RURAL KNOWLEDGE CLUSTERS:
EXPLORING THE ROLE OF INSTITUTIONS IN NORTHWEST MINNESOTA'S RECREATIONAL VEHICLE INDUSTRY

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Introduction: Surviving in a Rural Economy

The impact of globalization, both in terms of the opportunities it affords and the challenges it presents, is now a well-established feature of economic development. Due to increased openness in markets, economies can no longer depend on protection from global competition. Industries that prosper in the current climate are those characterized by innovation and high-value added products. Industries that suffer and are in decline are those supplying standardized, low-value added products; in short the product markets that have become highly susceptible to global competition.

In the context of rural economies, global competitiveness has often had dramatic effects. Rural economies, in large part, have traditionally supplied low-value added markets, and in recent years their decline has been well documented. The historical components of competitive advantage for rural economies, namely access to primary goods and low production costs, have been compromised by globalization. Traditional agriculture and basic manufacturing have long been the economic backbone of rural communities. These two industries in particular have been subjected to increasingly competitive sources as globalization has taken shape.

Furthermore, rural decline has been exacerbated by the structural phenomenon of out-migration from rural communities, (which is an often cited explanation for the economic performance gap between rural and urban economies.) The problem of out-migration also contributes to the inability of rural businesses to compete on scale and may inhibit specialized division of labor, two important factors that put rural economies at a further disadvantage. The story of rural decline is underscored by other measures such as average wages, educational attainment, occupational composition and patent activity. In all of these categories, there is a significant statistical gap between rural and urban communities.

The economic success of rural communities largely depends on transitioning away from markets in which their competitive advantage has been usurped by globalization and toward innovative high-value added production. In short, rural economies face the challenge of competing in a knowledge-based economy. The challenge for policy makers, for economic and workforce development professionals and for business leaders alike is to seek to understand the mechanics of high performance economies (both rural and urban) and the role that knowledge plays. Ideally, such analysis will contribute to the strategic promotion of those sources of economic vitality that sustain communities.
The dynamics of industrial districts have a long history among economic theorists, and the seminal work of Marshall, Young and Weber laid the groundwork from which regional science and industrial location theory emerged in the 1950s and 1960s. In the 1970s and 1980s, competition from both domestic and international, low-cost production locations overwhelmed established industrial regions and caused substantial de-industrialization of United States regions such as the Northeast and Midwest. In the face of this trend, a body of literature developed that endeavored to explain notable, regional success stories. In particular, these accounts noted the tendency of firms, both within a given industry and across related ones, to “cluster” spatially. This was most evident in industries where constant innovation in products and processes fostered self-sustaining regional competitive advantages on national and global levels.

More recent analyses of regional development have built upon the influential work of Harvard business economist Michael Porter, and the model of industry clusters. His work in this area builds upon the cluster studies of the 1970s and 1980s, but fuses it with theories of entrepreneurship, institutional economics and social capital as well as the fundamentals of business strategy in such a way that the result may be legitimately described as a renaissance of regional development theory. Porter's use of the industry cluster model has now become a basic component in describing the mechanics of regional economies.

The industry cluster framework suggests that innovative businesses compete by producing high-quality, value-added products in an economy where high-volume, low-value products can be produced at lower cost in other parts of the world. He argues that the innovative capacity of regional businesses may be strengthened by their involvement in industry clusters – geographic concentrations of firms in related industries that do business with one another and share needs for similar talent, technology, and infrastructure. Innovative businesses and competitive industries are, in Porter’s view, the foundation for prosperous regional economies.

In the diamond of advantage model, Porter identifies four aspects of industry clusters that may facilitate innovation. First, he suggests that factor conditions, such as the availability of specialized labor and infrastructure, influence the innovative capacity of regional businesses. Porter also cites home demand – local customers who push businesses to innovate and whose needs and tastes may anticipate global demand – as an important driver of innovation. A third aspect of industry clusters that may encourage innovation is related and supporting industries –

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1 Information in this section summarizes previous work by the State and Local Policy Program. For more detail, see:

2 The shoemaking industry in northern Italy, industrial machinery in Germany and Japan and high technology in Silicon Valley and Boston are often-cited examples.

local supplier industries that may create business infrastructure or foster spin-off activities. Finally, Porter maintains that industry strategy, structure, and rivalry spur innovation, as local industries motivate one another through competition and cooperate on shared needs.

