



HEART OF WISCONSIN TELECOMMUNICATIONS STUDY

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Study Background and Introduction



Study Indicates “Robust” Telecommunications and Broadband Assets Creating Business Opportunities in South Wood County Region

Wisconsin Rapids, August 10, 2006: With support from the Ford Foundation provided in their grant to the Community Progress Initiative, NorthStar Economics of Madison, WI, completed a telecommunications study for the Heart of Wisconsin Area (South Wood County/Town of Rome). The study is a result of the New e-Conomies Industry Cluster which mapped the technology assets in the area as part of their initial cluster work and identified a potential competitive advantage for business development opportunities.

The summary findings of the study report, indicate the Heart of Wisconsin area, indeed, offers an extensive “robust” infrastructure for New Economy types of business development, which depend on telecommunications and broadband data transmittal. Redundant telecommunications and broadband (T & B) infrastructure links installed to serve major users, such as a locally-owned international software company, provide benefit to the entire community.

The next step is to leverage the multitude of telecommunications infrastructure for new business growth and development – something the NorthStar Economics Study helped to identify. Business types, which require this type of infrastructure, identified as appropriate to target, include data warehousing, distribution logistics, graphic intensive records industries (such as medical imaging), software development, communal call centers, video gaming design, remote diagnostic products and services, and security monitoring services.

Also highlighted in the report is the important assets of a computer savvy workforce and training entities in the area, such as UW-Stevens Point and MidState Technical College, which adds additional benefits for attracting the New Economy type of businesses.

“This independent study by a nationally recognized firm adds credibility to our efforts for marketing the technology assets that exist within our community. This will also help us as we develop further strategies for identifying and attracting business opportunities,” explained JR Siewert, New e-conomies Cluster Co-Chair. The New e-Conomies Cluster also recently launched the Ideas Incubator, a Web-based tool matching ideas with entrepreneurs at www.ideasincubator.org.

“One of the driving forces behind the New (knowledge-based) Economy is the ability to exchange ideas, information, and goods and services over telecommunication systems such as the Internet, telephone, cable, broadband, wireless and satellite resources. Therefore, having an advanced telecommunications infrastructure is crucial to be competitive in this area of growth in today’s knowledge-based economy,” commented Dennis Winters, Vice President of Research with NorthStar Economics, who will head up the project.

NorthStar Economics, based in the MG & E Innovation Center in University Research Park in Madison, is a private economic consulting and research firm dedicated to the development and implementation of New Economy economic development strategies. They are recognized as a leader in the economic development field, with a technology cluster and New Economy focus. NorthStar was founded by Dr. David J. Ward in May of 2000 and has served a wide variety of clients in both the public and private sectors. NorthStar Economics is a leading firm in developing strategies for success in the New Economy, as demonstrated by the Regional Alliance Stewardship award for the Northeast Wisconsin Economic Opportunity Study. NorthStar's principles have over 50 years in economic and financial consulting to the public and private sectors.

Doug Wenzlaff, President of Solarus comments, "We feel that a study such as this is a key to leveraging and utilizing our highly developed telecommunication infrastructure. Our competitive advantage, applied appropriately, can substantially advance our economic development efforts for the region."

The Heart of Wisconsin Business & Economic Alliance and the Community Foundation of South Wood County received announcement of the Ford Foundation's support of the Community Progress Initiative at the beginning of 2006. For more than fifty years, the Ford Foundation has been a resource for innovative people and institutions across the United States and around the world. Ford supports innovative efforts by individuals and organizations in every state to find solutions to the most challenging problems facing communities today.

The Community Progress Initiative is a community building effort designed to address the economic impact of the changing global economy in the south Wood County area. The objective of Community Progress Initiative is to create an innovative, self-reliant & business friendly culture in a vibrant community with a prosperous local economy. Launched in April 2004 as a three-year initiative, thousands of citizens from throughout the Heart of Wisconsin area have participated in programming offered in two primary focus areas: Building a Strong and Positive Community; and Creating a Business Friendly Culture.

The Progress Initiative has been recognized nationally as a model in community economic development by the Small Business Administration as one of 19 Best Practice examples and as Wisconsin Rural Partners' Top Rural Development Initiative. The international Community Development Society awarded the Community Progress Initiative the Innovative Project Award for 2006 at its 36th International Conference in St. Louis. Community development professionals across the U.S. are working with organizers at Heart of Wisconsin Business & Economic Alliance and Community Foundation of South Wood County to study the Community Progress Initiative's use of all seven social capitals necessary to revitalize and sustain healthy, vibrant communities. Additional information may be found at www.progressinitiative.com.

