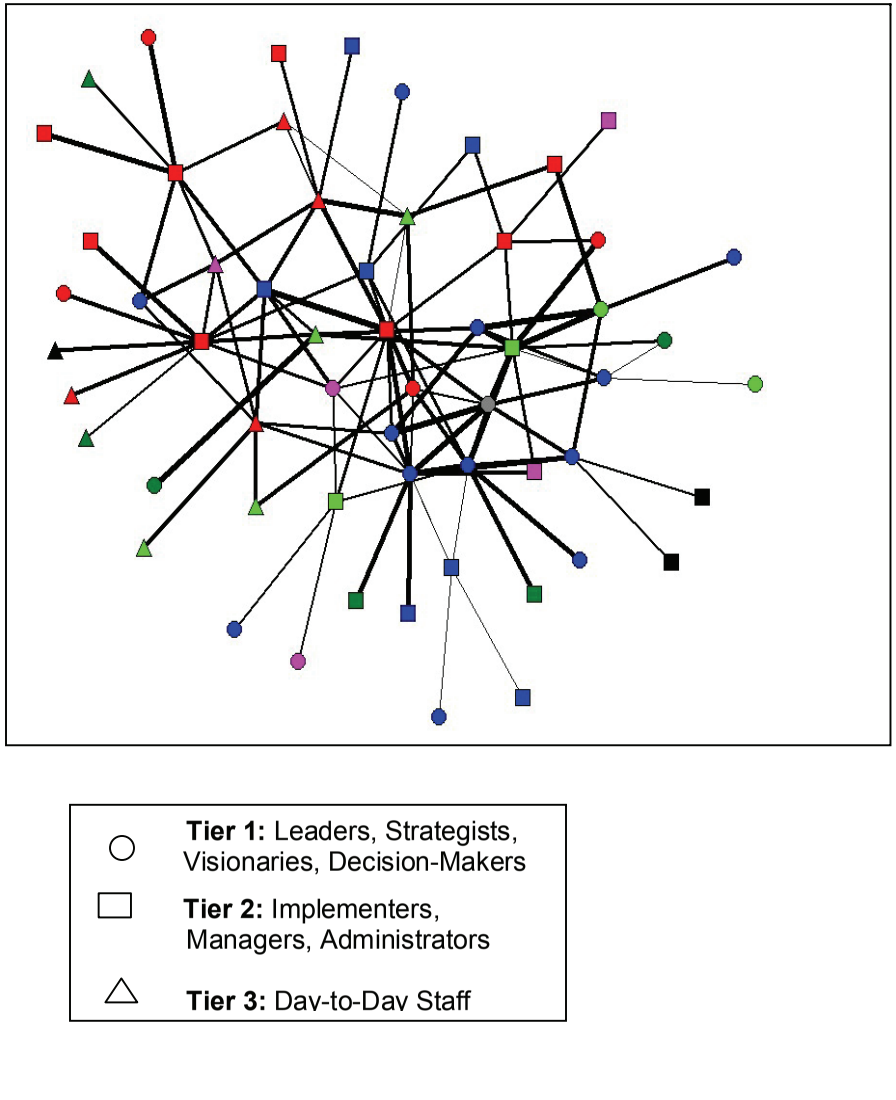
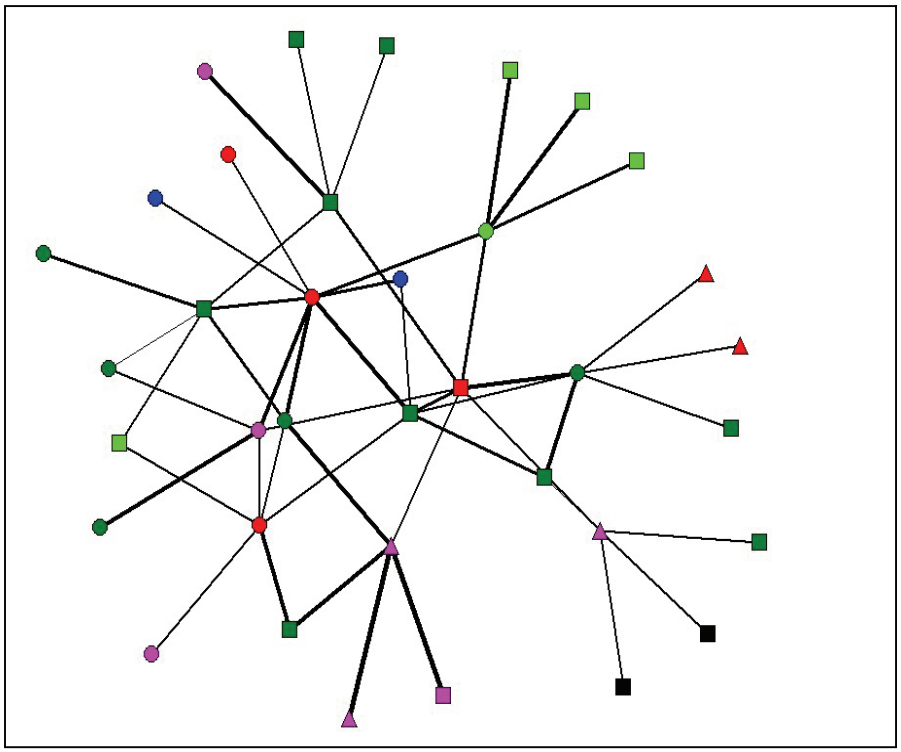


Figure 5.13: Montana



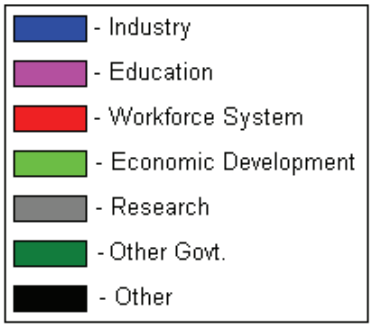
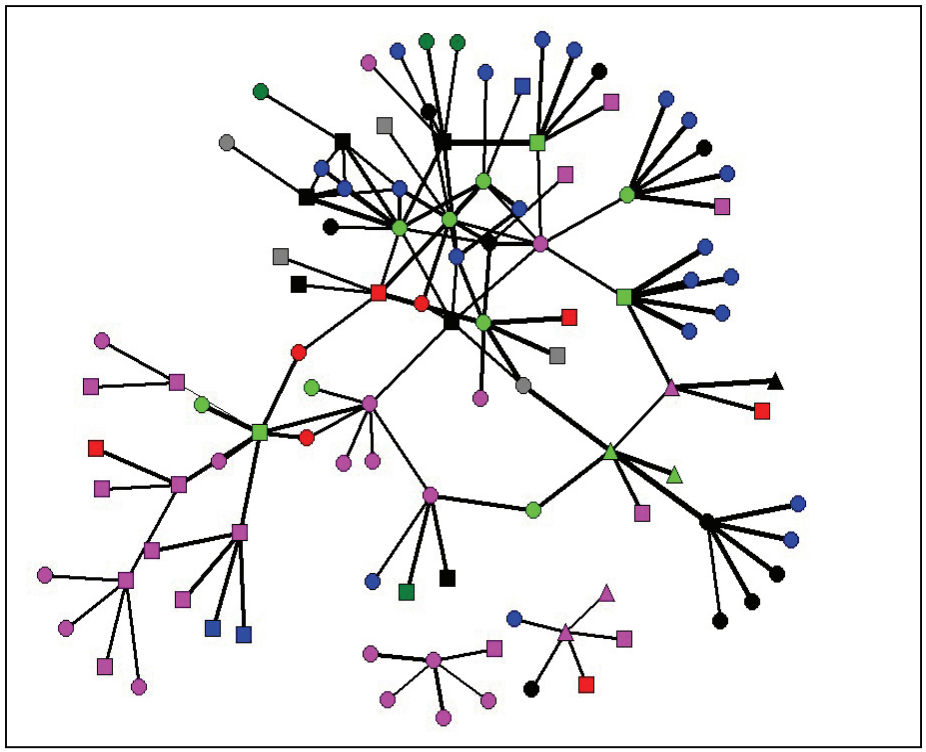