**Knowledge Clusters: An Extension of the Industry Cluster Framework**

Although Porter does not explicitly include knowledge in his diamond of advantage model, specialized knowledge is closely related to each of the model’s four components. For instance, individuals and firms affiliated with industry clusters may derive important knowledge of processes, technologies, and markets from their interactions with specialized labor pools. Demanding local customers, innovative suppliers, and competitors may also provide firms with valuable knowledge. Recognizing these connections, the State and Local Policy Program has developed a model of knowledge clusters. This model builds on Porter’s diamond of advantage, emphasizing the role of knowledge as a driver of innovation and a source of competitive advantage.

In addition to the four components of the diamond of advantage, the knowledge cluster model incorporates the influence of history and institutions on cluster development, growth, and competitive advantage. Specialized knowledge – and, consequently, innovation – may be derived, not just from the diamond of advantage, but also from a local historical base of knowledge about an industry or technology. Regions may benefit, for example, from knowledge embedded in industry employees or local residents. In addition, formal and informal institutions may support the development and maintenance of knowledge resources. Universities, technical colleges, economic development entities, and nonprofit organizations are some of the many institutions that may contribute to a region’s specialized knowledge base.

While the knowledge cluster model is applicable to both urban and rural economies, the State and Local Policy Program has focused considerable attention on rural economic vitality. In particular, the SLPP has explored the nature and performance of rural knowledge clusters, or knowledge clusters centered outside of major metropolitan areas. Rural knowledge clusters, like industry clusters, comprise networks of innovative, interrelated firms. However, rural knowledge clusters are unique in that their chief source of competitive advantage is knowledge. In particular, firms within these clusters derive competitive advantage from specialized knowledge about specific technologies, processes, and markets.
Rural Knowledge Cluster Framework

A Knowledge Cluster in Northwest Minnesota

In 1998, the State and Local Policy Program conducted a study of industry clusters in Northwest Minnesota. Among the clusters examined was the recreational transportation equipment cluster, which includes two key regional manufacturers, Polaris and Arctic Cat—makers of final goods such as snowmobiles, all-terrain vehicles, watercraft, buses, and track conversions for four-wheel drive vehicles—along with associated suppliers and retailers. The cluster is centered in Roseau and Thief River Falls, where the two largest domestic producers of recreational transportation equipment have operated for nearly half a century.

While the region is traditionally known for its snowmobile production, other products such as all-terrain vehicles (ATV’s), jet skis, and track conversions for four-wheel drive vehicles are taking on an increasingly important role. The larger manufacturers have historically produced final consumer goods primarily for the upper mid-west; however, in recent years, their markets have expanded both nationally and internationally. The smaller manufacturers in the region produce supplies for other firms in the region and some limited final goods as well as products

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4 For purposes of this study, Northwest Minnesota was defined to include Beltrami, Clearwater, Hubbard, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake, and Roseau counties. A detailed profile of the region and results of the industry cluster study are available in Munnich, L. W., Bau, M. M., Skelton, R. A., Warner, J. P., & Muesing, B. J. (1998). *Northwest Minnesota industry cluster study*. State and Local Policy Program and Minnesota Extension Service.
for other manufacturers in the rest of Minnesota and to a lesser extent the rest of North America and for international export.

The 1998 study involved interviews and focus groups with business representatives from the recreational transportation equipment cluster, and focused on the components of Porter’s diamond of advantage as they related to the cluster. With regard to factor conditions, these industry leaders expressed satisfaction with the strong work ethic of regional workers, low labor and transportation costs, abundant open space for expansion, and a corporate culture that encourages employees to “live the product.” On the other hand, business representatives reported shortages of workers with certain manufacturing skills. Further, interview and focus group participants felt that the region’s post-secondary institutions were not adequately preparing students for jobs in the region.

