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ABSTRACT

This paper reports on the development of the Community Computer Center (CCC) at Hibbing Community College (HCC) in Minnesota. HCC is located in the largest U.S. iron mining area in the United States. Closures of steel-producing plants are affecting the Hibbing area. Outmigration, particularly of younger workers and their families, has been substantial. This report argues that economic diversification in the area is imperative if Hibbing is to avoid continued "brain drain"--the loss of skilled workers. The U.S. Department of Education granted HCC an award in 1996 to upgrade its technology faculty and infrastructure. HCC took the project further and aligned with a coalition of community interest groups to develop a program that would match Hibbing's need for upgrading skills in the local workforce. Since the opening of the CCC in 1999, a total of 32 local firms and organizations have taken advantage of HCC's computer facilities to offer information technology (IT) skills training opportunities. Key elements of the CCC initiative include: (1) customized IT training for local workers; (2) continuing education that engages local residents from diverse backgrounds; (3) reaching across the digital divide; and (4) integrating closely with the region's long-term economic development strategy toward technology-based development. (NB)

Hibbing Community College's Community Computer Center

Hibbing, Minnesota is a community whose economic base of iron ore mining has been a fundamental part of its identity since its beginning. So, understandably, the task of diversifying that base takes time and substantial local initiative.

Hibbing Community College (HCC) has taken a proactive role in that process through the development of its Community Computer Center (CCC). Through the CCC, HCC offers convenient, diverse, and low-cost opportunities for local residents and workers to upgrade computer and IT skills through customized training and continuing education programs. And through a partnership with a local social service organization, HCC has extended these opportunities to individuals transitioning from welfare to work. The CCC initiative is an integral part of a long-term community and regional economic development strategy focusing on technology-based development.

Home on the Iron Range

Hibbing is a city of almost 18,000 residents, located 90 miles north of Duluth at the foot of the Mesabi Iron Range, which forms the heart of iron mining country in the "Arrowhead" of Northeastern Minnesota. The city is named for Frank Hibbing, a German immigrant and iron ore prospector who founded the settlement in 1893. A little over two decades later, it was discovered that the iron ore deposits actually extended underneath the city, which by that point had grown to 20,000 residents. So they simply moved the city. Over the course of the next five decades, the town's structures were moved, one by one, to a new location approximately two miles south of the original location.

Today Hibbing and its surrounding communities on the Iron Range are the home to nearly three-fourths of U.S. iron mining activity. What is mined is not actually natural iron ore, but rather taconite, an extremely hard rock composed of about 25 percent iron. As high-grade iron ore deposits began to disappear soon after World War II, technology developed at the University of Minnesota allowed mining companies to utilize the taconite deposits, which were of little commercial value while iron ore was abundant. The taconite rock is crushed into pellets, baked in furnaces, and subsequently transported by ship or rail to steel mills on the lower Great Lakes.

While the available supply of taconite is not considered a near-term problem, the mining industry has nonetheless experienced tremendous cycles of "boom and bust" in conjunction with the U.S. steel industry. Major dislocations occurred in the 1970s and 1980s, which were related to downturns in the national economy, as well as foreign competition in the steel industry. Through substantial modernization, capital investments, and favorable macroeconomic conditions, the mining industry expanded again in the early-mid 1990s, until the relative strength of the dollar began to weaken the competitive position of American steel producers again in the late 1990s. The most recent casualty has been Cleveland-based LTV Steel, which operated a major mining facility employing approximately 1,400 workers in nearby Hoyt Lakes. Its closure in January 2001 sent ripple effects throughout the region, with local supplier firms adversely affected, and some even going out of business.

Economic Diversification as Imperative

Recent turbulence and adversity in the mining industry have renewed concerns about diversifying the Iron Range economy, in order for its communities to survive and prosper. Past dislocations resulted in substantial out migration, particularly of younger workers and their families. As a result, communities like Hibbing face the dual challenges of diversification and "brain drain," which are closely related.

By offering a wider range of opportunities to the emerging workforce, Hibbing positions itself as a more attractive place to live and work.

It is often said that the Northeastern Minnesota economy runs on four T's: *taconite, timber, tourism*, and *transportation*. Previous attempts to diversify into manufacturing or value-added natural resources have tended to fall victim to the region's remote location and harsh winters, which make transportation of finished goods problematic. However, efforts are underway to add a fifth T to the list: *technology*.