Figure 5.14: Piedmont Triad



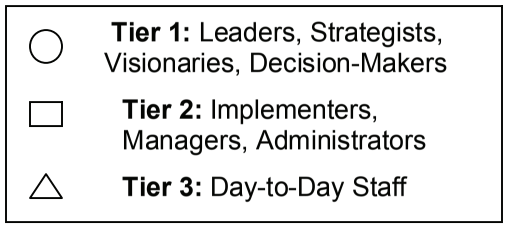


Figure 5.15: WAEM

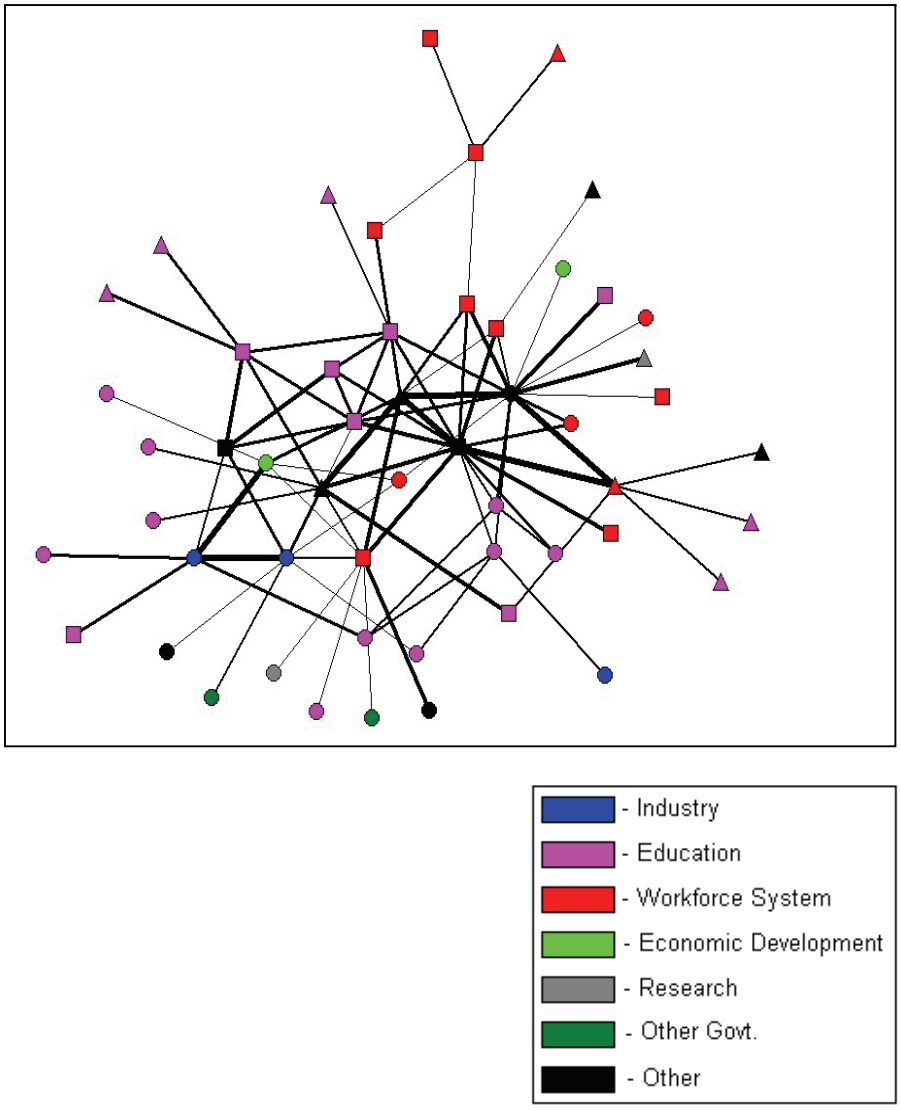


Figure 5.16: Wall Street West

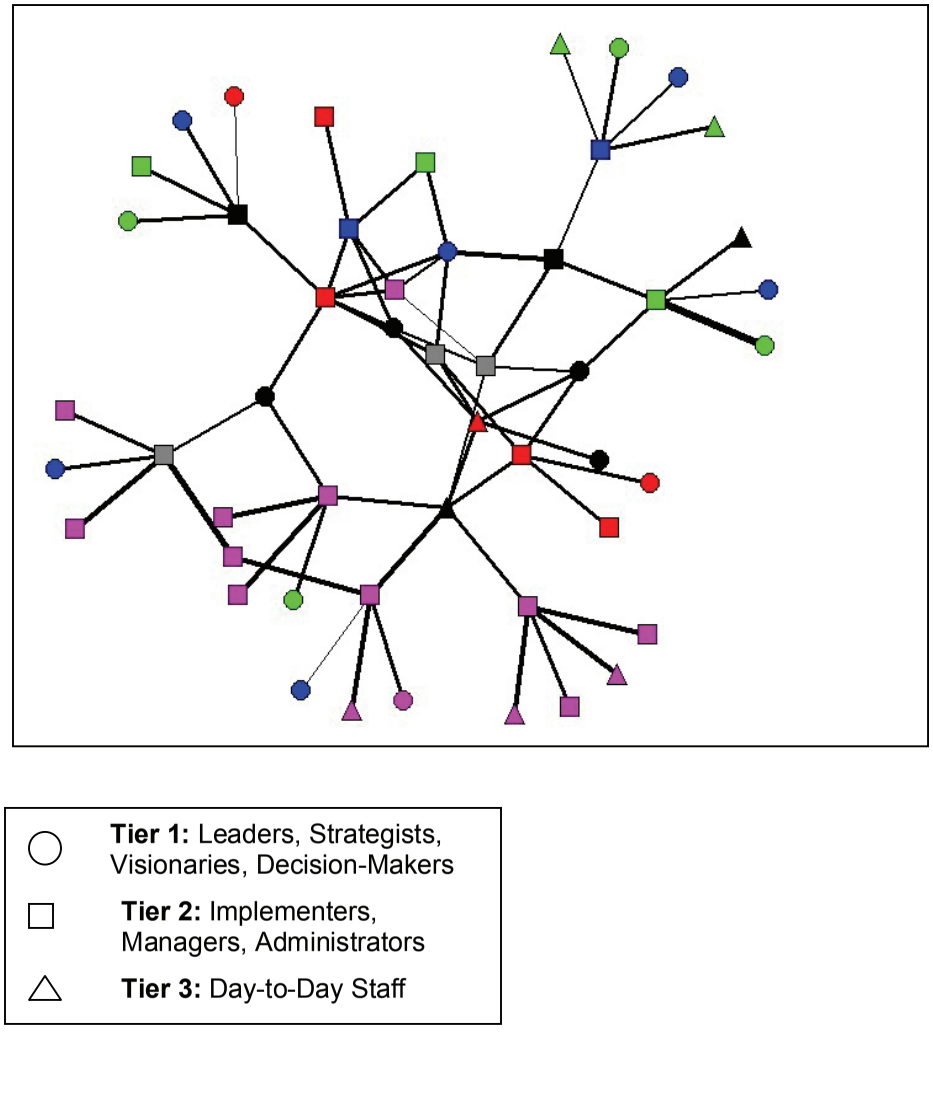


Figure 5.17: Mid-Michigan

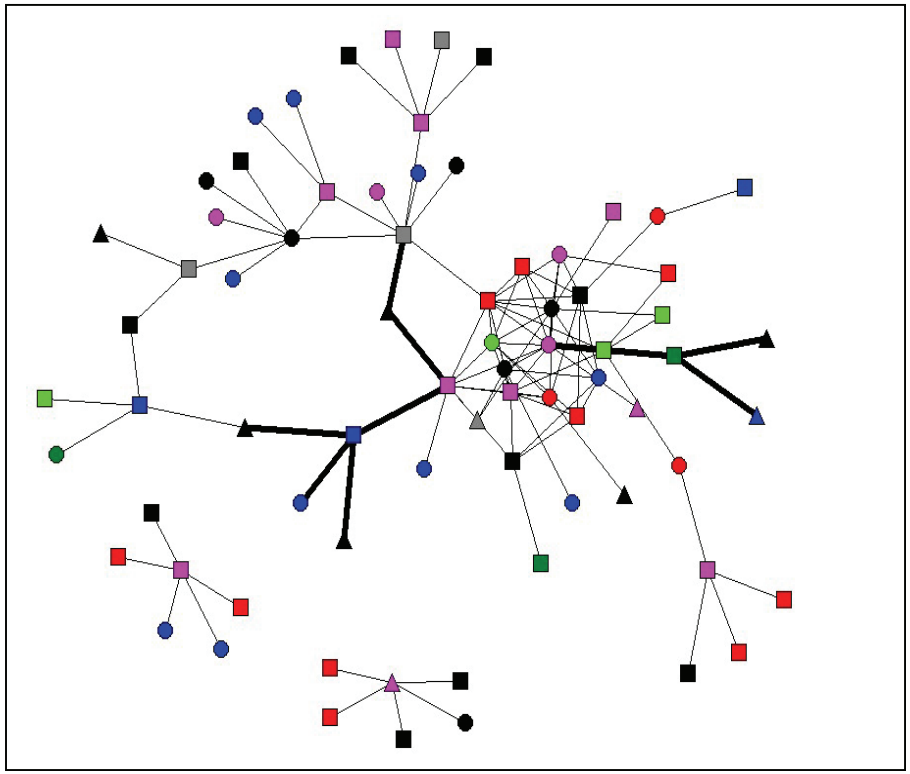
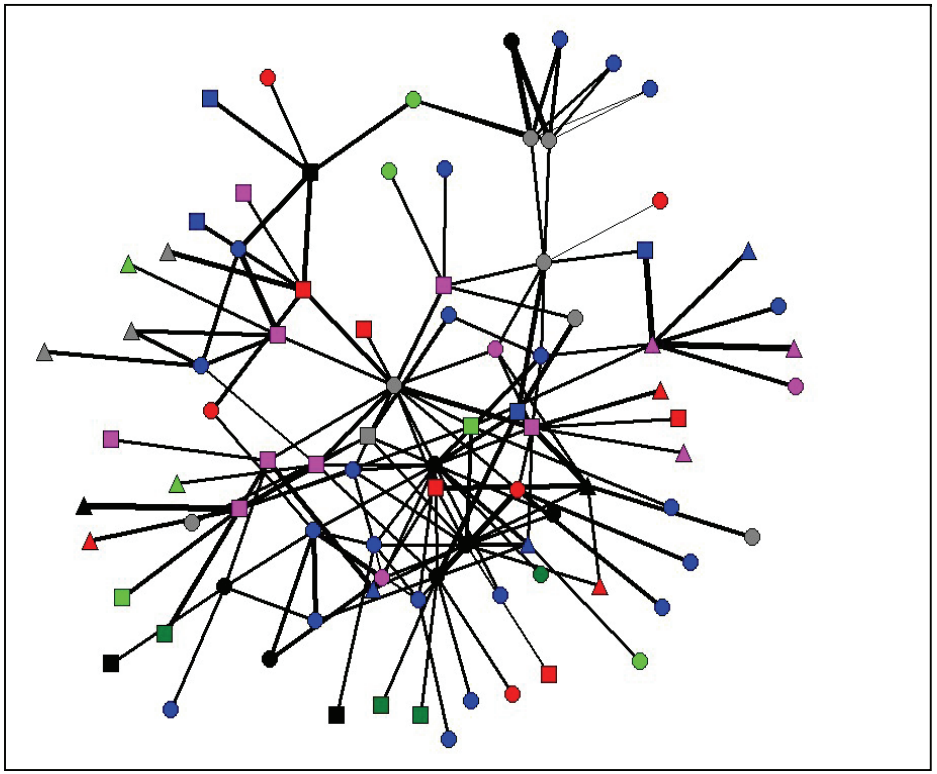
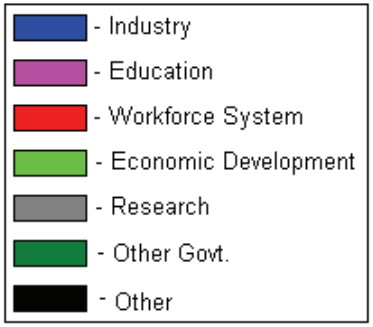
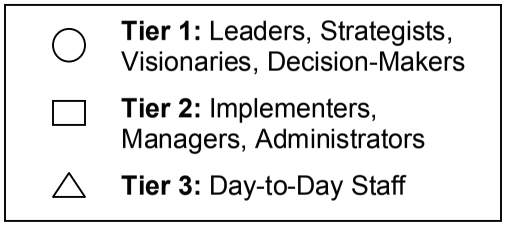


Figure 5.18: West Michigan







Chapter 6: Quantitative Measures of Progress: Baseline Data for the Generation I WIRED Regions

Introduction

The Generation I WIRED regions all focus on economic transformation through new integrated approaches to collaboration, innovation, workforce investment, and economic development. Each region has a strategy to achieve this goal that is based on the region's distinctive geography, assets, and economic history. Thus, the measures of progress that the evaluation will monitor over time include a highly diverse range of variables. To supplement the qualitative measures that the evaluation is collecting through site visits and surveys, the analysis of existing quantitative data measures progress over time on specific goals both within regions and across regions, utilizing a variety of existing and highly reliable metrics or indicators of progress.

Available data provide external, independent, and unbiased information about many aspects of progress toward economic and workforce systems transformation in the Generation I WIRED regions. WIRED success will cause many shifts in each region; therefore the evaluation needs to track many variables, examine many correlations, and look for leading indicators of change across a wide range of potential outcome areas. To prepare for these analyses, the evaluation team has collected data on a number of measures beyond the usual workforce metrics. Since the evaluation is intended to track progress toward goals as well as achievement of goals, the evaluation team has focused on factors that are leading indicators of change, and has identified sources of data that track innovation, transformation, entrepreneurship, and education and talent development measures.

The only cost-effective way to achieve this in-depth analysis is to use data sets collected by others, usually for other purposes. The evaluation team has identified and selected national data sets, gathered at least annually using reproducible methods, and with geographic identifiers available so that data for the WIRED regions may be aggregated using zip code or county/state identifiers. When researchers use data in ways that were not envisioned by the gatherers, they must take care to identify any hidden assumptions that are not spelled out in the data dictionaries, and to assess the quality and completeness of all fields, particularly those fields that were not central to the original use. The evaluation team has been fortunate to enjoy the cooperation of nearly all third-party data providers in obtaining additional documentation of their data sets to ensure the validity of the data for WIRED evaluation purposes.

For the first year of the evaluation, the evaluation team developed baseline values for the selected indicators to create a snapshot of the regions before WIRED. In future years, the study will track annual changes to assess progress across the various dimensions of economic transformation. In order to do this reliably, the data collected by the owner organizations must be uniform over the years (one of the criteria used in qualifying data sources), and the WIRED evaluation team methods must also be exactly reproducible, year after year, so that even small changes in measures can realistically be attributed to actual change in the region, and not to a

change in data collection or analysis methodology. To this end, the evaluation team has meticulously documented all data-gathering and filtering protocols so that future annual data processing will be uniform.

Although data from many sources are available on an annual basis, the year used as the time unit differs from data set to data set. Data from U.S. government agencies are usually organized by the federal agency's fiscal year (FY), i.e., October 1 through September 30. The charts in this report use the abbreviated label for these data, "FYxxxx," with the labeled year being the later of the two calendar years included in the fiscal year. Academic measures are collected by academic year (abbreviated AYxxxx in this report), which varies slightly from institution to institution, but usually runs from September of the labeled year through August of the following year. Thus, AY2006 is nearly identical to FY2007. Some primary data are aggregated by calendar year (abbreviated CYxxxx in this report). Data that are available by actual date, such as patent application data, are aggregated by federal fiscal year to provide the most uniform comparisons.

In order to filter data by region and by state, the evaluation team acquired supporting information from the U.S. Postal Service, allowing us to transform the list of counties for each region into lists of cities, states, and zip codes for each region. As a result, the team is able to use both primary data sources that identify location by zip code and those that use a mailing address without zip code. In order to compare region performance to state performance, the evaluation team sometimes used per-capita measures, which necessitated the acquisition of population data by county, and aggregation into region and state.

Many exogenous changes in the national (and international) environment will occur over the Generation I WIRED grant period. Ideally, to clearly identify the impact of WIRED within an environment with other changes occurring, the evaluation team would compare the region with WIRED to the same region without WIRED, over the same time period. Of course this is not possible. At least two other methods are feasible for disentangling the effects of WIRED from other external effects.

One way is to match each WIRED region with another based on demographics, workforce composition, economic status, and culture, then compare the evolution of the two nearly-twin regions over the course of the initiative. Since some of the exogenous effects may be due to state-wide policies or programs, the matching region should be in the same state as the WIRED region. Finding an appropriate matching region with these constraints is not possible for many Generation I regions. For example, the Montana WIRED region covers the entire agricultural eastern part of the state, and matching it against the mountainous west would not be appropriate. Similarly, the California Innovation Corridor covers much of the heavily populated coastal region, and matching it with an area in the less populous agricultural valley or northern part of the state would not be useful.

The other possibility for disentangling WIRED's effects from other effects is to conduct a difference in differences analysis. This involves comparing each Generation I region to its host state, and observe the *changes* in the difference between the region and state over time. Did the region change more along certain dimensions than the state as a whole? While this approach is not perfect, it is feasible for all of the Generation I regions, and thus is the one used.

Figure 6.1 presents a list of the data sources that the evaluation team used to develop the charts in this chapter. This chapter first describes the baseline (before WIRED) status of the Generation I WIRED regions in workforce and job measures, then examines measures of innovation and commercialization for the regions, and concludes with education and talent development measures. Appendix E includes numerical tables for the data underlying the charts that follow.

Workforce and Job Measures

Data Sources

The evaluation team calculated workforce and job measures using the Quarterly Census of Employment and Wages (QCEW). QCEW reports employment and wage information for all workers covered by state unemployment insurance (UI) laws, representing 98% of U.S. jobs. Members of the armed forces, individuals who are self-employed, sole proprietors, domestic workers, unpaid family workers, and railroad workers covered by the railroad unemployment insurance system are not included in QCEW data, but partial information is available for agricultural industries and paid employees in private households. As this section discusses, limitations in reporting for agricultural industries poses an obstacle for reporting data on targeted industries in Montana.

QCEW data are available at both the state and county levels. The evaluation team used QCEW county data to construct measures for the WIRED regions, and QCEW state data to compare WIRED regions with state-level measures. The QCEW data contain some records that do not have a single county location (designated by county code 999), and the evaluation team is carefully monitoring the proportion of all data that these records represent. To date, the wage records without a location code represent less than 5% of records for each state, and the evaluation team anticipates that they are not likely to skew the study measures to any significant degree. Furthermore, very few records for the region-specific targeted industries discussed below were missing county codes.

This section reports on three QCEW measures. These include:

1. **Average Annual Wages** – calculated by dividing the sum of total annual wages for the geographic area by the average number of workers employed during the year. According to QCEW's website, "[w]ages represent total compensation paid during the calendar quarter, regardless of when services were performed. Included in wages are pay for vacation and other paid leave, bonuses, stock options, tips, the cash value of meals and lodging, and in some states, contributions to deferred compensation plans (such as 401(k) plans);"[48]
2. **Number of Employees** – is the average of reported monthly employment for the twelve-month period; and

[48] Bureau of Labor Statistics. "Quarterly Census of Employment and Wages Overview," http://www.bls.gov/cew/cewover.htm

Figure 6.1
Extant Data Measures and Their Sources

Data Category	Measure	Source
Demographics	Total population; population density; population by race/ethnicity; population by age; population by labor force status; average household income; and population by education level, for all regions and host states	U.S. Census Bureau
Workforce Outcomes	Average annual wages; number of establishments; and number of employees **by NAICS code**, for all regions and host states	Quarterly Census of Employment & Wages (QCEW), Bureau of Labor Statistics
	Average annual wages; number of establishments; and number of employees **for targeted industries**, for all regions and host states	
Innovation and Commercialization Capacity	Number of new grants: federal SBIR grants, for regions and host states	RAND Database of Research and Development in the U.S. (RaDiUS), funded by the National Science Foundation
	Number of new grants: all federal research & development grants, for regions and host states	
	Number of patent applications, for regions and host states	U.S. Patent & Trademark Office, and U.S. Census Bureau
	Number of patent applications per capita, for regions and host states	
	Number of angel networks in the regions and host states	Angel Capital Education Foundation
Education and Talent Development	Total enrollment: non-degree-granting, 2-year, bachelor's-granting, post-baccalaureate-granting institutions, in the regions and host states	Integrated Postsecondary Education Data System (IPEDS), U.S. Department of Education
	Number of entering students: 2-year, bachelor's-granting, post-baccalaureate-granting institutions, in the regions and host states	
	Completions: 2-year, bachelor's-granting, post-baccalaureate-granting institutions, in the regions and host states	
	Completions with STEM majors: 2-year, bachelor's-granting, post-baccalaureate-granting institutions, in the regions and host states	
	Instructional staff full time equivalents: non-degree granting, 2-year, bachelor's-granting, post-baccalaureate-granting institutions, in the regions and host states	
	New faculty hires: 2-year, bachelor's-granting, post-baccalaureate-granting institutions, in the regions and host states	

Source: BPA/UCSD Evaluation Team

3. **Number of Establishments** – An establishment is an economic unit, such as a farm, mine, factory, or store, that produces goods or provides services. It is typically at a single physical location and engaged in one, or predominantly one, type of economic activity for which a single industrial classification may be applied.[49]

The figures below present data on these measures for the 2006 calendar year, the most recent full year of data available from QCEW. The analyses compare the measures for each WIRED region to those for the surrounding (or host) state. In two-state regions (Kansas City and WAEM), measures are reported for the entire WIRED region compared to the average of the two surrounding states.

In addition to CY2006 data, the evaluation team captured data on these measures starting in 1999 in order to have a full ten years of data for the final evaluation report in 2010. These data are available in Appendix E. Most of the WIRED regions have manufacturing as a large proportion of their employment, and a notable trend emerged in analyzing the data for manufacturing employment and wages. In nearly all of regions, manufacturing employment significantly decreased just prior to the recession of 2001 and never recovered to pre-recession levels. The annual average wages in the manufacturing industry since 2000, however, were either equal to or higher than the wages in all other industries. This phenomenon may suggest an increasing concentration of higher value-added manufacturing employment in the regions over time. Since most of these regions have some form of manufacturing among their targeted industries, evidence of such trends will be one area of interest as the regions implement their WIRED initiatives.

The evaluation team has not adjusted the average annual wage figures for inflation, primarily because the comparisons included in this report are not longitudinal. Analyses for the evaluation's Final Report will take such economic changes into consideration, since they will examine the regions' performance on various indicators over time.

Baseline Labor Market Measures by Major Industry

This section presents data on several employment measures for the WIRED Generation I regions at the time the initiatives were starting. These include the relative size of the region's workforce compared to rest of the state, average wages for the region compared to the host state, and distribution of employment across industries.