Turning to the other components of the diamond of advantage, business representatives acknowledged strong home demand for recreational transportation equipment. In particular, industry leaders suggested that Minnesota’s natural amenities, climate, and snowmobile trails created considerable demand for snowmobiles across the state. Industry leaders also noted a growing demand for watercraft and all-terrain vehicles. When asked about related and supporting industries, business representatives reported that regional and state supplier networks played an important role in their operations. With regard to firm strategy, structure, and rivalry, interview and focus group participants described intense inter-firm competition. At the same time, industry leaders reported that firms in the cluster sometimes cooperated and exchanged ideas.

The recreational transportation equipment cluster has been a successful and growing cluster despite being located in the most sparsely populated region of the state. It is considered a “classic” industry cluster due to its strong manufacturing base, internal cooperation and competition between producers, as well as local supply networks, significant economic importance to the region, strong local and national demand, and for not relying strictly on cheap labor or locally available raw materials. Further, because the cluster faces increasing competition from foreign and domestic markets it must find ways to be innovative and efficient, which are key indicators of specialized knowledge. As a result, the State and Local Policy Program extended the industry cluster study to explore the possibility that the recreational transportation equipment industry has characteristics of a rural knowledge cluster.

Preliminary evidence suggests that, consistent with the knowledge cluster model, regional history and institutions have influenced the cluster’s development. History, in particular, has shaped the cluster since its founding. Snowmobiles were developed in Northwest Minnesota because the region’s winter climate necessitated snow-friendly forms of transportation. Since the major snowmobile manufacturers were established, employment in these and related companies has endowed residents of the region with substantial knowledge of snowmobiles and other recreational transportation equipment. What is more, Northwest Minnesota residents have developed specialized knowledge of the cluster’s products by using them. Regional consumers of recreational transportation equipment are demanding, with tastes that anticipate broader consumer desires. This exigent home demand encourages innovation by cluster businesses.
Finally, the competition among cluster firms reflects, at least in part, the competitive snowmobile racing culture that they support.

Unlike history, regional institutions did not significantly influence the establishment of the recreational transportation equipment cluster. More recently, however, institutions may have contributed to the importation, development, and diffusion of cluster-related knowledge. In particular, early evidence suggests that educational institutions may support knowledge diffusion through customized training and contribute to knowledge development through process improvement.

Exploring Knowledge in the Recreational Transportation Equipment Cluster

The framework for *rural knowledge clusters*, which essentially promotes the idea that the competitive advantage found in vital, rural economies is the result of specialized knowledge, incorporates two key concepts. The first is that such clusters “exhibit a path of *historical* development and evolution to the local knowledge base.” The second is that both formal and informal *institutions* may foster “the creation, diffusion and renewal of the local knowledge base.” The purpose of this report is to extend the State and Local Policy Program’s preliminary examination of Northwest Minnesota and the recreational vehicles industry cluster first identified back in 1998. In particular, the study seeks to explore the relationship between the specialized knowledge base associated with the cluster and regional institutions. Goals of the study are as follows:

- Describe the knowledge base associated with Northwest Minnesota’s recreational transportation equipment cluster.
- Identify institutional supports for knowledge resources within the cluster.
- Identify additional roles regional institutions might play in the development and maintenance of the cluster’s knowledge base.
- Generate a basis for research in other rural clusters.

