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Wisconsin's Plastic Valley Association: A Cluster Based Development Strategy

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Abstract: Cluster-based development has become an important strategy for states and localities interested in promoting regional development. This strategy involves supporting a geographically close collection of similar or related firms. In this article, we examine some of the successes and problems faced in promoting a plastics cluster in Wisconsin. This case study demonstrates the importance of the role of public sector organizations in initiating and facilitating clusters but the need for the private sector to take ownership in the program. We conclude with some specific recommendations for professionals involved in cluster-based initiatives.

Introduction

Cluster development has become an increasingly important economic development tool for communities and regions to consider. Michael Porter (1990) is credited with identifying the importance of clusters in regional development. Barkley and Henry (2001) describe an industry cluster as a geographically close collection of similar and or related firms that together provide competitive advantages for members of the cluster and the economy. The geographic scope of clusters can vary a great deal due to differences in transaction costs and information. Davies (2003) also argues that industry clusters differ from one another based on size. He further notes that industry cluster development is not a "one size fits all" strategy; the desirability of that strategy depends on the potential advantages and disadvantages a cluster might provide a local economy.

Instead, cluster development needs a more contextual analysis that focuses on local capacity building and the role of institutional support for regional economic development Murray, (1999). While it was not an economic development tool, Extension faculty in the late 1980's at Ohio State University developed educational "clusters" to identify long-term program goals. Faculty members, with the guidance of County Commissioners, developed a vision for three counties as a region much like an industry cluster, Cropper, and

Merkowitz (1998).

This article focuses on a cluster of plastics firms in Wisconsin, called "Wisconsin's Plastic Valley" (WPV), and examines some of the constraints and opportunities for cluster development in a non-metropolitan region. We focus on a case study of a cluster because it will be possible to examine closely some of the social dynamics involved in cluster development. WPV is an interesting case study for a couple of reasons.

First, the cluster was located primarily in a rural region. Two key obstacles in promoting cluster-based development in rural areas are density and distance. Figure 1 shows a spatial relationship of member firms in the WPV cluster utilizing Geographic Information Systems (GIS). Most rural areas have a low density of firms in the same industry or related industries. As a result, it is more difficult to develop a critical mass of firms with a common set of interests or needs. In addition, because employers may be in different political jurisdictions, it may be more difficult to obtain support from local officials. Similarly, the thin labor markets that characterize rural areas make it more costly to provide the types of educational and training programs needed by clusters.

Figure 1.
Wisconsin's Plastic Valley Clusters



A second unique aspect of WPV was the focus on workforce development. This strategy required a great deal of collaboration with educational institutions at various levels. It also addressed the competition for qualified workers in the region.

Finally, the focus on the plastics industry is an important one because the industry has usually been characterized as a low-wage sector. Most of the literature on industrial clusters has examined high tech or advanced manufacturing clusters. We now look at Wisconsin's Plastic Valley for an analysis of its successes and challenges.

History of Wisconsin's Plastic Valley

According to the Plastics Industry Trade Association (2008), plastic industries have accounted for a substantial number of jobs in Wisconsin's economy. It is estimated that Wisconsin ranks 12th in the number of business establishments (592 business establishments) and in shipments of miscellaneous plastic products (\$6.5 billion). In terms of total employment in plastics products, resin, and machinery, Wisconsin ranks 10th (43,000 jobs), with an annual payroll of \$1.1 billion. Wisconsin ranks 7th nationally in shipments of laminated plastic, plate, and sheet.

The plastics industry is one of the fastest growing industries in Wisconsin, with more than a 30% increase since 1991. During the severe labor shortage in the 1990s in the region, employers faced a great deal of difficulty in finding qualified workers. Many applicants lacked the education and training required for job openings. The plastics industry was often viewed as a low-wage, low-skilled industry that offered few opportunities for regional economic development. Participants wished to change this image and show how the industry had been modernized with new technology and offered opportunities for workers. The industry believed that this would be a good strategy to recruit workers from low paying, low-tech positions in other industries.

Forward Wisconsin, a state-supported organization that recruits industry to Wisconsin, targeted the plastic industry. They contacted Jim Goldsmith, a Community Resource Development Educator who was employed in private industry prior to coming to the University of Wisconsin UW-Extension. Goldsmith utilized his contacts to organize a meeting of those interested in working together to create a plastic cluster.