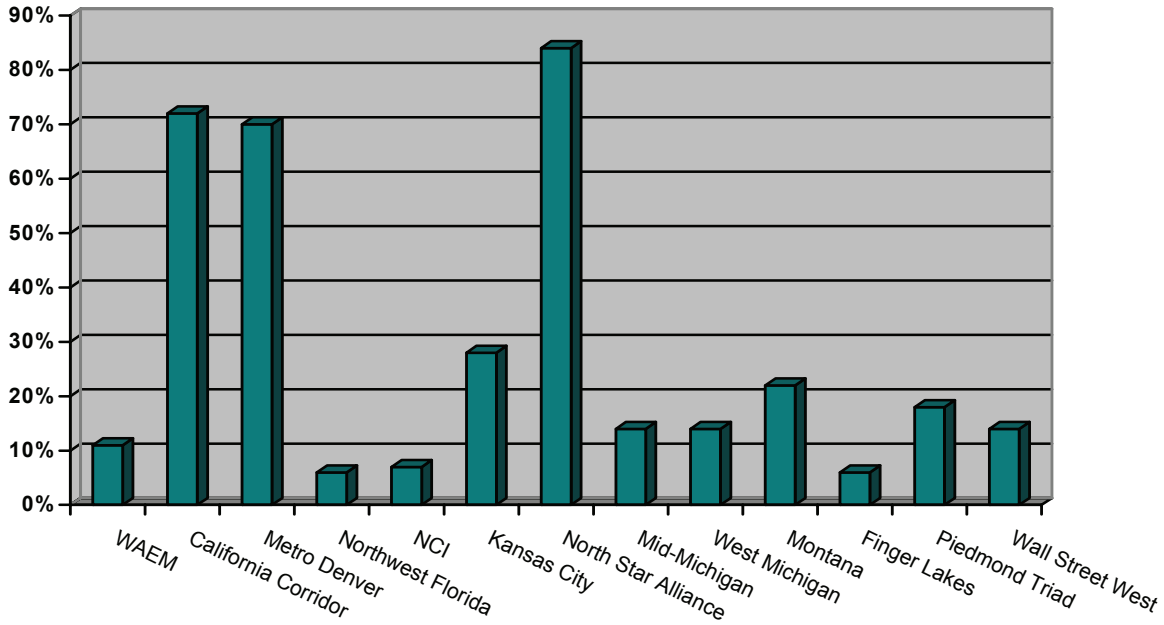
Employment in the Generation I Regions vs. Their Host States

In assessing the changes that the WIRED Initiative encourages among the regions, the question usually arises, "Compared to what?" As mentioned above, in addition to looking at changes over time within each region, the evaluation is also comparing the performance of the regions on various indicators to the states in which they are located. Figure 6.2 depicts the size of the region's employed labor force relative to that of the whole state, calculating the number of

[49] Bureau of Labor Statistics. "Quarterly Census of Employment and Wages People Are Asking, "http://www.bls.gov/cew/peoplebox.htm#6

employees within the region as a proportion of the total number of employees in the state. This ratio will be important to consider in later comparisons between the regions and their states.

Figure 6.2
WIRED Regions vs. Host States:
Proportion of State Labor Force Represented by Regions' Employees



Values for two-state regions (WAEM and KC) are calculated by averaging

Source: Quarterly Census of Employment and Wages

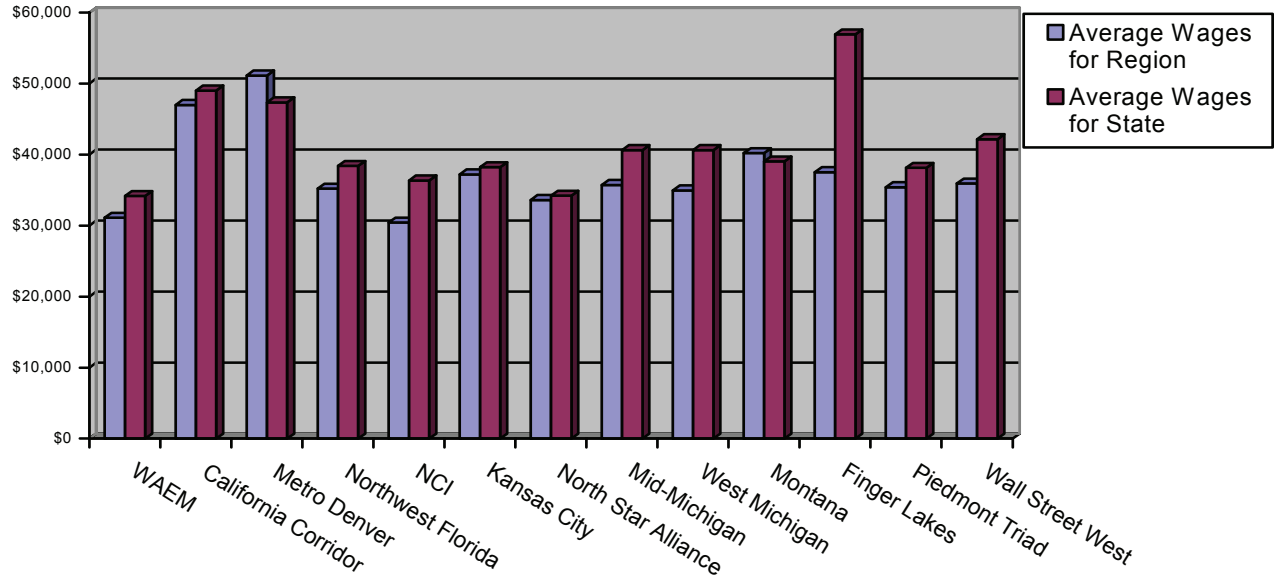
On average, employment in the Generation I regions represents 27% of the number of workers employed in the regions' host states. As the chart demonstrates, this proportion varies widely across the regions, from 6% in WAEM to 84% in Maine's North Star Alliance.

Average Wages

As Figure 6.3 demonstrates, the regions' average annual wages are below those of the surrounding state(s), with the exception of Metro Denver and Montana. The number for Montana illustrates the unreliability of the QCEW data for rural areas with strong agricultural economies. Data from the U.S. Census Bureau shows the average income for the Montana WIRED region to be lower than that for the state as a whole.[50] While the two measures (wages and income) are slightly different, the reversal of the relationship between region and state raises concerns about how well the QCEW will capture changes in employment measures in Montana.

[50] U. S Census Bureau, http://factfinder.census.gov/

Figure 6.3
WIRED Regions vs. Host States: Average Wages



Values for two-state regions (WAEM and KC) are calculated by averaging

Source: Quarterly Census of Employment and Wages

Notably, the Finger Lakes region is has much lower average annual wages than the state overall. This is most likely because New York City has higher annual average wages than the rest of the country in general and the Finger Lakes region in particular.

Comparing Across and Within the Regions

The next section describes 2006 employment in the industries that the Generation I WIRED regions have targeted as initiative partners. Figure 6.4 sets the stage for that discussion by showing the composition of each individual region's employed labor force broken out by industry, with industries defined by the largest category of North American Industry Classification System (NAICS) code.

Baseline Labor Market Measures for Targeted Industries

In addition to general employment measures for the regions and for standard aggregate NAICS codes, this section offers baseline measures of employment for region-specific target industries. The evaluation team identified region-specific target industries using each region's WIRED implementation plan, and in consultation with WIRED staff during the first round of site visits. This section first discusses average wages in the industries targeted by the Generation I regions, then examines the number of establishments in targeted industries, and finally looks at the number of employees in the targeted industries.

Figure 6.4
Distribution of Employees Across Industries, by Region

	WAEM*	California Corridor	Metro Denver	Northwest Florida	NCI	Kansas City*	North Star Alliance	Mid-Michigan	West Michigan	Montana	Finger Lakes	Piedmont Triad	Wall Street West
Total # of Employees in Region	**132,281**	**9,397,608**	**1,326,742**	**406,552**	**163,721**	**476,593**	**418,105**	**492,665**	**519,086**	**84,674**	**435,522**	**614,993**	**682,930**
Proportion of Region's Workforce	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*	*% Region*
Other Services (except Public Adm.)	3	5	3	5	3	3	3	5	4	6	4	3	4
Agriculture & Mining **	4	2	1	1	1	2	0	1	1	8	1	0	1
Construction	7	7	8	11	5	7	6	6	5	7	4	6	5
Manufacturing	29	13	9	6	38	11	11	18	26	4	19	21	15
Utilities, Wholesale, Retail, Transportation	25	22	22	23	20	24	25	22	20	32	19	22	25
Information	1	4	5	3	1	4	2	2	2	3	3	2	2
Finance, Insurance, Real Estate	5	7	9	8	5	9	7	7	5	6	5	6	6
Professional, Scientific/Technical Services, Administrative/Support Waste Mgt/Remediation	8	17	19	15	7	17	11	12	13	4	14	14	12
Educ., Health Care, Social Assistance	9	12	12	15	9	14	22	17	15	10	21	16	19
Arts, Entertainment, Recreation, Food Service, Accommodation	9	12	12	16	11	12	12	13	10	20	10	10	11

- Values for two-state regions (WAEM and Kansas City) are calculated by averaging.

*** Data for agriculture may not be accurate, since many agricultural establishments are not covered by unemployment insurance.*

Source: Quarterly Census of Employment and Wages, 2006

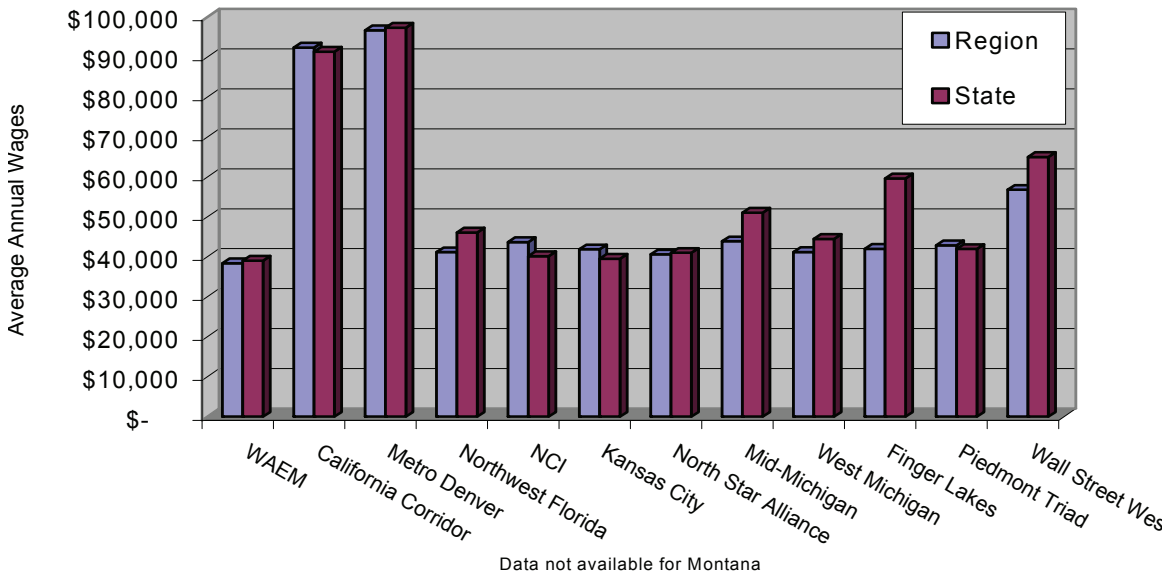
Figure 4.1 presented a summary of the industries that each WIRED region is targeting. Appendix E contains a detailed listing of NAICS codes for each region's customized set of target industries. In some regions, determination of targeted industries was very straightforward. The definition was more difficult in regions where one of the targeted industries was advanced manufacturing, because it cannot be mapped to any particular NAICS code. In these regions, the customized set of region-specific target industries does not include advanced manufacturing.

The figures below report measures for the whole set of targeted industries for each region rather than for individual targeted industries, because the NAICS code definition for certain individual industries is so narrow that in areas with low population density no data are available. This problem is so pronounced in Montana that no data were available even for the whole set of targeted industries. Although the QCEW showed some establishments in the Montana target NAICS codes, the data did not include any employees or wages, probably because many of the establishments are sole proprietorships and/or family farms. Accordingly, Montana is absent from all of the figures in this section.

The following charts illustrate baseline measures in WIRED regions for targeted industries relative to the host states. As detailed below in the discussion of the individual measures, most of the variation can be attributed to differences in the regions' size and population relative to their surrounding state(s).

As shown in Figure 6.5, the differences between the regions and their host states in average annual wages in targeted industries are small for most regions. For Finger Lakes, however, the

Figure 6.5
WIRED Regions vs. Host States: Average Wages in Targeted Industries

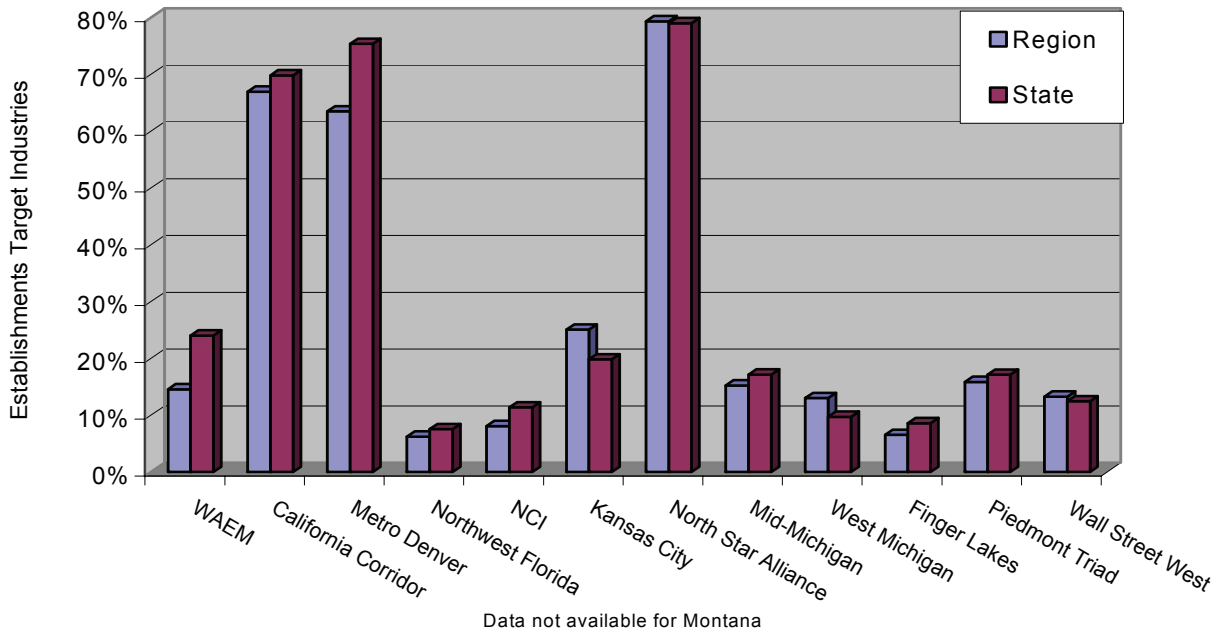


Source: Quarterly Census of Employment and Wages, 2006

region's annual wages in the targeted industries is only 70% of the state's wages in those industries, in part because the state figure is influenced by higher annual average wages in the New York City metropolitan area. Similarly, Wall Street West's WIRED region has slightly lower average annual wages in the targeted industries than does the host state as a whole, because of higher salaries in financial services in more urban parts of the state.

One way to gauge growth in a particular industrial sector is to examine whether the number of businesses in that sector a) increases over time, and b) increases relative to all businesses in a geographic area. Figure 6.6 shows baseline data on the latter measure, comparing establishments in each region's group of target industries as a proportion of all establishments in the region to the same ratio for the host states. The figure addresses the question, "Compared to their host states, how prevalent are businesses in the WIRED initiatives' target industries in their local economies?" The target industries appear to represent a similar proportion of all establishments in most regions as they do in the host states, with several exceptions. In Kansas City, the percentage of target establishments in the region is slightly lower than their percentage for the state, reflecting the fact that animal health currently is a larger industry in the more rural areas of Kansas and Missouri than in metropolitan Kansas City. The opposite is true in WAEM, the California Corridor, and Metro Denver where a slightly higher percentage of each region's establishments are part of the targeted industries than in surrounding states. This indicates that the targeted industries already are more prevalent in these WIRED regions than they are in the rest of the host states.