**Methodology**

To explore the knowledge base and institutional supports underlying the recreational transportation equipment cluster, in-depth, semi-structured interviews were conducted with representatives of universities, technical colleges, and economic development entities in Northwest Minnesota. Supplementary interviews were conducted with representatives of foundations, nonprofits, and government agencies when these organizations interacted substantially with businesses in the cluster. Respondents from each type of organization were identified using public databases and directories, and through the personal networks of project partners at the Department of Trade and Economic Development, Northwest Technical College, the Northwest Minnesota Foundation, and the Headwaters Regional Development Commission. Interviews were conducted by telephone between January and April 2003, and covered a range of topics, including communication between businesses and institutions, institutional supports for knowledge maintenance and development, and other types of assistance provided to the cluster.
Indicators of Specialized Knowledge

A basic economic indicator for a concentration of knowledge is the location quotient. The location quotient (hereafter referred to as LQ) is a technique used to compare activity in the local economy to a reference economy. The LQ is defined as the ratio of the share of an industry’s employment in the local region to the share of that industry’s employment in the reference region. For example, if a particular industry represents 2 percent of the Northwest Minnesota economy and 1 percent of the US economy, then its LQ is 2.0 (2.0% ÷ 1.0% = 2.0).

In this way, the LQ measures the relative concentration of an industry in a local area compared to the reference area. An LQ greater than 1.0 indicates that a local area has a relatively greater concentration of an industry than the reference area, while an LQ of less than 1.0 indicates that an industry is relatively less concentrated in an area.

In 2001, the LQ for the manufacturing sector in Northwest Minnesota, using the US economy as the base, was 1.6. This confirms that the sector is indeed a vital part of the regional economy. Furthermore, if we “drill” a little deeper into the manufacturing sector (meaning we look at more specific industry classifications), we find that the LQ for transportation equipment manufacturing, in which is embedded the manufacture of recreational vehicles, is 4.6. This indicates that this sector is more than four-and-one-half times as concentrated in Northwest Minnesota compared with the national economy.

The concentration of knowledge may be indicated by other measures as well. For example, educational attainment is perhaps the broadest measure of human capital commonly available. A highly educated workforce is thought to correlate with, among other things, higher wages and a higher degree of community prosperity. By consequence, educational achievement may contribute directly to a region’s long-term economic vitality. Although there are a variety of factors that influence educational attainment, one of the most salient with regard to rural communities is the pattern of migration. Rural communities can experience a net out-migration of well-educated workers (brain drain) or can attract well-educated workers from other locations.

The most common statistical benchmark employed to indicate educational attainment is the fraction of the adult population 25 years old and older that has completed a four-year degree or higher level of education. According to Census Bureau data, between 1990 and 2000 there was an average net increase in this parameter of approximately 3% among non-metropolitan communities in the US. By comparison, between 1990 and 2000, Northwest Minnesota experienced a net increase of approximately 4%. At the individual county level, 2000 census data show that among non-metro counties in the US, on average, approximately 15.9% of the population had attained the educational level of a 4-year degree or higher. By comparison, in NW Minnesota four out of twelve counties exceeded this level: Beltrami, Hubbard, Lake of the Woods and Polk (Beltrami ranked the highest with 23%).

Does this translate into higher than average wage levels for those employed in the recreational vehicles cluster? If one makes a comparison within the region of Northwest Minnesota itself, the answer is yes. The average weekly wage in 2001 for the region in general was approximately $457, whereas the wage level for transportation equipment manufacturing firms was
approximately $617; however, this is well below the wage levels at the state level ($709), the Twin Cities metro ($991), and the national level ($974).

An important caveat here is the issue of data suppression. The NAICS classification system recognizes the recreational vehicles industry under the code 336999 “all other transportation equipment manufacturing.” However, due to concerns over confidentiality, public data for this NAICS code is simply not available at the regional level. This means that we are only able to look at wage levels at the much more general level of transportation equipment manufacturing (NAICS 336). In so doing, we are comparing wage levels with such activities as automobile manufacturing, aerospace and aircraft manufacturing, ship building, as well as military armored vehicle and tank manufacturing. As such the wage comparison may be unduly weighted toward these other activities.

The cluster – and the region – benefits from knowledge of competitive manufacturing processes and an entrepreneurial manufacturing culture. In the interviews conducted it was often suggested that the region’s competitive advantage derives from “an improved workforce in manufacturing,” along with “manufacturing talent and education.” In fact one respondent in particular reported that Northwest Minnesota provides an environment in which manufacturing is “endemic to the culture.”