Technology-based industries have the advantage of being less driven by physical location than by *virtual connection*. To succeed, they require a superior telecommunications infrastructure, and above all, a highly skilled workforce. They are also "neat" industries, meaning that they impose less detrimental effects on the local environment, important not only for tourism but for quality of life more generally. For this reason the Iron Range Resource and Rehabilitation Board (IRRRB), a state-chartered regional development authority endowed by taconite taxes, began the "Do I.T." program in 1998 to promote technology development in Northeastern Minnesota.

At the same time, Hibbing's economic development, government, business, and education leaders were considering ways to prepare their community for technology-based development. Improving the technology skills of the local workforce was identified as an area of critical concern. A 1997 study of Hibbing employers by the University of Minnesota-Duluth indicated that over one-third were dissatisfied with the technical skills of their workers. Because of its commitment to improving the skills of the current and future workforce, Hibbing Community College (HCC) decided to take an active role in working to close to the skills gap. Led by its customizing training director, HCC brought together a diverse group of local stakeholders to design and implement the Community Computer Center initiative, a "benchmark practice" for community college involvement in the local economy.

Project Background

Hibbing Community College is a comprehensive technical and community college that was originally founded in 1916, making it one of the oldest two-year colleges in Minnesota and the nation. Since then, it has gone through a number of transformations that have served to integrate its roles as both a community and a technical college. Like many community colleges, the priorities of HCC have been shaped by the demands of the local economy. When concerns were raised over the aging of the mining workforce, HCC developed an innovative two-year curriculum to train the next generation of highly skilled taconite miners. Today HCC serves approximately 3,000 students in credit courses and roughly 24,000 through its customized training activities.

This same responsiveness to local economic conditions was the impetus behind the Community Computer Center initiative. Having received an award in 1996 from the U.S. Department of Education to upgrade its technology faculty and infrastructure, HCC decided to expand its efforts even further. It drew together a diverse coalition of community interests, representing the local business, government, education, and social service sectors. Together they developed a program that would match Hibbing's need for upgrading IT skills in the local workforce to available and potential resources. Local business partners pledged both financial and in-kind support to the project, which was initiated with the help of a $220,000 grant from the Minnesota State College and University (MnSCU) system, with which HCC is affiliated. Approximately half of the MnSCU grant was used to purchase equipment for a 24-station computer laboratory on HCC's South Campus, where the CCC is located. The remainder of the grant was used to hire a computer instructor and support technician. Revenues from course enrollments have allowed these staff positions to be self-sustaining since the end of the MnSCU grant in spring 2001.

The key elements of the CCC initiative include:

- Customized IT training for workers in local businesses to improve productivity and competitiveness
- Continuing education that engages local residents from diverse backgrounds to learn about IT and computer skills
- Reaching across the "digital divide" by partnering with a local social service provider to extend low-income and public assistance populations access to much-needed IT skills
- Integrating closely with the community and region's long-term economic development strategy toward technology-based development

Customized Training

Customized training programs are a common way for community colleges to contribute to the competitiveness of existing local businesses. By assisting local businesses with the adoption and diffusion of new production and information technologies, community colleges help make local workers more productive, and as a consequence, make their businesses more efficient and successful. For this reason, customized training is an important application of HCC's Community Computer Center.

The need for skill training in information technology among the incumbent workforce is continually growing. Even in "old economy" sectors like mining and manufacturing, shifts toward computerized production technology call for workers who not only have specific IT capabilities, but also a general familiarity with the computer interface. And while formal educational requirements for most jobs have grown as well, rapid changes in computer applications demand concurrent "upgrades" of IT skills.

Since the opening of the computer center in early 1999, 32 local firms and organizations have taken advantage of HCC's computer facilities to offer IT skills training opportunities. Participants include the city's largest employers (Hibbing Taconite, K-Byte Manufacturing), a number of local small businesses, local health care providers, and even several government and nonprofit agencies. This diversity is indicative of the crosscutting need for IT skills across industry sectors. The courses are paid for by the companies, and offered both during and after work hours, depending on the company's needs.

The training needs of some firms are more customized than others. Some participants seek assistance with basic applications such as Microsoft Word, Excel, or PowerPoint, while others have sought assistance in utilizing programs more specific to their firms' needs, such as scheduling or desktop publishing software.

In general, participating employers report that worker productivity with respect to IT applications has improved noticeably. According to one participating employer, the diffusion of IT skills throughout the workplace has led to increased self-sufficiency in the use of IT applications, reducing bottlenecks and inefficiencies caused by the need to seek out co-workers to solve computer-related problems. While individual productivity gains may be relatively small, they sum up to quite substantial levels across entire firms.

One unique aspect of the program is that some local firms have encouraged the families of their workers to take part in computer training at the same time. The result is that IT skills are being developed not just among the incumbent, but also the rising workforce.