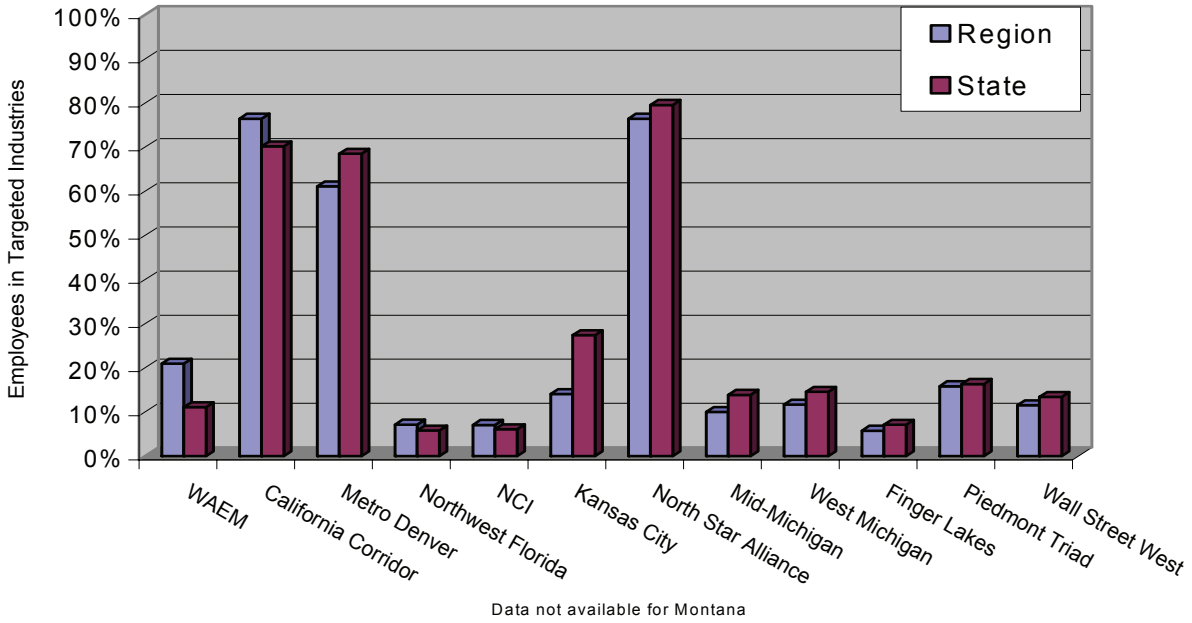
Figure 6.6
WIRED Regions vs. Host States:
Number of Establishments in Targeted Industries as a Proportion of All Establishments



Source: Quarterly Census of Employment and Wages, 2006

Figure 6.7 presents a comparison similar to that shown in Figure 6.6, but is based on the number of workers rather than establishments. Workers in the WIRED initiatives' targeted industries represent a larger proportion of the workforce in the California Corridor and WAEM than they do in the host states overall. On the other hand, the labor markets in Kansas City, Metro Denver, and the North Star Alliance have a smaller percentage of employees in the targeted industries than do the host states.

Figure 6.7
WIRED Regions vs. Host States:
Proportion of Employees in Targeted Industries vs. All Industries



Source: Quarterly Census of Employment and Wages, 2006

Innovation and Commercialization Measures

In addition to the growth of strong collaborative networks, an important measure of transformation is the extent to which a region can improve the innovativeness of its businesses, and thus increase regional business vitality. In order to track this aspect of regional transformation over time, the evaluation team has started collecting data for measures such as government-sponsored R&D investment in the region, the number of new patent applications per year, and the number of angel networks in the region.

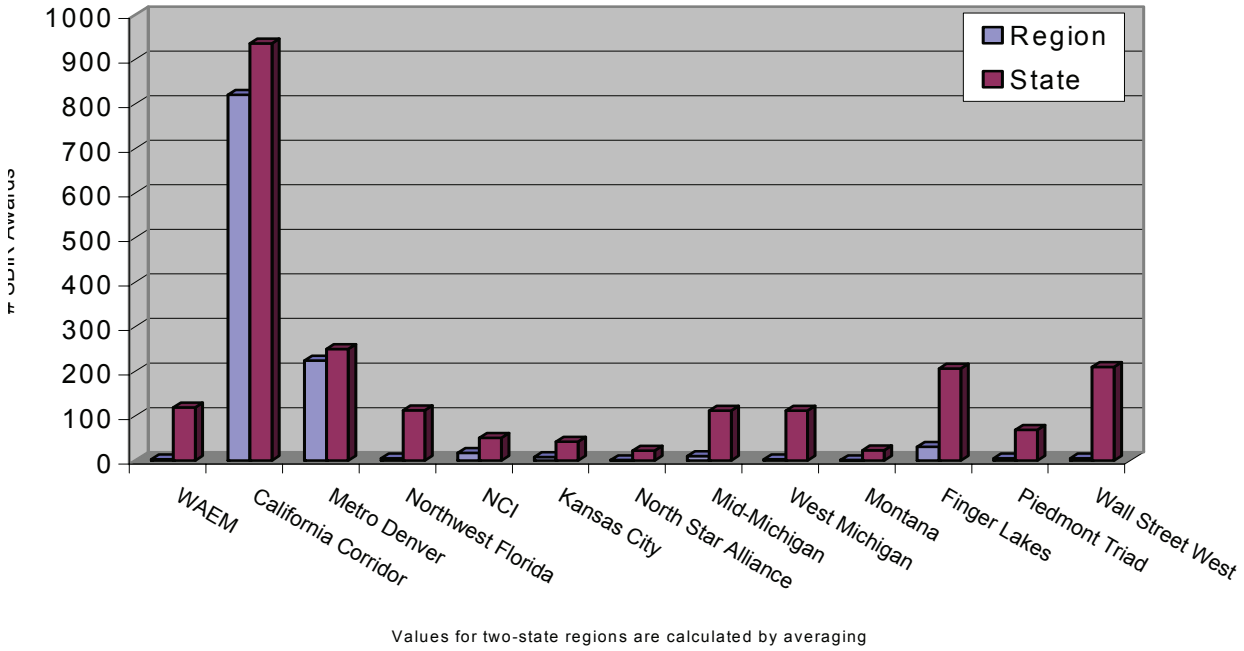
Federal Small Business Innovation Research (SBIR) grants

New SBIR grants are leading indicators of increased research and development activity in small technology companies. In considering this indicator, the evaluation team chose to track the

number of new grants rather than the dollar value because most SBIR grants are of similar size, and also because many Department of Defense (DoD) and USDA awards do not disclose dollar amounts, and not having this information would skew the measurement of this indicator for regions with DoD or USDA activity.

Data on SBIR grants are available by federal fiscal year. The most recent complete data available for this report are for FY2005. Because of this timing issue, the evaluation team may elect to retrieve the FY2006 data to update the baseline in the next report. The team has captured data from FY2000 – FY2005 in order to provide a six-year trend line for each region and its host state (see Appendix F). Figure 6.8 presents the currently-available baseline data.

Figure 6.8
WIRED Regions vs. Host States:
Total Number of SBIR Grants Awarded in 2005



Source: RAND Database of Research & Development in the U.S. (RaDiUS)

Regions vary notably in the number of SBIR projects started in FY2005. The number of new SBIR awards in the California Corridor region was over 800, whereas the Montana region had only one. Likewise, the awards garnered by each region as a proportion of all awards in the state varies widely, from over 85% in the Metro Denver and California Corridor regions, to 3% in West Michigan, and 2% in the Wall Street West region.

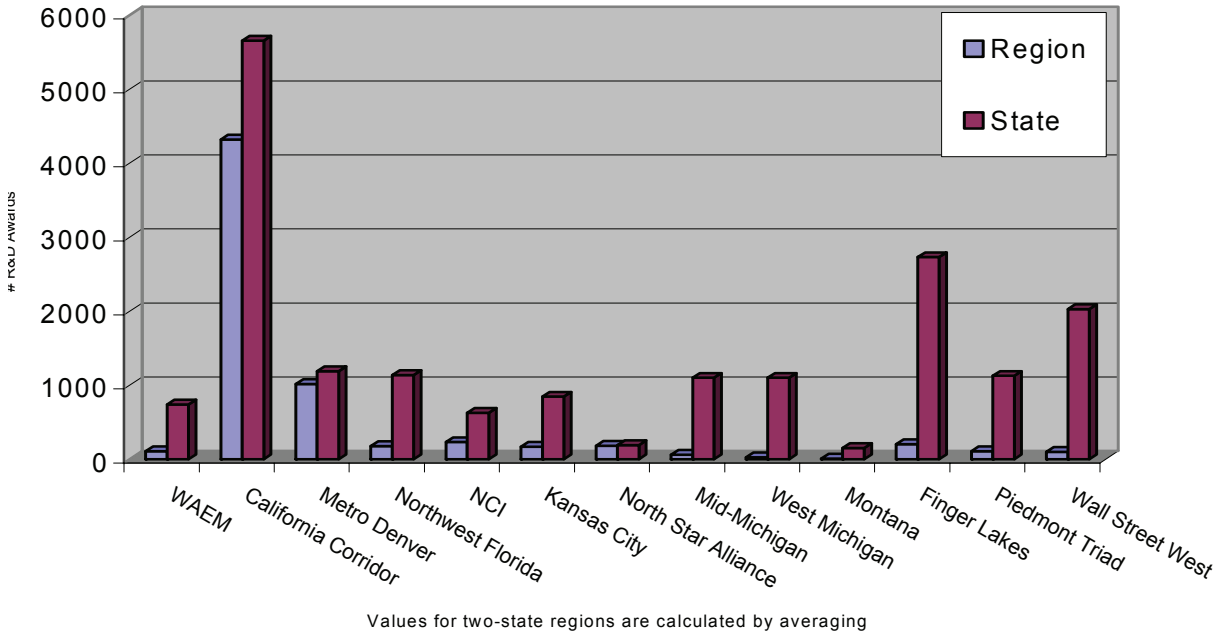
In nearly all regions and states, more SBIR grants were awarded in FY2004 than in FY2005 (see Appendix F). The North Star Alliance stands out because of the relatively high proportion of FY2004 SBIR awards in the region compared to the state of Maine: more than 90% of all awards

in the state were within the region. The absolute numbers are modest, however, with a total of only 26 awards. Looking at the detailed data, one small composite materials company in Maine stands out as having garnered nine awards that year, from the Army, Navy, and Air Force.

Total New Federal Research and Development (R&D) Awards

As Figure 6.9 illustrates, the pattern of all new R&D awards for regions and states looks somewhat similar to that of SBIR grants, except for the scale: roughly six times more R&D awards were made than SBIR awards (the total includes the SBIR awards). The states of New York, North Carolina, and Pennsylvania, all academic research powerhouses, have proportionately more total federal R&D awards than SBIR grants.

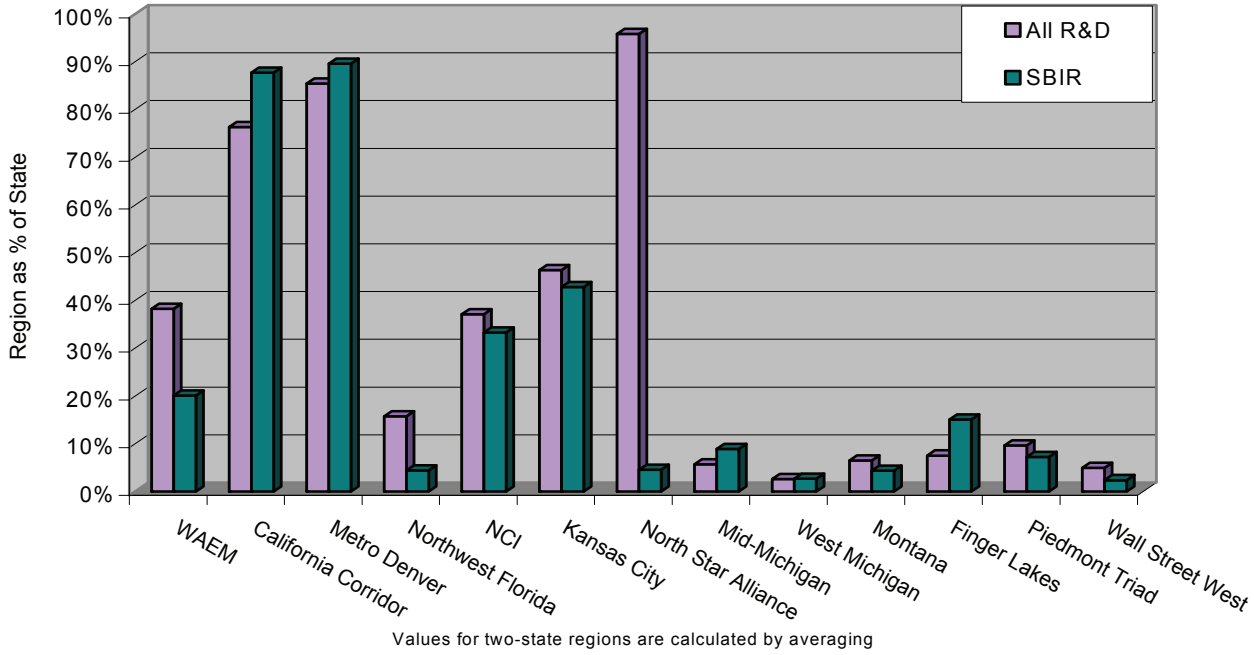
Figure 6.9
WIRED Regions vs. Host States:
Total New Federal R&D Awards in FY2000-2005



Source: RAND Database of Research & Development in the U.S. (RaDiUS)

Comparing the numbers of SBIR and total R&D awards in the region to those of the host state is also informative, as seen in Figure 6.10. The spike seen in the high percentage of R&D awards in the North Star Alliance region relative to the state of Maine in 2005 is unusual: more than 90% of all awards in the state were within the region. However, a time series plot shows the number of awards in that region in FY2004 was abnormally low, so the high figure in FY2005 may be due to a delay in a set of awards. The time series plot also shows that the number of SBIR grants in FY2004 was comparatively high. These activities were dominated by composite materials awards made by various military branches, and some relationship may exist between the high number of SBIR awards in one year and the high number of all awards in the next.

Figure 6.10
WIRED Regions vs. Host States:
FY2005 Region SBIR and R&D Awards as a Percentage of State Awards



Source: RAND Database of Research & Development in the U.S. (RaDiUS)

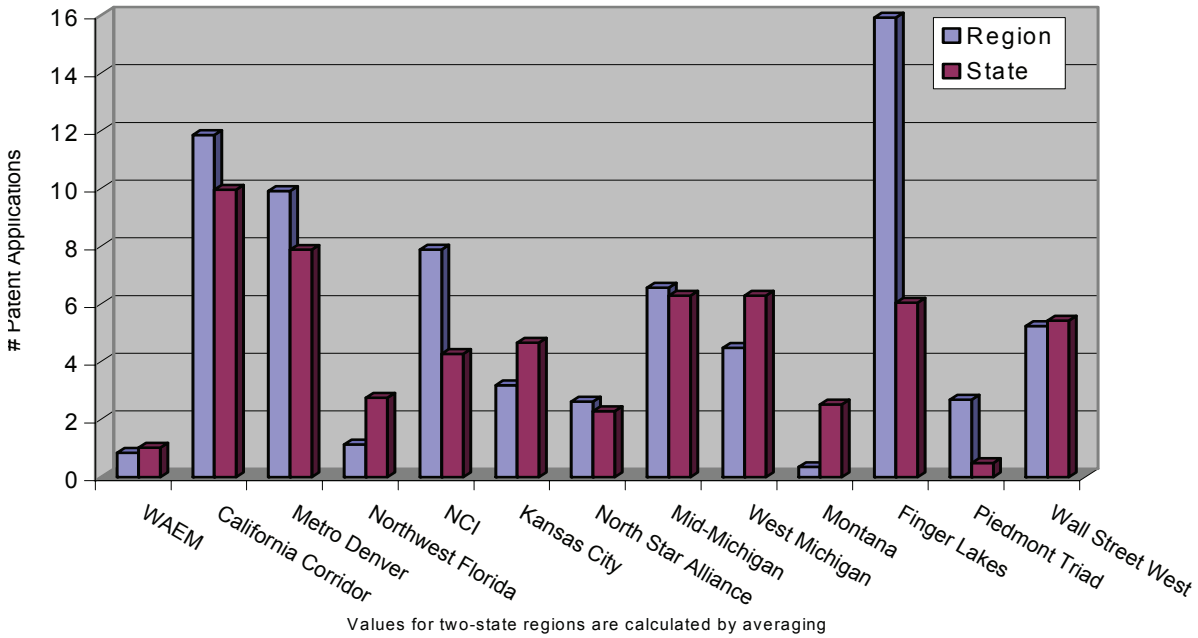
Number of New Patent Applications

An increased number of patent applications from a region may indicate increased innovation and business activity. The evaluation team is tracking published applications rather than granted patents because the length of time between an application and the granting of a patent may be so long that granted patents may be indicative of innovation during the previous decade. Figure 6.11 shows the number of patent applications per 10,000 residents for the Generation I WIRED regions compared to their host states. Since the data in the figure have been adjusted for population in this way, some regions have a higher rate of applications per capita than do their host states.