Firms in the recreational transportation equipment cluster play a central role in creating this climate, but the manufacturing culture and expertise benefits other manufacturers as well. One of the respondents interviewed mentioned a company he had worked with decided to locate in the region, rather than in North Dakota, because of the entrepreneurial manufacturing environment and the concentration of small manufacturing businesses in Thief River Falls.

<table>
<thead>
<tr>
<th>Table 1 – Northwest Minnesota Key Facts</th>
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<tr>
<td><strong>Employment Concentrations</strong></td>
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<td><strong>Manufacturing</strong> (NAICS 31)</td>
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<tr>
<td>Location Quotient: 1.6</td>
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<td>2001 Employment was more than 1½ times more concentrated compared with US as a whole</td>
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<tr>
<td><strong>Transportation Equipment Manufacturing</strong> (NAICS 336)</td>
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<tr>
<td>Location Quotient: 4.6</td>
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<td>2001 Employment was 4½ times more concentrated compared with US as a whole</td>
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<tr>
<td><strong>Engineered Wood Products</strong> (NAICS 32121)</td>
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<tr>
<td>Location Quotient: 9.67</td>
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<td>2001 Employment was nearly 10 times more concentrated compared with US as a whole</td>
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<td><strong>Per Capita Income (2001)</strong></td>
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<td>NW Minnesota: $23,764</td>
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<td>Non-metro Minnesota: $28,288</td>
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<td>Non-metro US: $28,158</td>
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<tr>
<td><strong>Industry-specific Income (2001)</strong></td>
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<tr>
<td>Manufacturing: $30,420</td>
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<tr>
<td>Transportation Equipment Mfg: $32,084</td>
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<tr>
<td>Engineered Wood Products: $48,152</td>
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<tr>
<td>% Population over Age 25 with 4-yr degree or higher</td>
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<tr>
<td>NW Minnesota: 17.5</td>
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<tr>
<td>Non-metro US: 15.9</td>
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<tr>
<td>% change from 1990</td>
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<td>NW Minnesota: 4</td>
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<td>Non-metro US: 3</td>
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* Data in table are for region that includes: Beltrami, Clearwater, Hubbard, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake, Roseau counties (Regions 1 & 2).
For example, if we look at data that describes wood product manufacturing we find indications that Northwest Minnesota exhibits a high degree of specialization in this industry. Using the same quantitative approach as above, the LQ for the general category of wood product manufacturing (NAICS 321), in 2001, is 2.89, meaning that the concentration of regional employment is nearly three times that of the national economy. Again, as we drill down into more specific industries within wood product manufacturing we find that veneer and engineered wood products (NAICS 32121) has an LQ of 9.67; employment in this industry is nearly ten times more concentrated, regionally, compared with the US economy as a whole. Further, the wage level for engineered wood products is significantly above the national average. In Northwest Minnesota, in 2001, average weekly wage in this industry was approximately $926, while the national average was only $627.

Support for Knowledge Resources: Information Sharing

The intent of this study is to examine more deeply the relationship between the industry cluster centered on recreational vehicles and the educational and economic development institutions that support the region. Principally, it seeks to do two things: 1) discover how these institutions currently support the industry cluster and 2) offer insight into how the relationship might be made stronger in order to capitalize on the talent and knowledge that exists in the region, thus contributing to its continued vitality.

Regular communication with regional businesses enhances the ability of institutions to provide appropriate supports and services. It is evident from interview responses that university representatives, economic development professionals and business leaders in the region each have their own well-established networks. It is through this network that the needs and activities of regional businesses are generally communicated.

There are a variety of ways by which educational institutions learn about business needs. Custom training and outreach centers continue to be the most important vehicles through which educational institutions liaise with the business community. Additionally, several higher educational institutions have advisory committees that include regional business leaders. Another important point of contact comes from educational representatives acting as consultants and going out into the business community to both uncover and address existing needs. One university representative learned of business needs through continuing education students who were employed in local businesses. Other sources of systematic information sharing include focus groups and questionnaires, outreach by designated staff members, and internships for both students and faculty.