The initial meeting of the Wisconsin's Plastic Valley occurred in March 1998. Among those in attendance were seven plastics companies, The Wisconsin Department of Commerce, Alliant Energy, Oakdale and Dairyland Electric Cooperatives, American Plastics Council, Madison Area Technical College, Western Wisconsin Technical College, Wisconsin Manufacturing Extension Partnership, Northwest Outreach Manufacturing Corporation, University of Wisconsin-Extension, Wisconsin Department of Workforce Development, and Economic Development Organizations. At the meeting, education and training immediately became the central focus of the group. This education focus was determined via a strategic plan that was formulated by the members.

Teaching the Basics: MATC Training Program in Plastics

With the clusters input, the Madison Area Technical College—Portage Campus began offering a 20-hour training program for people working in plastics, with training focusing on building and enhancing soft skills. Soft skills training involves teaching the rudimentary desire for acquiring skills in basics. Some examples of soft skills might be conflict management, personality styles, dealing with difficult people, and time management. Since 2001, more than 300 people have gone through this training program, and many of the program participants have held a wide variety of positions within the plastics industry, such as in production lines, warehouses, research and design departments, and other areas within the plastic field.

Large as well as small businesses in the area participated in the program. The curriculum was available to any organization that had the capacity to effectively run the program. Curriculum and teaching materials developed by Polymer Land, a subsidiary of General Electrics, was offered without charge to the participants. A requirement of the program by the participants was to attend a 4-day training session, where they received instruction on teaching their business staff on the program.

2+2+2 in Plastics

Another key outcome of the Wisconsin's Plastics Valley has been the development of a program called "2+2+2," which is an educational career path in plastics. The program consists of three levels integrated through the educational system. Each component builds on the previous one, allowing the participant to move from a High School Apprenticeship to a Bachelor's Degree in or related to Plastics.

The foundation and first "2" years of the program is the Plastics Youth Apprenticeship Program. Designed for junior and senior high school students, it combines education, technical training, and paid work experience. The education and training components require a commitment of 2 hours a day 5 days per week. Four out of the 10 hours per week are spent at the plant where the student is doing his or her apprenticeship. Students are required to work in the areas of quality, machine operations, finishing, materials handling, fixture repair, and set up.

The final component of the apprenticeship is work experience. Students have to complete at least 900 hours of paid training, including the training hours they receive during the 2 years of this program. Upon completion of the apprenticeship, participants receive up to 12 credits of advanced standing from MATC, the next step in the plastics educational career ladder.

In the second "2" years of the program, students apply their high school credit earned through the Youth Apprenticeship toward a technical college associate degree. This degree prepares students for more skilled positions within the plastics industry. In the final "2" years, students can broaden their background by attending a participating Wisconsin University campus (UW-Stout or UW-Platteville) to pursue a Bachelor's Degree. One of their options is a Bachelor's Degree in Engineering that focuses on technology related to the plastics industry. The state of Wisconsin provided a grant to assist this program.

Flambeau Inc., and Teel Plastics, both with production plants in Baraboo, Wisconsin, are the only two companies of the Wisconsin's Plastic Valley that have participated in the 2+2+2 program. In the case of Flambeau, the company offers tuition reimbursement at MATC to those who are interested in pursuing a 2-year associate degree. Thus, upon successful completion of the Youth Apprenticeship Program and graduation from high school, participants are eligible to attend the second "2" years of the program. Those who agree to work part-time during the 2-year period of studies and commit to a year of full employment after graduation are eligible for the program. Between 15 and 20 employees have gone through this program. The last "2" years continue along the same lines. Flambeau Inc. offers tuition reimbursement towards a Bachelor's Degree in exchange of a 2-year commitment to full-time employment in the firm after graduation.

Intangible Outcomes: Learning How to Collaborate with Competitors

Many of the individuals who have been actively involved with Wisconsin's Plastic Valley Cluster stress that an important outcome of this initiative, although difficult to measure, is the unprecedented collaboration among plastics employers in the region. When plastic companies were invited to consider forming a cluster in their first meeting in 1998, many public organizations thought that plastic companies working together would not materialize. It was suggested that the smaller family-owned companies were too competitive. Actually, plastic companies, while cautious at first, eventually invited their competitors to tour their facilities following cluster meetings. Although companies often avoided tours of product research areas, many participants took advantage of these tours to learn more about the other businesses in their region.

Although collaboration improved throughout the project, there continued to be a lack of trust among many of the smaller firms in the cluster. The central concern has been that the training programs primarily benefit the large firms because they could offer higher wages and more benefits to workers. This pattern often exists in regional labor markets. The 2+2+2 program, however, encourages workers to stay with their employers to benefit from the program. So, while many small firms may eventually lose their best workers, they also are able to hold on to them longer than might be the case without the collaborative program.