Appendix F does not include a six-year trend line for the number of new patent applications from each region, unlike many of the other measures in this chapter. Due to changes in the application process, patent application data before April 2005 are less complete than later data, and the evaluation required the full list of applicants and their addresses in order to filter applications into regions and states. If a patent has applicants in more than one region or more than one state, the patent is credited to each relevant region and state.[51]

[51] Since the same patent application may be attributed to several applicants in different regions and states, the total number of patents for all states will be fewer than the sum over states of the patents credited to each state.

Figure 6.11
WIRED Regions vs. Host States:
Patent Applications per 10,000 Population in FY2006



Source: U.S. Patent and Trademark Office & U.S. Census Bureau

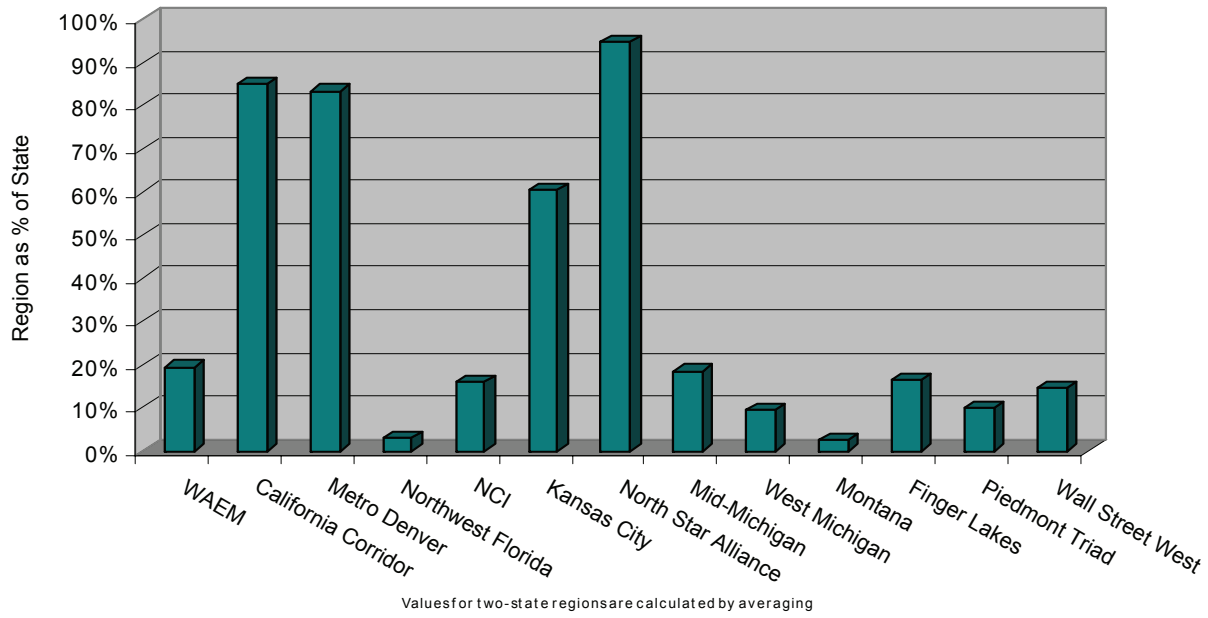
Patent information is available weekly. The evaluation team has consolidated the data to correspond to the federal fiscal year. This procedure allows for accurate comparison to the R&D and SBIR data, which are available only by federal fiscal year.

The diversity across regions is demonstrated again by the variability in patent application activity. The California Corridor led the way in the absolute number of patent applications, with over 30,000 in FY2006, which amounts to nearly 12 applications per 10,000 population. Finger Lakes had almost 2,000 patent applications in the same time frame, but since the population in the region is low, that number translates to nearly 16 applications per 10,000 population. (Xerox Corporation is within the Finger Lakes region, which may explain the high rate of applications.) The average for the U.S. is less than five applications per 10,000 population. Eight of the Generation I regions have patent application rates lower than the U.S. average, with the rural Montana region having the lowest rate. Given these differences, assessing changes in a region's innovation based on this measure will be easier in regions that have had low patent application rates in the past than in regions like the California Corridor and Finger Lakes that have had very high rates.

Comparing the patent application activity within each region to that of its host state is also instructive. Figure 6.12 presents the number of patents in each region as a proportion of the total number of patent applications in the host state. The North Star Alliance region appears to encompass most of the technology activity that spawns patent applications in Maine, as does the

California Corridor for California. The Metro Denver region also dominates its host state with more than 80% of Colorado's patent application activity.

Figure 6.12
WIRED Regions vs. Host States:
Patent Applications in Regions as a Proportion of Total Applications in Host States



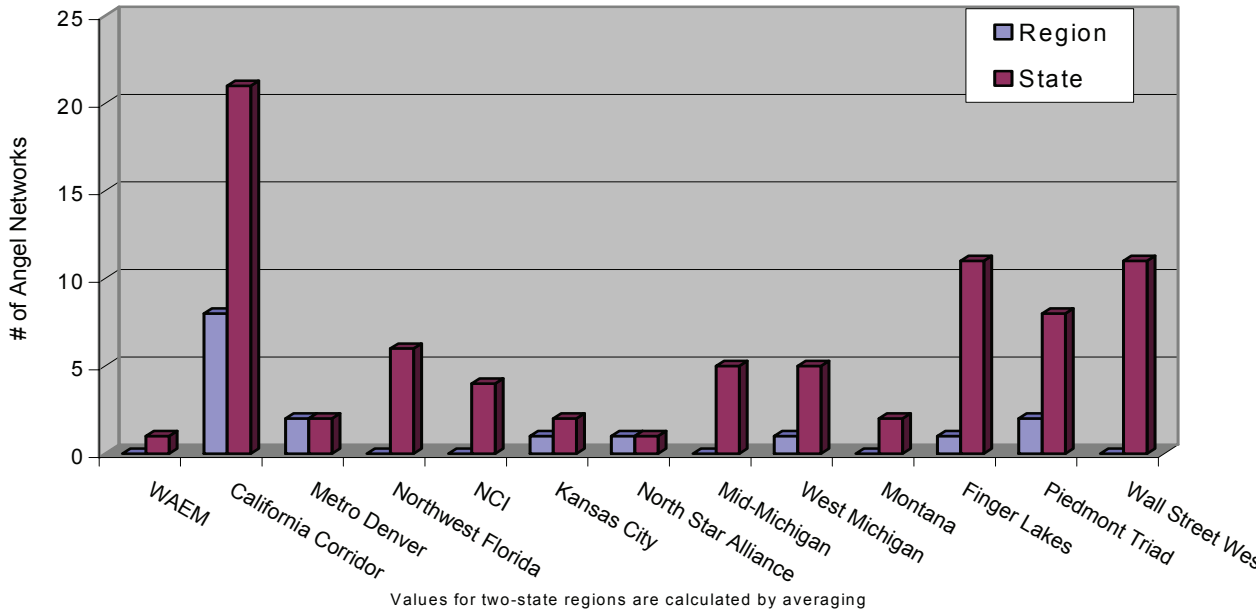
Source: U.S. Patent and Trademark Office

Number of Angel Networks

Angels are individuals who invest personal wealth in a start-up company at the earliest stage of its life. These investors often participate in networks of like-minded individuals. The data on angel networks in Figure 6.13 are from a survey rather than a complete list of all angel networks. The Angel Capital Education Foundation (ACEF), founded by the Kauffman Foundation, conducted the survey. ACEF is a nonprofit organization devoted to educating angel investors, and to collecting and disseminating data and information on angel investors and angel investing groups.

Although accessing data on the actual level of angel activity—either in dollars or number of deals—would have been ideal, that information is proprietary and ACEF is only allowed to cite it in summary form covering the entire North American region (Canada, U.S., and Mexico). Therefore, the evaluation team is using the number of angel networks as a surrogate for angel activity. Research has shown that a large proportion of angel activity is local (i.e., that angels invest in companies located near them), and since most networks have regular face-to-face meetings, the network activity can be inferred to be local. The evaluation team used the city and

Figure 6.13
WIRED Regions vs. Host States: Number of Angel Networks, CY2007



Source: Angel Capital Education Foundation

state information provided by the network to sort the survey results into the 13 WIRED Generation I regions. Although data for CY2005 or CY2006 would have been better as the baseline year (to match baseline data for other measures), only current (CY2007) data were readily available for this report. If the historical data become available, they will be included for future analyses.

The California Corridor region currently has eight angel networks, mostly located in the metropolitan San Francisco, Los Angeles, and San Diego areas, areas that are geographically distant enough from each other to make multiple angel networks practical. Metro Denver supports two networks, the only two in the state. The states of New York and Pennsylvania have many angel networks, but the sites reported little or no angel network activity within the WIRED regions themselves. The survey data showed that six of the Generation I WIRED regions have no angel networks. Northwest Florida is one of those regions, and WIRED partners there are currently identifying potential angel investors and creating a network that supports entrepreneurs in the region. The evaluation team will investigate the presence and development of angel investment and networks further in the coming year.

Education and Talent Development

As the regions establish their systems for providing information about individuals who complete training funded by WIRED, the evaluation team will be analyzing these data to measure a) the

number of individuals who receive training for high-skills jobs, and b) the extent to which this talent development pays off in terms of employment, wage rates, and job retention. Other important measures of regional transformation will be the extent to which the regions increase their capacity to conduct education and training activities, and the extent to which they make use of existing education and training capacity. A region's attention to its talent pipeline, and the ability of the region's education and training organizations to respond to new and existing demands from regional industry for an appropriately trained workforce, are important keys to expanding economic success.

The primary data source for postsecondary educational information is the Integrated Postsecondary Education Data System (IPEDS), the data collection program of the National Center for Education Statistics, U.S. Department of Education. All primary providers of postsecondary education in the country forward data to the IPEDS. The measures chosen for tracking in the WIRED regions are:

- Total enrollment (12-month unduplicated head count);
- Number of entering students;
- Number of degree completions;
- Number of degree completions in science, technology, engineering, and mathematics (STEM) majors;
- Number of instructional staff full-time-equivalents (FTEs); and
- Number of new faculty hires.

The IPEDS provides data for each of these measures broken out by institution type according to the highest degree granted by the institution. Types of institutions include:

- Non-degree-granting;
- Two-year, degree-granting (Associate degree);
- Four-year, Bachelor's degree-granting only; and
- Post-baccalaureate degree-granting (Masters, PhDs, professional).

Non-degree-granting institutions include business schools, vocational institutes, technical institutes, travel agent training schools, barber colleges, cosmetology schools, mechanics institutes, schools of luthiery, computer repair schools, vocational health training, dog training institutes, massage therapy schools, music and acting academies, culinary institutes, and the like. These institutions provide training for skilled trades beyond secondary education.

Two-year degree granting institutions are those institutions, community and junior colleges among others, granting only Associate level degrees.

Four-year, Bachelor's degree-granting institutions are those that grant degrees up to and including four-year bachelor degrees. Post-baccalaureate-degree-granting institutions, as separated out by IPEDS, are those that grant both bachelor degrees and other post-baccalaureate

degrees such as Masters, PhD, and post-baccalaureate professional certifications. Thus, the total number of bachelor degrees granted by a region will be split between the four-year colleges and the post-baccalaureate degree-granting institutions. Since most state colleges and universities offer post-baccalaureate degrees, the number of students apparent in the IPEDS four-year degree group often will appear smaller than the number who actually earn baccalaureate degrees.

As might be expected, the IPEDS collects data by academic year. The baseline year chosen for this evaluation is AY2005, which, for most institutions, ran from September 2005 through August of 2006.[52] Since WIRED began in October 2006, AY2005 (running through or to the Summer of 2006) provides an accurate assessment of the pre-WIRED educational system.

Not all IPEDS measures are available for all institution types. For example, some non-degree granting technical schools do not consider their instructors to be "faculty" per se, so information on new faculty hires will not be available for those institutions. On the other hand, instructional staff FTEs include some teaching staff who are not considered faculty (such as teaching assistants), so those numbers run slightly higher than actual faculty counts. Since all instructional staff included in this measure have teaching responsibility, this is still a valid measure of teaching activity.

Entering students and new faculty hires are leading indicators of change in the educational systems of both the regions and the states. Total enrollment and completions tell the story further down the pipeline.

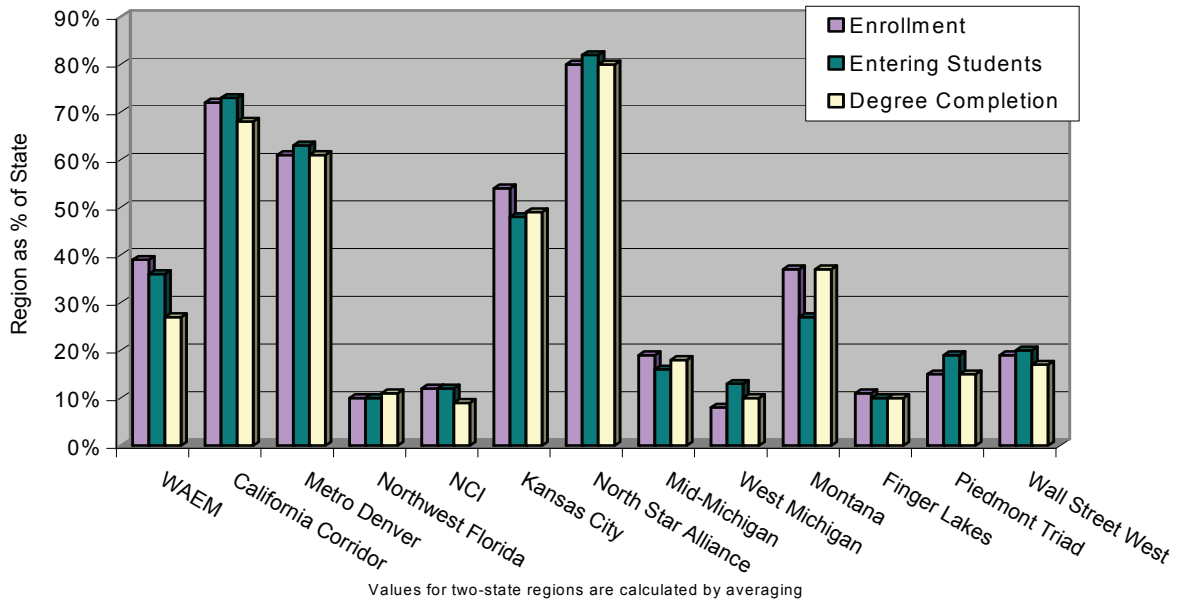
Total Enrollment, Degree Completions, Number of Entering Students as a Leading Indicator

This section presents enrollment and degree completions for each region as a proportion of the same measure for the host state. By comparing the percentages of enrollments and completions, the evaluation team will be able to analyze whether the region has proportionately more completions than the state. Two factors could cause the two measures to differ: 1) the region may be enrolling fewer entering students; and 2) the region has more success in retaining students to graduation; either one or both reasons may apply. The entering student proportions help elucidate which reason is applicable.