Like representatives of educational institutions, there are numerous channels through which economic developers learn about the needs of regional businesses. Most representatives of economic development entities obtained information about businesses from professional contacts that work with local companies and have firsthand knowledge of their needs. Representatives of banks, government agencies, foundations, regional development commissions, and chambers of commerce were cited as the main sources of information, along with public officials, other economic developers, and the region’s Small Business Development Center. Several economic development workers learned of business needs through boards of directors that included
business leaders. Others reported that they regularly initiated contact with the businesses in their area. Finally, some economic developers stated that businesses approach them directly with requests for assistance.

Many of those interviewed indicated that simple word of mouth was a very common source by which information about business needs and activities is communicated. This type of informal channel may be a result of the many small, close-knit communities of Northwest Minnesota and clearly underscores the kinds of personalized networks that dominate in the region. However, what appears to be a major challenge is information sharing on a regional platform; there still appears to be a tendency toward atomization.

There is widespread contact between individual businesses and individual institutions; however, attempts to create opportunities for all parties (higher eds, development/workforce professionals and business leaders) to come together to communicate ideas and needs that may be considered regional in scope are less successful. For most institutional representatives, advisory committees and personal networks that connect with individual business leaders are the norm. Others indicated that chamber of commerce meetings functioned as forums for regional dialogue; one technical college representative reported that his community had a regular, open meeting at which elected officials and industry leaders could discuss pressing issues.

What is clear is that institutions in the region make a tremendous effort to create opportunities for all stakeholders to come together to help give shape to regional issues. Further, there does appear to be consistent lines of communication between higher education representatives and economic/workforce development professionals. The principal constraint is time.

> There are a hundred agencies trying to hold regional forums on this or that, and they don’t get much participation from business. They [the businesses] are busy trying to do their work…the regional thing isn’t core from the business perspective. [They] are pushed for their survival, so they can’t spend a lot of time if they don’t see a return… (Don Sargeant, Chancellor University of Minnesota, Crookston)

This is indeed a challenge in terms of coordinating policy efforts designed to capitalize on forms of specialized knowledge and sources of innovation. Broad level, structural analysis is meant to aide in strategic planning, such that resources are focused in a way that helps foster the economic health of the region.

**Support for Knowledge Resources: Skills Training**

How is institutional awareness of business needs translated into supports for knowledge resources? With respect to the recreational vehicles cluster and as well the general climate of manufacturing, regional institutions appear to be most active in supporting the maintenance and diffusion, rather than the importation or creation of specialized knowledge. In particular, representatives of regional universities and technical colleges reported providing employees in the cluster with training – and, consequently, skills and knowledge – essential to the success of the cluster. But skills training and knowledge diffusion should not be confused with innovation and entrepreneurial spirit.
Representatives of educational institutions and economic development entities suggested that, to remain competitive in the new economy, manufacturing businesses require well-trained workers with substantial technical knowledge. The dissemination of this knowledge to regional residents is particularly important. As was the case in the original Northwest Minnesota industry cluster study done in 1998, regional businesses in the cluster still face shortages of well-qualified workers.

The type of training most frequently provided to cluster employees is custom training, or training tailored to the needs of individual businesses. Institutional representatives explained that businesses seek custom training for their current employees and, in many cases, arrange for the training to be offered on-site at the business. One example of this is the offering of courses in manufacturing management to the employees of a large manufacturer of recreational transportation equipment. Another example involved contract training in the quality area of manufacturing. In general technical colleges provide a wide variety of custom training services. This is perhaps the most direct way in which regional educational institutions contribute to the support and maintenance of the knowledge cluster.