An additional economic development benefit of reaching out to local firms is their increased embeddedness in Hibbing's community infrastructure. By taking part in the Community Computer Center's offerings, local firms and organizations become active stakeholders in the community's long-term goal of technology-based development. Such social benefits to company participation in IT training reflect the justification behind public investment in the initiative.

Continuing Education

"Lifelong learning" has become a common mantra in the areas of education and workforce development. The fundamental idea is that individuals should not stop learning and developing when formal education and training ends. This applies to both people in the workforce (i.e. incumbent workers) and outside of it (i.e. unemployed, homemakers, retired/senior citizens). Technological change has made the need for this kind of reskilling even greater.

Hibbing Community College, like most community colleges, offers a wide variety of non-degree continuing education courses to members of the Hibbing community through its Center for Lifelong Learning. These courses include everything from French language to art to welding. Additionally, a series of courses in computer and IT applications are taught every semester at the Community Computer Center.

Courses are organized as short "modules," typically lasting 20 hours over three consecutive days. They are offered in the evenings and weekends, to improve their accessibility to the working population. Courses ranges from those oriented toward beginners simply learning the basics, to courses teaching specific software and hardware applications for intermediate and advanced users.

Program administrators report that the course offerings have been extremely popular, with additional sections being added to handle the demand. Satisfaction has also been high, as evidenced by the frequency with which individuals have returned to take additional courses. HCC's computer course instructor attributes the success and satisfaction of the program to the "real desire to learn" on the part of program participants.

Participation in continuing education offerings at the CCC is highly diverse, spanning generations and socioeconomic levels. A recent survey of program participants indicated that greater than one-third of respondents were 60 years of age or older. For many older residents of Hibbing, the ability to use computers and the Internet increases their connectivity to family and relatives located elsewhere.

The CCC is also open to the public for general use during times when classes are not in session, increasing access for local residents. Many of the respondents indicated that they did not own computers or have a connection to the Internet at home, and were interested in using the lab during "open lab" hours. For these persons the ability to tap into this community resource widens their options for applying skills learned in courses.

Overall, the continuing education application of the Community Computer Center serves to enhance the quality of life of Hibbing residents, by offering convenient and low-cost opportunities to obtain and apply computer skills increasingly important both in the workplace and in everyday life. And like the customized training program, the continuing education program helps to build community support and understanding of the importance of technology to the region's future. Both represent important contributions on the part of Hibbing Community College to the city's future economic vitality.

Bridging the Digital Divide

Welfare reform has caused social service providers to rethink how they serve their target populations. In particular, the imperative of time limits has compelled them to consider innovative ways of transitioning individuals and families from public assistance toward gainful employment and self-sufficiency. The challenge is made even greater by "work first" policies that restrict education and training options severely —a major disadvantage for a population typically limited in the skills necessary to find good-paying jobs.

The designers of the Community Computer Center program at Hibbing Community College recognized this need, and as a result partnered with the Family Investment Center (FIC), a local social service organization affiliated with Hibbing's public housing authority. Through its partnership with FIC, Hibbing Community College has been able to extend computer and IT training opportunities to public housing residents and other low-income individuals in the community.

The biggest problem with most programs like the CCC, according to FIC's director, is that low-income residents normally don't hear about them. Even newspaper advertisements, a common method for marketing and communication, are problematic for low-income and public assistance populations, because "not everyone gets the newspaper." This poses real challenges for reaching the people that need the skills the most.

FIC leveraged funds from the HUD Tenant Opportunity Program (TOP) to cover the costs of participation in HCC continuing education computer modules for its public housing residents. And through its informal networks with other social service providers in the Hibbing area—many of whom serve the same clients—FIC has helped to increase awareness about opportunities at HCC. Since the program's beginning, FIC has placed students in a dozen different courses, with most participating in multiple courses.

In addition to its role as an active partner in shaping and marketing HCC's programs, FIC has taken steps to bring computer training even closer to its residents. Through a Community Technology Awareness Program (CTAP) grant from the IRRRB, FIC opened a small satellite laboratory at its new offices, which are located adjacent to a local public housing site. This lab grants residents even better computer access for skill building and job search activities. In addition, an increasing number of FIC clients are taking advantage of low-cost computer leasing opportunities through The Bridge, a local Internet service provider and project partner.

The benefits to FIC participants in computer training are both tangible and intangible. In real terms, their clients have acquired more marketable skills in order for them to find jobs that move them toward self-sufficiency. While some are using their skills to find good-paying clerical jobs that require substantial computer and IT ability, others have pursued careers in human services or teaching. The common denominator, according to FIC's director, is that participating in HCC's computer programs helped them to break down a barrier to self-sufficiency that is common among the residents they serve—low self-esteem.