Figures 6.14, 6.15, and 6.16 highlight the diversity across regions in the number of students enrolled, the number of students entering, and the number of degree completions for the various types of colleges. For example, the North Star Alliance region has nearly the entire two-year student enrollment in Maine, while the Northwest Florida and West Michigan regions have very little activity in two-year colleges.

[52] Some institutions have July as the starting month.

Figure 6.14
WIRED Regions vs. Host States: Two-Year and Technical College Enrollment, Entering Students, and Degree Completions as a Proportion of State Totals, AY2005



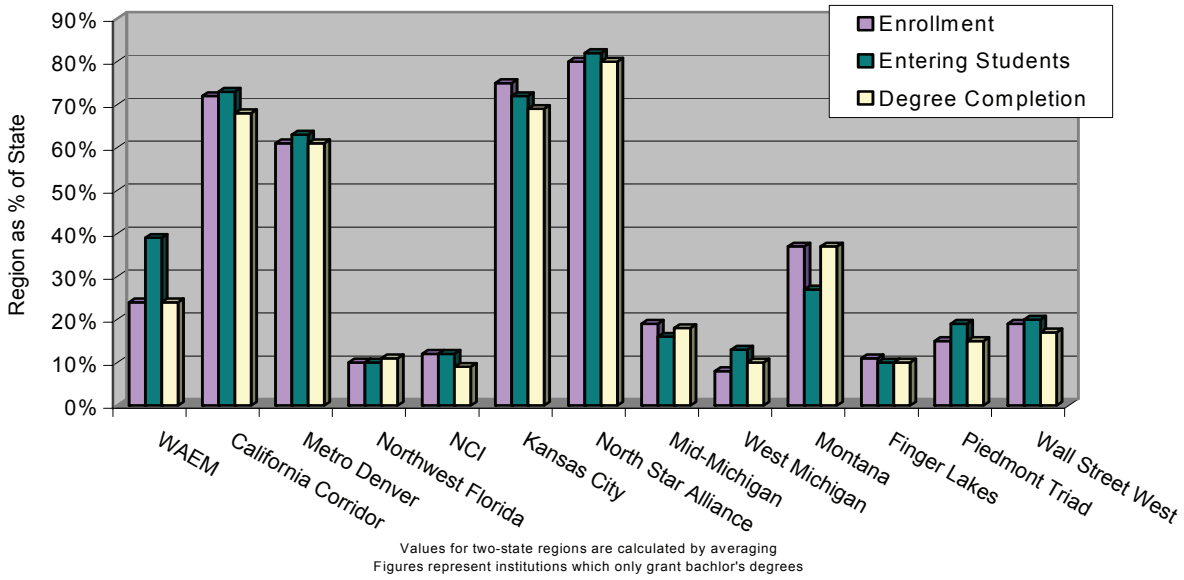
Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS)

All of these figures show that for those regions in which major urban areas—and the state's major educational institutions—are located, their students and graduates represent a large proportion of the state's students and graduates. Such regions include the California Corridor, Metro Denver, Kansas City, and the North Star Alliance. In general, the proportions of enrollments, entering students, and degree completions for four-year institutions granting Bachelor's degrees[53] are similar to those for two-year colleges (see Figure 6.15). As with the two-year college baseline, the regions vary considerably in terms of the proportion of their host states' enrollments and graduations that they represent.

The post-baccalaureate-granting institutions for regions compared to states also shows the diversity among regions, with the North Star Alliance region including 100% of all students enrolled in advanced-degree-granting institutions in Maine, while the Finger Lakes and Montana regions have only a small fraction of the overall number of students enrolled in universities.

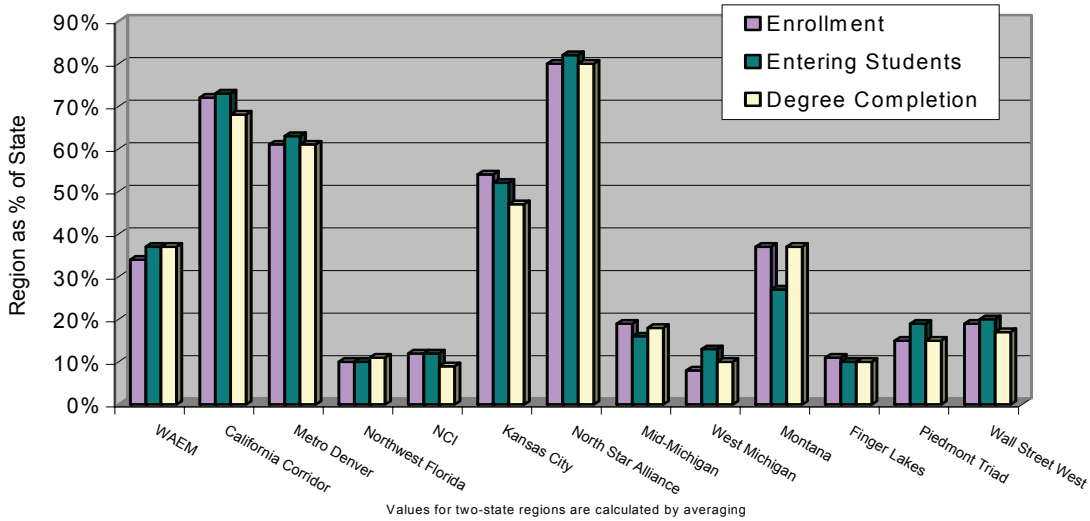
[53] Because of the structure of the IPEDS database, these figures are for colleges which grant *only* bachelor's degrees; most major state universities, which grant master's and doctoral degrees in addition to bachelor's degrees, are absent from these figures.

Figure 6.15
WIRED Regions vs. Host States: Bachelor's-Granting Institutions[a] Enrollment, Entering Students, and Degree Completions as a Proportion of State Totals, AY2005



Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS)
[a] Includes only students in colleges and universities that grant four-year degrees, and not higher degrees.

Figure 6.16
WIRED Regions vs. Host States: Post-Baccalaureate-Granting Institutions[a] Enrollment, Entering Students, and Degree Completions as a Proportion of State Totals, AY2005

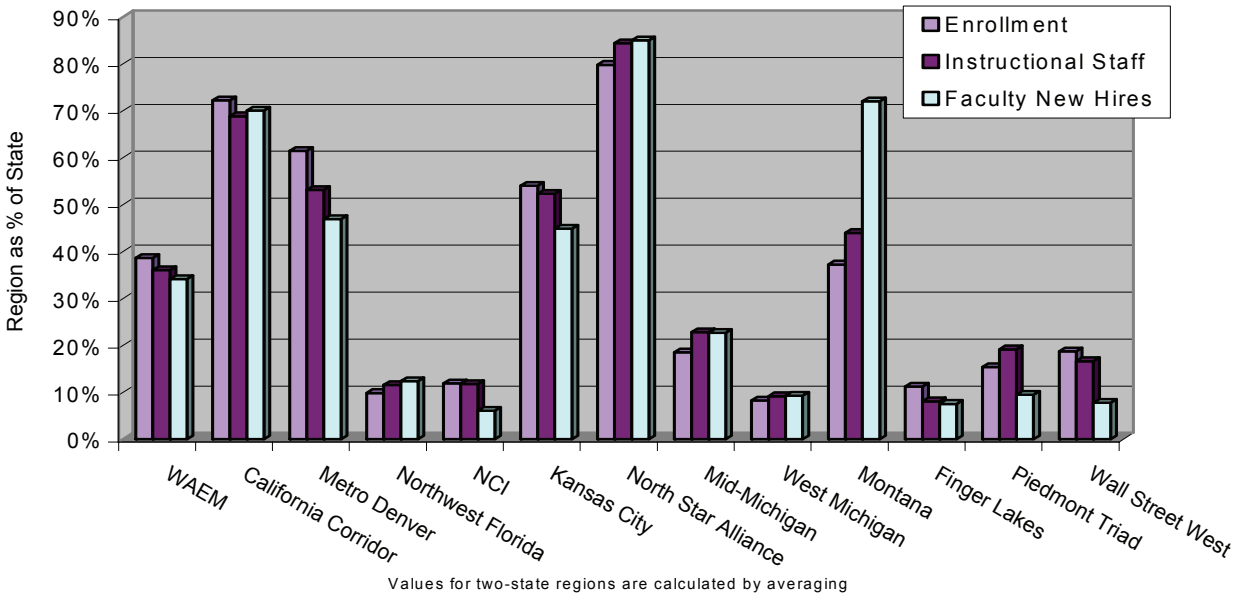


Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS)
[a] Includes all students in colleges and universities that grant graduate degrees, including students who only earn Bachelors' degrees.

Staffing, Enrollment, and New Faculty Hires as Leading Indicators

Figure 6.17 compares regional enrollment and instructional staff levels (FTEs), again as a proportion of the same measures for the state. These measures reveal the teacher and faculty resources available to students. The figure displays data for two-year institutions. Data for non-degree-granting, four-year, and advanced-degree-granting institutions are charted in Appendix E.

Figure 6.17
WIRED Regions vs. Host States: Comparison of Enrollment and Instructional Staff for Two-Year and Technical Colleges as a Proportion of State Totals, AY2005



Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS)

Again, those regions that are home to the state's major educational institutions represent the majority of the state's instructional staff and new faculty hires. The striking exception to this pattern is Montana, in that the two-year institutions in the Montana region appear to have done proportionally more hiring in AY2005 than those in the state as a whole. Whether this continues as a trend or whether regional hiring decreases will be interesting to observe, since the number of instructional staff FTEs is already slightly higher than student enrollment in the region.

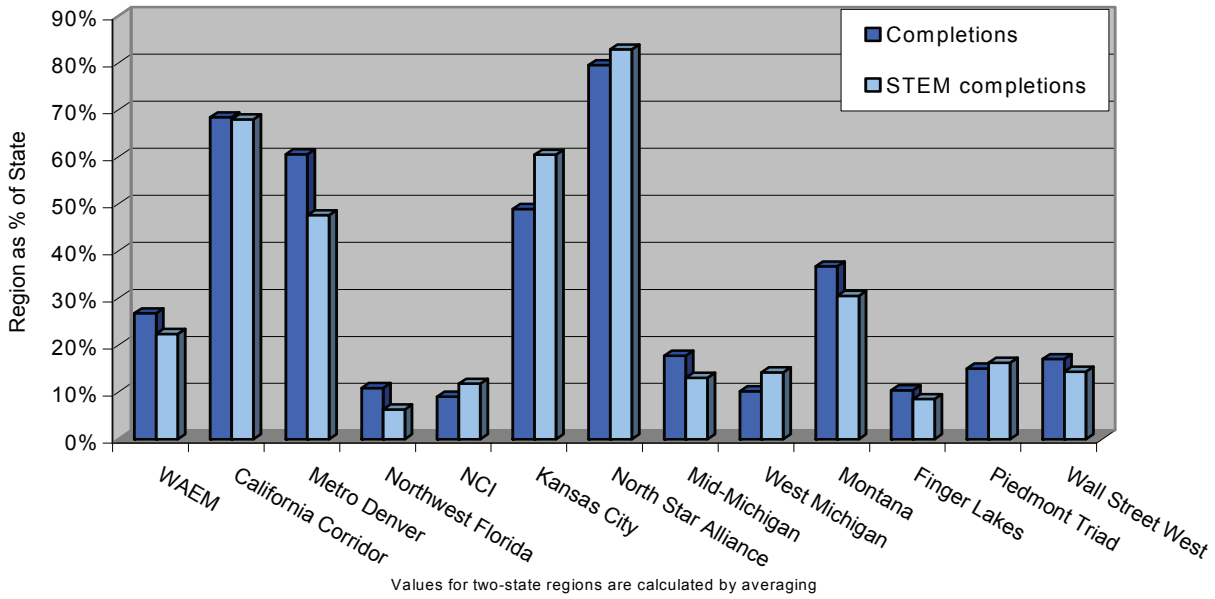
STEM Degree Completions

The WIRED Initiative places special emphasis on science, technology, engineering, and mathematics (STEM) education, as STEM graduates may be the drivers behind the development and dissemination of innovative technology. Thus, the evaluation also specifically compares the proportion of STEM degree completions to all degree completions for the same period from the same institution. The question of which subjects constitute STEM fields has not been

definitively answered: the Carnegie Foundation has one definition, while the U.S. General Accounting Office (GAO) uses another. Although the Carnegie Foundation's definition corresponds more closely to what most scientists would view as STEM, it is missing many of the fields appropriate for two-year graduates, such as laboratory technician skills, computer programming (as differentiated from theoretical computer science), and the like, so the evaluation team added these fields to the definition. The complete list of the evaluation's STEM subjects can be found in Appendix E.

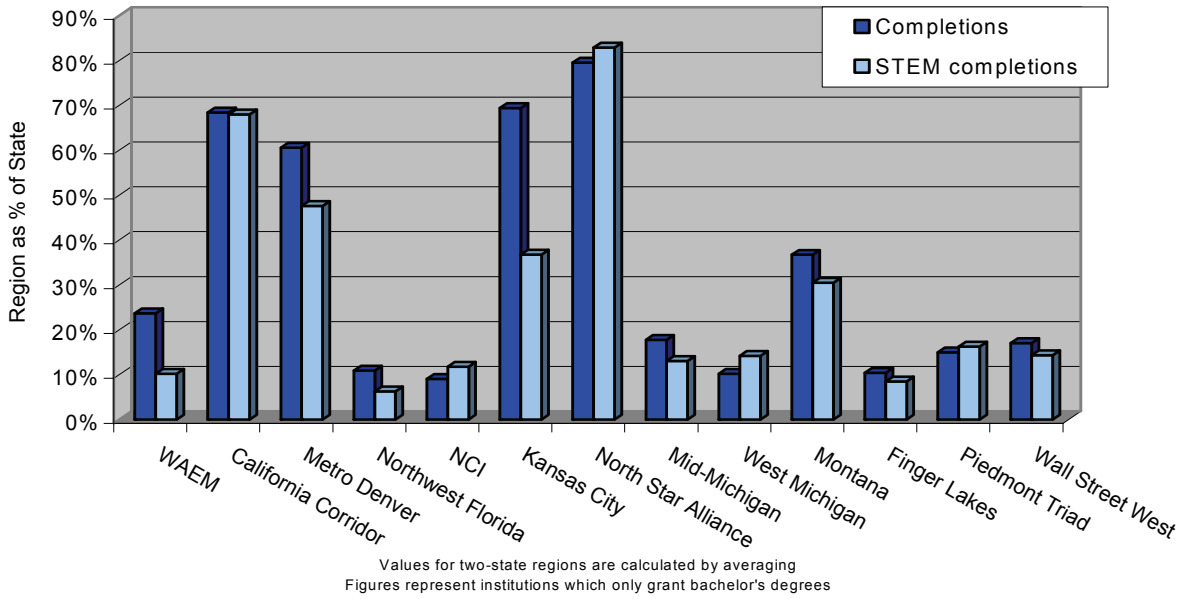
Figure 6.18 presents the number of each WIRED region's two-year degree graduates as a proportion of all such graduates in the state. Each region has a set of two bars, one for STEM graduates and one for graduates in all fields. For example, the North Star Alliance region accounted for a larger proportion of the state's STEM completions than degree completions in general. Kansas City institutions are generating a much higher proportion of both STEM degree completions and overall degree completions than other institutions in the state. Many regions are generating the same proportion of the state's STEM-trained two-year graduates as graduates across all majors. STEM completions for four-year and post-baccalaureate-granting institutions are shown in Figures 6.19 and 6.20.