The Future

When Goldsmith first brought together plastic industry leaders and support agencies to build an association in 1998, the term "cluster" was not a commonly used term. Clusters have become an acceptable term for creating associations that reach out to support industries and industry providers to create a collaboration of strength, and support for one another. In addition, it improves opportunities for seeking assistance from federal, state, and local organizations. As Wisconsin's Plastic Valley progressed, it became recognized as a cluster.

The Wisconsin Department of Commerce, in a guideline provided for consideration for funding, maintains that the industry must be the force behind the cluster. The Wisconsin's Plastic Valley cluster struggled after losing its second industry champion to retirement. Goldsmith was then approached by the Wisconsin Department of Commerce to "revitalize" the cluster. At the revitalization meeting on April 4, 2006, 43 members attended. Once again, as in 1998, Goldsmith assembled a number of plastic companies and numerous state organizations, education institutions, and several other non-profit support agencies to discuss the revitalization of Wisconsin's Plastic Valley. The attending members expressed interest, and a third industry chairperson was identified at the outcome of the meeting.

At that meeting, attendees discussed the Strategic Plan created at the original 1998 meeting. New goals were established, and it was decided to rename Wisconsin's Plastic Valley "Wisconsin's Plastic Cluster Partnership" (WPCP) and to focus in a different direction. However, all three CEO "champions" identified education as their number one priority for the cluster. Although the Plastic Valley is restructuring, Goldsmith remains optimistic about the future of the organization.

Recommendations and Conclusion

Clusters can be very difficult to establish and even more difficult to maintain. Although many studies note that they must be industry driven, they often are not because industry leaders lack free time and available support staff (Green & Galetto, 2005). Also, even with a highly motivated, respected industry champion, there can be difficulty gaining support from fellow industry leaders. A few industry leaders may not respect a competitor and may be suspicious of his or her intentions. That suspicion can sometimes be for good reason as the "champion" could actually use the cluster to benefit his or her own company.

Wisconsin's Plastic Valley experiences strong support from non-profit agencies. At times industry leaders did not see agencies as legitimate partners nor show them the respect they deserved. The non-profit organizations actually propelled the clusters day-to-day operations, because the industry had neither time nor desire to do so. The industry often failed to see the daily operations side of the cluster as something worth pursuing. Industries often do not understand or appreciate the opportunities in working together with "outsiders" to form a strong cluster association. Also, at times industries do not realize the power and influence of their own clusters when working together or that they could use this power base to obtain tax exemptions, financial support, educational programming, and even marketing tools for the cluster.

The cluster often struggles eventually without the hiring of a professional who will have the daily responsibility of managing the cluster, which includes media contacts; pursuing established industry goals; grant writing; marketing and recruiting efforts; general office duties; contacting of local, state, and federal government agencies; increasing memberships; and providing data and research to industry members, among other tasks. That individual must represent the cluster in a thoughtful, professional, and intelligent manner. The manager of the cluster would best be a professional whom the industry empowers to make decisions for the cluster and not be just clerical staff.

In addition, the private sector will not take the cluster seriously unless the champion of the industry is seen as someone who has a passion for the industry as a whole and not just for personal gains. Wisconsin's Plastic Valley hired support staff but with limited grant funds. That effort proved successful, but was limited to the duration of the grant funds. Then there was no support to follow through in later efforts, and the cluster languished.

Another recommendation is that dues be assessed. Although dues set too high will be a deterrent for some firms, insufficient dues will deflate the importance of the cluster. In the case of the Wisconsin's Plastic Valley, dues over \$500 were seen as excessive, and this is surprising because many industries pay much more for other professional affiliations that provide less benefits.

Grants from state and federal agencies should be pursued quickly and often, because they are the most likely source of funding for the cluster. Without financial support in the area of at least \$250,000 per annum, the cluster has little opportunity to achieve their established goals.

A final recommendation is that the original stage of formation is best accomplished with the aid of those non-profit agencies that are willing to support the industry. The formal framework building of the cluster can be assisted by non-profits in the early stages. This then can be followed by the identification of cluster goals by the industries themselves. Although it is essential for employers to ultimately take responsibility for the cluster, government agencies, educational institutions, and non-profits will most likely play a key role in the formation of the cluster. All of this is best pursued as a regional effort in order to benefit the industry as a whole in order to address differences in established goals within and throughout the region.

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