However, in addition to training for individual businesses, educational institutions provide several types of applied education related to manufacturing. One of the region's technical colleges offers custom training in connection with regional high schools to provide youth with the skills demanded in local industries. Another technical college representative reported that his institution was working with manufacturers to develop skill-based credits that could be applied to a manufacturing degree. It appears that regional institutions, while not necessarily involved in the creation of knowledge, do exhibit an entrepreneurial approach in providing access to knowledge opportunities. This may be an important factor in the success of the knowledge cluster.

The general curriculum of universities and technical colleges appears less responsive to business needs than the services of custom training centers. Nevertheless, institutional representatives described some adjustment of degree and certificate programs to accommodate regional businesses. For example, technical college representatives repeatedly emphasized that the adaptation of curriculum to meet business needs was central to the mission of technical institutions. One in particular, recently established a welding certificate that enabled local workers to obtain welding internships at major companies within the cluster. Similarly, the university representative who described his institution’s manufacturing management training reported that the training might eventually be converted into a university degree program, available to workers not yet employed in the cluster.

**Support for Knowledge Resources: Knowledge Creation**

Institutions don't always contribute directly to the development of new knowledge, which is ultimately what drives innovation. Representatives at higher educational institutions and economic development entities agreed that businesses in the region were the chief developers of new knowledge – driving innovation within the cluster – and that businesses are responding and
adapting more quickly to changes in the economy than were their organizations. However, institutions clearly support knowledge development among businesses in two ways.

First, the higher education community serves as a neutral party for businesses to “bounce ideas off.” Because businesses may not always be comfortable talking about or sharing their new ideas with competitors, the expertise among the academic community becomes an important outlet. For example, imagine a company utilizes a particular piece of engineering software and is seeking to adapt it to a new process. In consultation with a regional institution’s faculty members, the two parties not only find a solution to the problems associated with the new process, but also advance the company’s general understanding of how the software technically functions. Interestingly, it was suggested that the increasing involvement of higher education institutions in custom training may compromise this role – taking money from businesses may deter businesses from using educational institutions in this capacity because they may be seen as no longer neutral.

Perhaps the chief form of encouragement for new knowledge development comes through the support of small businesses and new businesses/entrepreneurs that may spin off the cluster with new ideas; this is one of the principal roles for regional development institutions. Again, it is important to recognize that the ideas come from the business community. However, ideas need support to make anything happen: financing, business planning, etc. Economic development professionals expressed concern that small businesses – typically, spin-offs are small – have a difficult time making it in the region and consequently needed more help than larger, more established businesses.

This underscores an important recognition among institutions in the region: understanding what type of support is best for what type of business. It was suggested that training, or direct help with knowledge resources, is more effective for established businesses. Younger businesses, though, often benefit simply from a supportive environment in which people with ideas are able to successfully realize them.

As emphasized above, institutions in Northwest Minnesota are less involved in the importation of specialized knowledge than they are in knowledge diffusion. However, this is not to suggest that institutions are never involved in knowledge development. The present study provides some evidence of institutional involvement in the importation of cluster-relevant knowledge.

Interview and focus group participants reported that educational institutions and economic development entities provide businesses with information about technologies and processes that help them remain competitive. This may include, for example, financial support for and access to automation technologies for those companies facing a shortage of quality workers. Automation technology also encourages the acquisition of new skills by cluster employees, allowing local companies to secure business that might otherwise be lost to competitors. Other respondents affirmed the importance of automation and suggested further that lean manufacturing processes were also essential to the success of cluster businesses.
Support for Knowledge Resources: Small Business Development

Several respondents mentioned the region’s Small Business Development Center as a resource for business supports. One university respondent affiliated with the center noted a growing interest in “the beginning of economic activity,” and the ultimate realization of entrepreneurial ideas through successful businesses.

The Small Business Development Center works to “create an environment where people who want to start economic activity can find the resources they need to do so,” offering classes and seminars in how to start and run businesses. Representatives of economic development agencies suggested that support for entrepreneurs is important. However, there is clearly a tension present. There is always competition for scarce resources and an ever-present concern that substantially more assistance is required for “start-ups” compared with existing businesses. There is a current of thought that indicates there simply aren’t the resources to support all entrepreneurs who want help, and that there may be higher returns, or more “bang for buck,” in supporting existing businesses.