Figure 6.18
WIRED Regions vs. Host States: Degree Completions for STEM Majors Compared to All Degree Completions for Two-Year Institutions and Technical Colleges as a Proportion of State Totals, AY2005



Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS)

Figure 6.19
WIRED Regions vs. Host States: Completions for STEM Majors Compared to All Degree Completions for Four-Year Institutions [a] as a Proportion of State Totals, AY2005

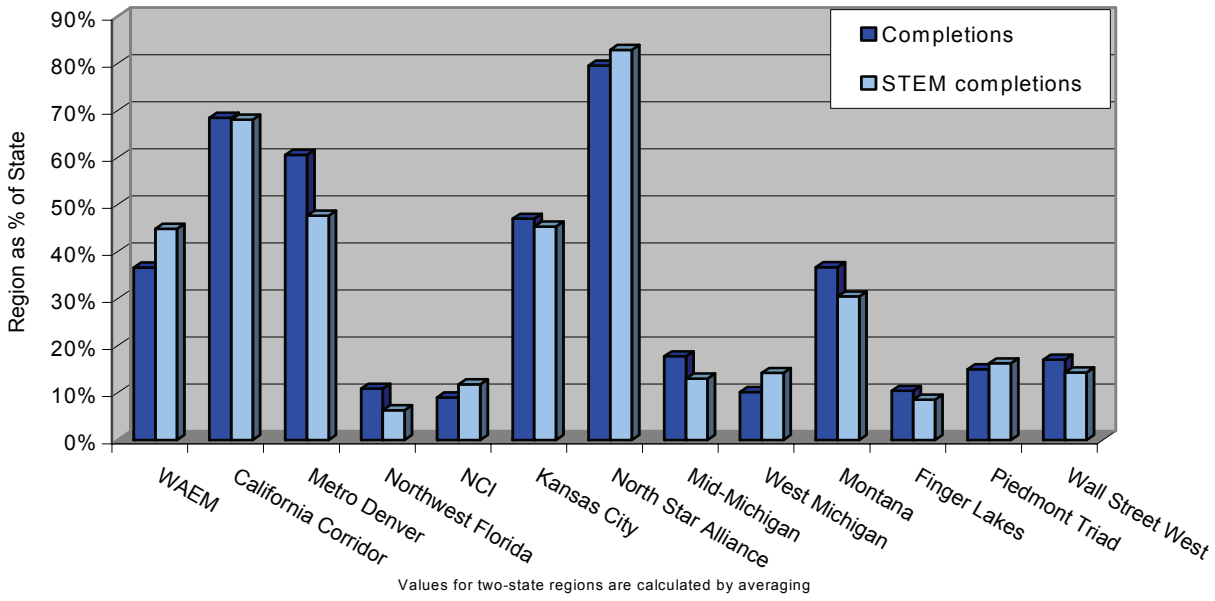


Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS)
[a] Includes only students in colleges and universities that grant four-year degrees, and not higher degrees.

The North Star Alliance region is graduating more four-year STEM graduates, in proportion to their total enrollment, than the state as a whole, as is the Piedmont Triad region of North Carolina. The WAEM region has proportionately fewer STEM four-year graduates than either the states of Mississippi or Alabama.

All regions appear to be graduating advanced degree students in STEM majors in close to the same proportion as their host states. One exception was the NCI region, which graduated 40% of the state's STEM majors, despite having only 15% of the total graduating students with advanced degrees in the state of Indiana. This may be related to the reputation of Purdue University, which is located in the region.

Figure 6.20
WIRED Regions vs. Host States: Completions for STEM Majors Compared to All Degree Completions for Post-Baccalaureate Degree-Granting Institutions[a] as a Proportion of State Totals, AY2005



Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS)
[a] Includes all students in colleges and universities that grant graduate degrees, including students who only earn Bachelors' degrees.

K-12 Education

Late in 2007, ETA issued a guidance letter to the WIRED regions[54] stating that educational programs are appropriate use of WIRED funds only for students over the age of 16. In states where the legal work age is 14, programs for 14-15 year olds might also be allowed, if a waiver is sought by the state and granted by ETA.

The evaluation team searched for appropriate K-12 education data sets in this first year of the study, however, none were identified that could be filtered accurately by region and state within time and budget constraints for this interim report. The team will continue to investigate appropriate data sources in order to assess the effects of Generation I WIRED activities that target students.

The extent of the analyses of such data will depend upon the focus of each region's activities. Not all of the regions are undertaking projects targeting school age youth, and regions tend to implement their education programs in one district or school, rather than throughout the region. As a result, the evaluation team may only analyze education data for the specific areas or institutions in which WIRED activities are being implemented.

[54] Memo to WIRED regions from Emily Stover DeRocco, November 19, 2007, "WIRED Policy on Investments in Activities for Secondary School Age Youth."

Summary of Measures Using Existing Data

The data items discussed in this chapter offer quantitative measurement of changes in the Generation I WIRED regions as they move toward transformation. The evaluation team will compare the baseline measures to those achieved in future years, as the WIRED Initiative proceeds. Since transformation is likely to take much longer than the WIRED grant period, the team has focused on leading indicators. Nonetheless, given the current downward turn in the economy and the long timeline needed to transform a region's economy, the evaluation team may only be able to document small changes using data from existing sources.

An interesting pattern emerges looking across the data reported in this chapter, which reinforces the observations of the evaluation's site visitors. In selecting the target industries with which to partner, some regions appear to have built on their existing strengths by picking business sectors that were already strong. Other regions appear to have chosen target industries that were not strong players in the local economy, but which the WIRED partners want to grow. By looking across the industries in which workers currently are employed, the education measures, and even the distribution of patent applications to some degree, one can see that regions such as the California Corridor, Metro Denver, and Kansas City have substantial workforces in their target industries, as well as education programs producing STEM graduates at all levels of expertise (from two-year to post-baccalaureate degrees). In addition to looking for business expansion in the regions that are growing new industries, the evaluation team will need to assess the degree to which WIRED has helped strengthen relationships between existing strong target industries and workforce investment and economic development agencies in the region.

The evaluation team is continuously seeking new sources of extant data to improve our evaluation of the WIRED regions' transformation. Over the next year, the team will continue to look for sources of relevant education data, and will analyze the WIASRD by region, looking at both customers of WIA's regular programs, and individuals who received training through local WIRED initiatives. In addition, the team will investigate a number of data sources suggested by the evaluation's Peer Review Panel, including:

- Census data on industrial investments and expenditures on R&D;
- IRS data on county-to-county migration; and
- IRS data on imports and exports by county.

These data may offer the evaluation additional perspectives on the effects of WIRED in the Generation I regions, providing they are available nationwide, at an appropriately fine geographic granularity, and collected at least yearly in a uniform manner.

Chapter 7: Patterns and Trends Across Generation I WIRED Regions

Setting out from widely divergent starting points, the 13 Generation I WIRED regions have chosen a wide variety of ways of coming together in new and expanded partnerships to achieve economic transformation. This evaluation is not simply an assessment of strategies and activities designed by the regions to advance their workforce investment or economic development goals, but also an examination of how regional organizations that are concerned with economic growth and global competitiveness collaborate with each other and develop new social relationships based on shared goals and a sense of regional identity. Cross-site analysis of the Generation I regions will promote understanding about the relative importance of particular regional assets and challenges—and the apparent effectiveness of particular strategic approaches—in shaping regions' success in implementing WIRED and beginning the process of economic transformation within their regions.

This chapter first analyzes the influence of several independent factors upon the dependent variables across the Generation I regional initiatives within the context of the evaluation's master themes. The first analysis explores the influence of a region's readiness for WIRED upon the region's goals, design, structure, and early implementation experience. The second analysis looks at whether the type of organization that is managing the WIRED initiative appears to affect the speed of the region's early implementation, while the third examines the influence of the regions' approach to spending grant funds on the same dependent variable. The analysis that follows identifies promising strategies that the regions are using in implementing various components of their initiatives. This section ends with a brief discussion of the relationship between the comprehensiveness of a region's initiative and its ultimate success in transforming its regional economy. The second section of this chapter looks at workforce investment system transformation. The chapter concludes with a summary of the evaluation's next steps.

Master Themes

The evaluation's cross-site analysis focuses on three critical aspects or master themes of regional economic transformation:

1. Regional alliance-building and regional identity development across geographic and professional boundaries;
2. Specific organizational and programmatic strategies, including governance, co-investment, and concrete business, economic development, and workforce investment initiatives; and
3. Measurable progress toward sustainable economic transformation, as indicated by outcome metrics related to regional economic well-being and workforce preparedness.

Implicit in the first of these master themes is the hypothesis that collaboration across geographic and professional boundaries is central to regional economic transformation. Such collaboration requires that partner organizations not only have the ability to work together, but also share a

vision for both the present and the future. It also requires a common understanding of the importance of integrating and leveraging the resources of all relevant institutions and systems in the region: private sector, workforce, economic development, education and training, universities, R&D centers, investors, and all others needed for region-wide economic growth. Genuine collaboration requires boundary-spanning not only across systems (economic development, workforce investment, education, business, government, nonprofit), political jurisdictions, and government agencies, but also across competing players within systems (such as the community college system, the workforce system, or a particular industry), and across different levels within organizations.

Genuine collaboration also requires a sense of shared identity within the region and a common sense of purpose. An examination of how the region is defined, the opportunities and challenges around which it coalesces, and the extent to which the regional identity encompasses the partners' shared understanding of the goals, strategies, and—importantly—measures of progress and success in regional economic transformation, is key to this cross-site analysis.

A second hypothesis is that, although the regions use differing organizational and strategic approaches to implementing specific activities, grouping them is possible to determine which organizational and programmatic strategies are the most valuable contributors to economic transformation. As the evaluation progresses, the analysis will ultimately group and compare regions according to the extent to which they are able to bring about progress toward lasting economic transformation within their regions, and to look for the extent to which regions that have made the most significant progress share background characteristics or strategies.

Cross-Region Analysis

The preceding chapters looked at the Generation I regions along different dimensions and grouped them according to the key features of these dimensions. These groupings do not reflect either positive or negative characteristics of the different regions; they are simply a mechanism for evaluating the advantages and disadvantages inherent to each set of characteristics as they relate to the regions' progress toward the goals of the overall WIRED Initiative, as well as to their own regional goals. This chapter uses the sets of independent and dependent variables identified to date, and assesses what these factors reveal about the evaluation team's hypotheses regarding the implementation of WIRED by the 13 Generation I regions.

Readiness for WIRED

As noted in Chapter 2, a number of characteristics define the extent to which the regions were ready for WIRED. That chapter reviewed the regions' different starting points and identified factors that contributed to readiness. These factors include: notable pre-existing economic conditions; the extent to which a region already identified itself as a region geographically, economically, politically, or culturally; the history of collaboration across business, workforce, education, and economic development entities; and the extent to which the strategies and projects the regions would pursue were already in place.

Grouping the WIRED Generation I regions according to their readiness for WIRED, (i.e., their readiness for collaboration and change), generated three categories:

1. **Accelerated by WIRED** – In these regions, much planning, research, and goal/priority-setting had been done prior to WIRED, and the WIRED funds were used to scale up and expand pre-existing or ongoing projects. Many of the key players were already at the table, and inter-institutional collaboration was already taking place. Regions in this group are Denver, Northwest Florida, and West Michigan.
2. **Jumpstarted by WIRED** – In these regions, a relatively concrete, WIRED-type concept existed but was not yet underway, and WIRED funds were used to refine and implement concepts and project ideas that were already in the works. Regions in this group are California Corridor, NCI, Finger Lakes, Kansas City, Mid-Michigan, North Star Alliance, and Piedmont Triad.
3. **Launched by WIRED** – In these regions, the idea of a regional collaborative initiative was just starting to come into focus, and the WIRED funds were used to define and implement new or developing projects. Regions in this group are Montana, Wall Street West, and WAEM.

Categorizing the 13 regions according to their readiness for WIRED allows consideration of this construct as an independent variable that may affect the ability of the regions to implement WIRED and make progress toward sustainable economic transformation. Aspects of the regions' WIRED implementation that might be affected by readiness for WIRED include their goals, design, structure, governance, leadership, decision-making, and speed of implementation.

Readiness for WIRED: Goals

Regardless of their readiness for WIRED, none of the regions appeared to have difficulty developing goals or ensuring that these goals were in alignment with the requirements of the WIRED SGA. No evidence emerged of anyone trying to force the goals of existing projects into the WIRED framework, or of creating goals from scratch simply to be eligible for WIRED funding. Regions that had projects or detailed plans already underway prior to WIRED, such as Northwest Florida, tended to have already developed a clear strategic vision for regional economic transformation that easily translated into goals for their WIRED grant. Similarly, the two Generation I regions in Michigan (Mid-Michigan and West Michigan) had existing state and sub-regional initiatives combining workforce and economic development with goals for transforming these systems that could be adapted for their WIRED activity. Regions that were in a high state of readiness for WIRED often reported that a large part of the attraction of the WIRED funding was that it matched so closely the goals they had already set for themselves. For example, in the California Corridor, the WIRED Initiative was an almost perfect match with the California Space Authority's strategic plan; the only challenge was adding workforce system transformation goals.

Regions that were less ready for WIRED generally needed to put more effort into developing their goals and bringing them into focus within the WIRED framework. Respondents in none of the regions reported difficulty in doing this, however. Further evidence of the regions' success

in developing goals consistent with the overall WIRED Initiative was the very small number of reported changes in goals between the original proposal and the implementation plan.

Readiness for WIRED: Design

The degree of readiness for WIRED did appear to impact the design process. Regions that were relatively ready for WIRED were less likely than others to undergo a collaborative process of designing their goals and strategies. This was because the regions that were the most ready tended to have leaders and managers already involved at the time of the proposal, with firm ideas about how the WIRED initiative should look. Although these individuals solicited input from prospective partners and other stakeholders, they did not feel a great need to involve them in the design phase. In addition, the regions that were most ready for WIRED had conducted asset mapping or a similar form of analysis prior to the start of the initiative, and this analysis provided a clear framework for the region's WIRED design. Regions such as Kansas City, which relied on the 2004 study that identified the Animal Health Corridor as an important element in regional economic development, and Metro Denver, which utilized the 2005 report that first noted the Colorado Paradox and the region's need to focus on improving its inadequate talent pipeline, designed their goals and strategies through a process that required little involvement of individuals or organizations outside of the immediate project management group.

Readiness for WIRED: Structure

Readiness for WIRED affected the structures that each region developed in several ways. In regions that had established related projects and initiatives prior to WIRED, the entity that was already engaged in operating or managing the existing project(s) would be an obvious choice for leadership of the WIRED initiative. Although the designation of the lead organization in the regions that were most ready for WIRED was generally done at the time of proposal application: several important exceptions emerged. In Mid-Michigan, for example, leadership of the WIRED activities was assigned to the newly-established Prima Civitas organization soon after the grant award was made, and each of the funded partners in the WIRED collaborative agreed to give back a percentage of the monies they had been allocated in order to fund the new organization's management of the grant. In Wall Street West, an organization with geographical boundaries that corresponded to those of the region was selected as the project manager, over an organization that had been instrumental in developing the Wall Street West concept, but did not cover the entire region. In the NCI region, Ivy Tech Community College was initially proposed as the lead for WIRED, but the Governor's Office believed that proposing a major research university (Purdue) as the lead instead would give the region a competitive advantage in the funding process for the WIRED Initiative.

Another way in which readiness for WIRED affected the structure of each region's initiative was with regard to how the partnerships were organized. The regions that were most ready for WIRED used their existing partnership structures and had a detailed understanding of who else should be at the table and which new organizations might need to be invited to participate. In Northwest Florida, for example, the lead organization, Florida's Great Northwest, organized the WIRED partners following organizational structures and formal partnership agreements of a type with which the parent organization was familiar. Although the regions that were faced with the

task of refining a concept or developing a new initiative appeared to have little difficulty in identifying and recruiting partners and establishing organizational structures, they tended to have more need for negotiation and determination of the ground rules for participation in the regional collaboratives. In Montana, the framework provided by the governor facilitated the formation of new partnerships between the state agencies and the region's business concerns.