The goal of improving the confidence and self-esteem of transitioning public assistance recipients is reflected in the program's design. Unlike job training and social service programs specifically designed for low-income populations, programs offered through the Community Computer Center are open to the entire community. As a result, FIC clients can take

part in valuable training opportunities without the stigma or burden of proving financial need they commonly endure on their path to self-sufficiency.

One additional positive outcome of FIC's involvement in the HCC project has been an increasing openness and flexibility toward training options for transitioning public assistance recipients. Whereas with emphasis had been placed initially on "work first" policies, which matched unskilled individuals in unskilled, low-paying jobs, often with little success, the success demonstrated by participants in FIC's self-sufficiency programs has helped change this mindset.

Hibbing's Long-Term Technology Development Strategy

Like many communities, Hibbing has faced the classic "chicken and egg" dilemma in implementing a long-term strategy of technology-based development. Investments need to be made in order to develop technology infrastructure and improve workforce skills for jobs that, in many cases, do not yet exist. At the same time, high technology businesses interested in creating those jobs are reticent to do so if such long-term investments have not been made within the community. How does a community like Hibbing establish a long-term vision, while giving itself measurable, short-term goals to remain focused and motivated?

According to the city's community economic development coordinator, the entire community is engaged in a long-term process of creating a vision for technology development. The success of initiatives like the Community Computer Center contribute toward that vision, he says, by offering measurable, demonstrable results that lay the foundation for future directions. In this sense, the "big picture" is gradually reduced to a smaller, strategic course of action.

Part of that process is recognizing and taking advantage of the assets within the community. Hibbing is one of the most "wired" communities of its size, with a substantial telecommunications infrastructure capable of supporting high-speed broadband Internet service. The Bridge/Range TV Cable, a local Internet/cable provider, was in 1998 among the first communities in Minnesota to offer cable modem access. According to The Bridge's marketing director, this allows the residents, businesses, and educational institutions of Hibbing a high degree of connectivity, while at the same time posing challenges and opportunities for adapting the new technology. The Bridge has been an active partner in HCC's efforts with the CCC, making substantial in-kind contributions to the computing facilities. The Bridge has also been a partner in local efforts to attract high technology companies to Hibbing.

An initial focus of business recruitment efforts on the Iron Range has been information and data processing operations ("back office") centers for major corporations. The region's strong telecommunications infrastructure and well-educated workforce have made it an attractive location for such facilities. Northwest Airlines employees 600 workers at its reservations center in Chisholm, a few short miles away from Hibbing, and Delta Dental recently committed to opening similar data processing facilities on the Iron Range. Jobs at these facilities range from entry-level to managers, but all require a command of computer and IT skills. Consequently, Northwest Airlines contracts with HCC to provide customized training to its workers on the site.

However, Hibbing's long-term vision for technology-based economic development also places a clear emphasis on growing new businesses. Plans are in the works for the "Range Accelerator"—a technology center to be located on HCC's Central Campus. The facility will accommodate both startups and existing businesses, particularly those active in product research and development stages. This development relies more heavily on the presence of highly skilled IT professionals, either working presently in local businesses, or graduating from educational institutions throughout Northeastern Minnesota.

For this reason, HCC is also taking steps to strengthen IT opportunities among its traditional student base. It presently offers three IT-related degree programs—Multimedia Specialist, Computer Information Specialist, and Internet Systems Administrator Programs. In addition, HCC is in the process of incorporating stronger IT training requirements into the core curriculum for its various degree programs, reflecting the importance of IT skills to a wide range of occupational paths. And through its Student Technology Assistant Program, HCC offers students opportunities to gain valuable work experience by assisting the college's computer support staff.

HCC considers itself an anchor of Hibbing's aspirations for technology development. HCC's leadership is absolutely critical, says the college's

president, stating "If HCC doesn't bring technology to Hibbing, who will?" Its leadership in the development of the Community Computer Center reflects this belief. But the partnerships HCC has fostered with local economic development stakeholders indicates an awareness that accomplishing the goal of diversifying Hibbing's economic base through technology development will be a long-term, community-wide effort.