At the same time, as the traditional agricultural sector continues to decline, people’s survival instincts turn to small business opportunities. The challenge for development professionals is the process of evaluation in allocating resources. Do the structural features of the regional economy enter into this evaluative process? Do those entrepreneurs with businesses plans connected to the “cluster” have an advantage in securing resources? Are they more likely to be counted as survivors? These are perhaps important questions that at present do not have clear answers.

Looking to the Future

There are many possibilities for increasing the level of support for industry in Northwest Minnesota. These grow out of the responses that inform this report and include extending educational opportunities beyond custom training by making general curriculum offerings of local educational institutions even more responsive to needs of local businesses. This would help to foster cluster-relevant skills in residents of the region—young adults and other workers—that may not yet be employed; it would contribute directly to their potential employment opportunities and may be an important step in creating the kind of workforce the cluster industries will require. To the greatest extent possible, training people to do jobs they can do in the region is likely to sustain the economic vitality in Northwest Minnesota. While job opportunities aren’t the only reason young people leave the region, it is an important one and by linking education to employment, the odds of slowing out-migration improve.

There is general agreement that expanding the currently available supports for small and start-up businesses should be pursued. The previous SLPP knowledge cluster report suggests that start-ups need to be encouraged, as in many ways start-ups are an indication of entrepreneurial spirit and often reflect innovation; relying on major businesses alone to sustain the region’s economy may lead to loss of vitality and dynamism. While many economic developers felt that they got more “bang for their buck” with the more established businesses, particularly in terms of job creation (they reported that bigger, more established businesses were able to create more jobs and were more likely to stick around in the area), there may be yet long-term gains associated
with supports for small businesses; the issues of entrepreneurial activity must be weighed carefully. It may be useful to examine more closely the process of evaluating how resources for new business initiatives are allocated.

In addition to business supports – in the form of business tools to help innovative businesses succeed – there is agreement that, as much as possible, institutions should provide direct assistance with innovation. That is, institutions could play a more direct role than they currently do in supporting the development of new specialized knowledge. For example, representatives of universities and technical colleges didn’t report that their institutions were doing a great deal of research that was applied in regional businesses. Many of the innovative ideas were coming directly from the business community, after which educational institutions become involved in secondary support roles. The region’s educational institutions, in particular, may be able to generate widespread and considerable economic benefits from redirecting resources to focus more on innovation, becoming more involved in applied research and the generation of knowledge resources, and going beyond “customized training.” Similarly, economic development agencies may be able to focus more on innovation – not simply job creation, financial assistance, and business tools. There is a great need to provide assistance in creating intellectual capital and an environment that is conducive to innovation.

All of this requires shifting the paradigm so to speak. It means that the institutional environment that supports the local and regional businesses must focus on emerging trends in knowledge development and creation. Knowledge development is always happening and the methods for fostering it are always changing; it is a highly dynamic process. This simply underscores how vital the industry-institutional relationship is if regional economies are going to stay competitive. It means that institutions need to be on the leading edge of how knowledge is transforming the business and industries they support. One economic developer mentioned that his organization was looking at how to help with benchmarking and knowledge sharing for industry improvement. He expressed his belief that this kind of approach is what will keep Minnesota ahead of the curve in knowledge management.

In conclusion, it is important to increase awareness among key players: educational institutions, development professionals, business leaders and policy makers about the importance of job enrichment and the role that knowledge plays in this regard. Almost all institutional representatives interviewed felt that there has long been an overemphasis on the number of jobs created by a policy intervention or service program, compared with the actual quality of the jobs created. If the industry cluster, particularly one that relies heavily on manufacturing, is to remain competitive, it must continue the shift to lower-volume, higher-value production. The development of more high-tech jobs and the corresponding skilled, knowledgeable workforce facilitate this shift. In this regard, the implication is that job quality and job enrichment, over and against job creation, are absolutely essential to the cluster’s long-term success.