Readiness for WIRED: Governance, Leadership, and Decision-Making

Readiness for WIRED also affected the regions' governance, leadership, and decision-making processes. In addition to being likely to have established partnership structures, regions that were ready for WIRED tended to have specific governance and decision-making procedures and structures—or detailed plans for such—in place at the time of the award. These procedures and structures varied widely, however, from strict hierarchies to highly consensus-driven models. Leaders in the North Star Alliance, for example, made the choice to make WIRED-related decisions by consensus, while Finger Lakes operates in a relatively hierarchical fashion. In the California Corridor, the grant's leaders made basic design and partnering decisions during development of the WIRED proposal; nonetheless, ongoing decisions for the region's 26 individual projects are generally made by the projects themselves or via cross-project task forces, and are frequently adopted through consensus.

Regions that were less ready for WIRED, such as WAEM, needed first to consider the types of governance and decision-making that might be most effective or appropriate for their WIRED initiatives, and then to create the required structures and procedures. WAEM created a new bi-state Governing Commission, with representatives from each of the main types of partners: business, education (community colleges), economic development, and workforce development. These regions needed time, not only to get the new structures up and running, but also to allow themselves the chance to see how their creations were working before tinkering with them. A few regions that appeared to be less ready for WIRED, however, streamlined this implementation step by using their existing state workforce investment and commerce agencies to operate their initiatives.

Regions that were more ready for WIRED, coming from a different starting place, did not need an extended period of time before making modifications to governance and decision-making processes. For example, in West Michigan the leaders of the WIRED initiative have already made such a change, moving toward a more consensus-driven model and away from their original, relatively top-down processes.

Readiness for WIRED: Speed of Early Implementation

As might be expected, regions that were ready for WIRED required little time for start-up (since many of their proposed activities were already underway), and were likely to have jumped right into their WIRED activities. Northwest Florida, for example, initiated procedures for inviting competitive bids for WIRED subcontracts very early in the implementation process, and the region was able to provide WIRED funds to ongoing projects—as well as more recently developed ones—quickly and efficiently. Regions that were relatively ready for WIRED could

also move quickly to add or expand their activities to take advantage of new partnerships or new resources, as Mid-Michigan did in developing new investments in alternative energy.

Regions like WAEM, on the other hand, were relatively slower to implement certain activities, such as training programs in the target industries, due to their need to do the asset mapping and other research necessary to identify priorities and develop specific strategies and activities. Establishing a region across state lines using agencies that had never worked together in the past also slowed implementation of their WIRED initiative.

Nonetheless, some of the regions that might be expected to need more time to start their WIRED initiatives also began implementing their strategies fairly quickly. Regions such as Montana and the North Star Alliance lacked existing regional partnerships and structures, but moved ahead quickly with implementing their WIRED initiatives anyway. They had a clear vision of the needs of their single target industries, and, as mentioned above, used their existing state structures to implement WIRED.

Kansas City is another region that might be expected to have had a slow startup, since the region encompasses parts of two states. The presence of a strong regional identity and regional economic development organization helped them overcome any barriers that the state line may have imposed.

A final example is Piedmont Triad, which brought to its WIRED initiative a manufacturing legacy in which education is not valued, considerable competition exists among city/county-level economic development entities, and collaboration has been limited. Even so, the region's strong pre-existing regional identity and pre-existing regional economic development structure with a recently-developed strategic plan served to speed early implementation of Piedmont Triad's WIRED program.

In sum, a region's overall readiness for WIRED can influence the speed of its early implementation. Just as important, however, are the constellations of specific readiness factors that, in combination, affect how quickly regions are able to get their initiatives off the ground.

Type of Organization Leading WIRED: Speed of Implementation

When the evaluation began, the research team anticipated that the type of lead organization, and the way in which it was structured, would affect the speed of implementation, and that certain types of lead organizations would be better able and better positioned to move quickly to implement the region's WIRED goals. In two regions—the North Star Alliance and Montana—the lead organization was a state agency (the Office of the Governor for the North Star Alliance and the Department of Labor and Industry for Montana). In the other 11 regions, the lead organization was a nongovernmental entity—often one involved in economic or business development that had not previously received funding from ETA. In most of those 11 regions, however, the state agency responsible for WIA and other ETA grants and services was involved as the grantee and as an important WIRED partner. Although the type of lead organization appeared to have little effect on the speed of implementation, the involvement of the state workforce agency did make a difference. The regions that had a high level of involvement from

the workforce agency were not necessarily able to implement their WIRED activities more quickly, but they did tend to have less difficulty in establishing structures for reporting and measuring success, most likely because they received clear guidance from the state. In contrast, the regions that had less involvement of the state workforce agency tended to have a more difficult time managing the grant requirements for WIRED.

Approach to Spending: Speed and Ease of Implementation

Another factor that might affect both the speed and the ease of implementation was the region's approach to spending. Some of the regions, such as Finger Lakes, California Corridor, and Mid-Michigan, allocated funds to partners who were an integral part of the strategy presented in the original application. Although several of these regions made changes over time in the amounts given to different recipients, the grant leadership in these regions continued to distribute WIRED monies through a process of allocation. Finger Lakes, for example, assigned a large portion of its WIRED grant to the University of Rochester in the first year of the grant and then reassigned funds in the second year.

Other regions established mechanisms for distributing their funds through a competitive bidding process. These regions defined overall grant programs, such as Northwest Florida's Secondary Education Grant Program, and then identified recipients through an RFP process.

The evaluation team expected to see differences related to the regions' approach to spending in both the speed and the ease of implementation, with the regions that chose to pre-allocate the WIRED funds being able to proceed more quickly and easily. Thus far, no evidence of such differences has emerged, however. Although in regions like the California Corridor, some of the projects were able to get underway quite quickly, overall, setting up a competitive bid process did not appear to be any more difficult or time-consuming than sole source agreements. Many of the regions that used competitive processes were able to set them up quickly, and implementation proceeded smoothly.

Specific Activities and Programmatic Choices: Promising Approaches

Each region took many reasons and factors into consideration when selecting its WIRED activities and when developing and implementing them over the course of the initiative to date. Particular activities stand out as demonstrating promising approaches to regional transformation. These promising activities include, among others: requiring organizations seeking WIRED funding to develop new partnerships; inviting stakeholder involvement in the proposal review process; seeking broad-based input into asset mapping and gap analysis activities; enhancing existing structures for educating and nurturing entrepreneurs; building strong ongoing communication structures between industry and educators; creating new routes of entry into high-demand occupations such as nursing; encouraging partnerships among educational institutions and among WIBs to create region-wide initiatives; and connecting universities and other research facilities with industry to create more demand-responsive research and development.

Comprehensive Approach to WIRED: Success in Economic Transformation

An important question for the evaluation of the Generation I regions is whether and to what extent a region that takes a comprehensive approach to WIRED—one that involves simultaneous efforts in economic development, talent development, and the transformation of community attitudes and expectations—will contribute to the region's success in achieving both the goals of the overall WIRED Initiative and the region's own goals for prosperity and global competitiveness. In most regions, comprehensiveness also has another dimension: addressing the full range of economic, workforce, and education issues, such as worker retention, lifelong learning and skills upgrades for incumbent workers, innovation, entrepreneurship, making existing industry more competitive, relying less on both outsourcing and recruiting workers from other countries, etc. The expectation is that regions with such a comprehensive approach may, over time, be more successful in achieving their goals, than are regions that take a narrower or less integrated approach.

At this point in the evaluation it is too early to assign regions to groupings of "more comprehensive" and "less comprehensive" approaches. All 13 Generation I regions recognize the need for a systematic, integrated approach, and they are all, at least to some extent, striving to achieve what was described in Chapter 2 as mutually-reinforcing goals, strategies, and activities. The example given of this comprehensive approach was of the California Corridor, which addresses the cross-cutting theme of prosperity by focusing on both the business development and the workforce investment aspects of its engineering-based industries, while at the same time engaging in activities to change the perceptions and interests of parents and young people about the value of math and science education. At this early stage, most regions have comprehensiveness as a goal; as the regions evolve further, the evaluation can evaluate more accurately how comprehensive they actually are.

Cross-Site Issues in Workforce Investment System Transformation

The long-term goal of changing the philosophy, orientation, and delivery of workforce services is at the heart of the WIRED Initiative. WIRED seeks to modernize public workforce investment systems that were originally designed on a social service model that mirrored an economy based on industrial production and an interchangeable, high school-educated labor force. The jobs of the 21st Century often require post-secondary education with an emphasis on science, technology, engineering, and mathematics. Moreover, the economy is no longer defined by state or municipal boundaries, but by regionally-based clusters, supported by innovation and talent.

ETA has outlined several elements of workforce investment system transformation, shown in Figure 7.1. While transformation will not be manifested in the first year of WIRED implementation, workforce investment partners in several of the Generation I regions are beginning to make changes that move them in the direction pointed out by these elements. For example:

Figure 7.1

Elements of Workforce Investment System Transformation

1. The workforce investment system operates as a talent development system; it is no longer defined as a job training system. Its goal is an educated and prepared workforce – on a U.S. or global standard.
2. Workforce investment system formula funds are transformed, providing significantly increased opportunity for post-secondary education for lifelong learning opportunities aligned with the region's talent development strategy.
3. The workforce investment system no longer operates as an array of "silo-ed" programs and services.
4. The workforce investment boards are structured and operate on a regional basis and are composed of regional strategic partners who drive investments, aligning spending with a regional economic vision for talent development.
5. Economic and workforce investment regions are aligned, and these regions adopt common and innovative policies across the workforce, education and economic development systems and structures that support talent development and the regional economy.
6. The workforce investment system is agile enough to serve the innovation economy, recognizing the reality that 2/3 of all new jobs are created by small businesses.
7. The workforce investment system actively collaborates with economic development, business and education partners to gather and analyze a wide array of current and real-time workforce and economic data in order to create new knowledge about regional economies. The system supports strategic planning, routinely tracks economic conditions, measures outcomes, and benchmarks economic competitiveness in the global marketplace.

Source: ETA, July 17, 2007

- Element 3: The North Star Alliance is bringing together funds from various WIA "silos"—including apprenticeship, WIA adult and dislocated worker funds, and WIRED—to cover the costs of worker training;
- Element 4: Local workforce investment boards in both Denver and Kansas City have formed regional alliances to coordinate their efforts;
- Element 5: Many of the states that are home to the Generation I WIRED regions have located their workforce investment and economic development agencies in a single state department. Michigan has also taken the step of aligning the boundaries of its workforce and economic development regions; and
- Element 6: In addition to supporting new businesses, the regions that are emphasizing entrepreneurship have the potential to prepare their partners, including local workforce investment boards, to learn the agility necessary to work effectively with small businesses.

While the public workforce investment system is heavily invested and involved in WIRED, most of the Generation I WIRED initiatives are led by organizations that are not typically partners in workforce investment. With the exception of Finger Lakes, Montana, and North Star Alliance, the leadership of the Generation I WIRED regions largely comes from organizations outside of the workforce investment system. This dichotomy creates a challenge for the meaningful engagement of the public workforce investment system in making the changes envisioned in the WIRED SGA and in the Elements of Workforce Investment System Transformation. The evaluation team will continue to observe the integration of the workforce investment system as the implementation of WIRED in the Generation I regions unfolds, as well as how those relationships are sustained after the WIRED grants end.

The Wired Initiative stresses that, more than just a collection of job training programs, the workforce investment system of the 21st Century needs to be one that focuses not only on developing an educated and prepared workforce but also on aligning talent development efforts with a regional economic vision. The Initiative recognizes that what drives economic development is not only technology, but also the ideas that create new technology, and ultimately the people who generate those ideas. ETA and the regions themselves believe that the education system must go beyond simply teaching the skills necessary to work in the advanced manufacturing, health care, or engineering fields, but must also equip future workers and leaders with the skills of critical thinking, problem-solving, and quantitative analysis. In addition, many WIRED respondents stress that an entrepreneurial spirit, as the cornerstone of innovation, is needed from all participants in the modern economy, whether they are employees of a large organization or proprietors of home-based or other small businesses.

The challenge for both the implementation and the evaluation of Generation I WIRED is keeping up with the numerous complex and overlapping programs within and across regions. The diverse strategies and activities reflect the context and goals of each individual WIRED region and also demonstrate the start of the transformative process. The walls between workforce, economic development, education, and industry have been breached, and strategic collaborative partnerships have developed and are beginning to mature. At a minimum, the conversation has been started, as former competitors or heretofore disinterested parties are coming to the table and recognizing their common interests.

What may be the most important measurement of transformation is not whether the specific strategies and activities started under WIRED can be sustained, but that the underlying logic of collaboration between disparate stakeholders to support economic innovation on a regional level is maintained. The success of the strategies and activities will not be solely realized in the numbers of companies started and jobs created. Real, lasting success will be the change in how people think and act in starting new companies and creating new jobs.

Next Steps

This Interim Report is a snapshot of the activities and achievements of the Generation I WIRED regions to date. The evaluation's initial analysis of Generation I regions revealed the regions to be boundary-spanning collaboratives that cross geographic boundaries, political jurisdictions,

organizational responsibilities, and, in many places, cultural differences. The extent to which both the individual regions and ETA itself act as learning communities that adapt as they learn, especially with regard to developing new methods of working together across boundaries, is striking. The evaluation thus far has developed a baseline understanding of the relationships that have been established and of where on the continuum of regional collaboration each region falls. The research will survey a much larger group of people in 2008 than were interviewed during the first round of site visits; the results of this survey will be especially useful in measuring progress in regional collaboration in the Generation I regions.

The next round of social network analysis will be extremely revealing as well. A primary indicator of progress may be the extent to which individuals who otherwise would not interact with each other are beginning not only to interact, but also to expand their own networks in pursuit of common regional goals. As the WIRED initiatives mature, more partners, from a wider range of institutions, are likely to participate in the regional collaboratives, and social networks in the regions are likely to be characterized by a broader geographic reach. Finally, if the collaborations are working, the social network analysis should show increased two-way connectivity among individuals in the network, as well as more frequent interactions.

In addition to continuing to examine regional collaboration, the evaluation team will pay significant attention to issues related to goals, strategies, organizational structure and governance, and activities, and to what extent these change or are adapted over time. The evaluation will monitor how goals and programs change over time as the regions learn more and build more capacity, and will continue to assess the extent to which the partners share and build a common vision, maintaining their contributions of time and resources to the WIRED Initiative. In addition, the research team will pay attention to issues such as the growth of regional thinking and the development of a clear identity that allows each region to cohere internally and communicate effectively externally. Finally, as noted in this report, the regions vary greatly in the extent to which the local workforce investment systems are either leading, participating in, or sitting on the sidelines of WIRED. The evaluation will continue to assess the involvement of the public workforce investment system in WIRED as more WIRED activities are implemented.

As this Interim Report reveals, most of the Generation I regions are clear about what success will look like for them, but are still grappling with how such success will be documented. Interestingly, the need for regional identity development and branding has led most of the regions to begin gathering data and concrete evidence about their capabilities, assets, and successes. The fact that the regions are learning as they go suggests that the quality of performance measurement and reporting will increase significantly over time. The evaluation will benefit from the increased availability of outcome data as the regions implement activities for which desired outcomes and metrics are built into their implementation plans.

In sum, this report has provided an initial look at how the regions have progressed in implementing the WIRED Initiative. Compared to the evaluation's first site visits, over the next two years the regions will be much more actively involved in implementing projects that have been identified and supported by the collaborative processes they have developed. The second Interim Report will provide a great deal of insight into the progress that the Generation I regions are making on these critical fronts.