Strengths

Excellent community partnership, with a common focus and vision

HCC has successfully leveraged the support—financial, in-kind, and political—of a diverse set of interests in getting the Community Computer Center project from the concept stage to reality. Each of these partners holds a different stake in Hibbing's future, but have all made a credible commitment to an initiative geared at securing the community's long-term economic viability. According to the Director of Instructional Technology at HCC, the CCC initiative has led directly to an increased linkage and coordination of the college's efforts with economic development goals in Hibbing and throughout the Iron Range. And as the project partners have reconvened to monitor the progress and success of the CCC, they have been able to refocus on future development challenges and opportunities facing Hibbing.

Model breaks down traditional student-oriented, middle-income approach to human capital development

Community colleges, and educational institutions in general, are often criticized for their inability to think "outside the box" about human capital development, thinking only terms of degree programs and traditional student roles. Through its CCC, Hibbing Community College has broken through that model, reaching a wide spectrum of businesses and individuals eager to upgrade their IT skills. And through its partnership with the Family Investment Center, HCC has effectively reached a low-income and public assistance population too often bypassed by such initiatives. In fact, the name of the facility was changed during the course of its implementation, from the Community Information Technology Center to its present name, in order to make it more accessible to community residents who may be intimidated by IT, and thus less willing to take part.

Model is highly replicable within community and beyond

Most importantly as a benchmark practice, the HCC's model for the Community Computer Center is highly replicable in other communities looking to offer residents increased access to computers and IT skill training. The key elements of the model are a broad base of support by local stakeholders, allowing the program to leverage and integrate with existing community resources, and to better reflect the needs of its customer base; also important is the leadership of a highly visible local resource like HCC, which is widely respected and willing to accept that leadership role.

Weaknesses

Model is replicable, but success is not automatic

Local partners in the HCC project point out that one of the keys to the success of programs offered through the Community Computer Center is the quality of instructors hired through the MnSCU grant. Local factors, such as the degree and nature of community support, are highly instrumental to making initiatives like the CCC successful. As a consequence, adopting HCC's model does not by itself guarantee success.

Opportunities

Entrepreneurial potential for IT products and services tailored to the needs of local mining, manufacturing, health care, and government base

In targeting opportunities to grow new technology-based businesses in the region, local development efforts such as the "Range Accelerator" could market itself to IT professionals, scientists, and engineers with experience in key local businesses. These professionals frequently offer extensive, specialized knowledge about the technology needs of those businesses, and the industry in general. Unlocking their entrepreneurial potential through marketing and small business assistance could lead to a number of startup IT firms serving local needs better, and possibly branching into national and global markets.

Increase marketing to highly skilled and educated expatriate Iron Range residents

A substantial number of highly skilled professionals with ties to Iron Range communities like Hibbing live throughout Minnesota and the United States.

They represent a vast, untapped source of human capital. By marketing to those interested in returning to a smaller community, and taking advantage of the natural amenities and quality of life, Hibbing could turn its historical "brain drain" into a "brain gain."

Threats

Further downturns in mining or manufacturing base could undermine efforts and local resources

Although insecurity over the traditional economic base has been the primary impetus for efforts to promote technology, further downturns could jeopardize those efforts. Resources, particularly from local sources, could be threatened, and priorities would likely shift to more short-term adjustment needs. Particularly for low-income and public assistance populations at the margin of the labor force, such downturns could hamper efforts toward self-sufficiency.

Impatience with slow progress

Successful economic development efforts do not typically happen overnight. At the same time, decision makers and community leaders are normally held accountable to produce measurable results in much shorter order. If the need for a "magic bullet" overtakes the long-term vision of technology-based development, then progress could be jeopardized. While no such problem appears to exist in Hibbing presently, it is always a threat.

Conclusion

Hibbing, Minnesota will always be associated with taconite mining. But whether or not the community is able to diversify its economy, and survive the cyclical turbulence inherent in the mining industry, is the economic development challenge it faces. Technology holds the key to a wide variety of development opportunities, allowing it to overcome its remote location through increased connectivity. Hibbing's challenge is about more than incubators and broadband fiber optics; it is also about "wiring" its residents to adopt new information technologies at home and in the workplace.

Hibbing Community College's Community Computer Center initiative is a tangible step toward that vision. By offering convenient, diverse, and low-cost opportunities for local residents and workers to upgrade their IT skills, HCC contributes directly to the productivity of existing jobs, while promoting the development of new, technology-oriented jobs. And HCC has thought creatively about program design, to remove barriers and improve accessibility to IT skill training among deserving populations, such as low-income and public assistance recipients, frequently overlooked by similar initiatives. Through its CCC initiative, Hibbing Community College has established itself as a community resource committed to Hibbing's economic future, and a benchmark practice for community colleges.

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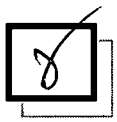

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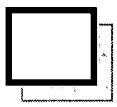

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