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EXECUTIVE SUMMARY

Premise:

Telecommunications and broadband (T&B) capacity and access are among the most basic infrastructure needs in the New Economy. Facilitating commerce over the internet is one of the greatest contributors to increased productivity in the modern age. Businesses today use the internet for supply logistics, record keeping, marketing, sales, customer service, design, research and development, and about every other business function imaginable.

T&B applications and technologies are increasingly dependent on the efficiency and reliability of the T&B infrastructure. Reliability and access to robust T&B infrastructure are critical for today's economy, locally or globally.

With the increased use of T&B applications and technologies, comes the potential for the development of new products and services that incorporate those applications and technologies.

The Wisconsin Rapids area is believed to have a dense and robust T&B infrastructure. The purpose of this study is to determine if that is true and, if so, what additional business opportunities that infrastructure may facilitate.

Concept:

Taking advantage of a community's assets and contributing those assets to the regional economy will assist in the economic well-being of an area. T&B access and capacity are increasingly important in community, regional and global economic activity. Robust T&B infrastructure helps a community to not only compete globally, but also to take advantage of global resources and markets.

Some industries are more dependent on T&B infrastructure than others. Having a robust T&B infrastructure in place, can attract businesses that are heavily dependent on T&B access and reliability.

The purpose of this study is to assess the T&B infrastructure in Wisconsin Rapids and identify possible business opportunities that can take advantage of the T&B capabilities. HoW BEA can then initiate practices through its working groups to develop new businesses in the community and expand existing ones through better use of the T&B infrastructure.

Findings:

1. The telecommunications and broadband infrastructure in Wisconsin Rapids is, indeed, robust.
2. Major companies in the area have high-capacity, redundant T&B infrastructure at competitive prices.

3. Redundant T&B infrastructure links installed to serve major users benefit to the whole community.
4. The Wisconsin Rapids area has close connections with major regional SONET rings, giving wide geographical speed and dependability.
5. Most Wisconsin Rapids residences and business have reliable access and capacity available. However, there remains some frustration about service offerings and the expense of installation.
6. Most businesses in the area use multiple T&B technologies and services across a myriad of operations and tasks. Their customers are also adopting the technology.
7. Wisconsin Rapids area population is relatively computer savvy due to high level of connectivity and expertise of local computer workers and their partners.
8. New technologies, such as Voice Over Internet Protocol (VOIP) are beginning to replace traditional technologies (telephone) in local businesses.
9. The comparative advantage of Wisconsin Rapids' T&B infrastructure is eroding due to the increasing investments elsewhere.
10. Wireless access in the area surrounding Wisconsin Rapids needs connectivity improvement.
11. Electric power back-up systems installed by individual businesses, provide the reliability necessary for heavy T&B users.
12. The New e-Economies Cluster group is an active working group in Wisconsin Rapids that is focused on economic development in T&B intensive sectors.

Recommendations:

1. The Heart of Wisconsin Business and Economic Alliance (HoW BEA) and the local T&B suppliers, along with the New e-Economies Cluster, should partner to actively promote, both within the community and beyond, the comparative advantages of the local T&B infrastructure robustness. Market the robust T&B infrastructure to those that already have a proclivity for lifestyles that the Wisconsin Rapids area offers.
2. Communicate the Wisconsin Rapids' T&B infrastructure capacity to specific digital data intense business segments identified in this analysis: data warehousing, distribution logistics, graphic intensive records industries (such as medical imaging), software development, communal call centers, video gaming

design, remote diagnostic products and services, and security monitoring services. Include in the communications the computer savvy workforce and training programs in the area, such as UW-Stevens Point and MidState Technical College.

3. The New e-Economies Cluster (of the Community Progress Initiative), working in collaboration with HoWBEA should consider initiating a dialogue with Renaissance Learning about developing and capitalizing products and new businesses that combine video gaming platforms and educational content.
4. NeCC and HoW BEA should work with local entrepreneurs and investment groups to create new businesses that can take advantage of the robust T&B infrastructure. Perhaps, using the Entrepreneurs Bootcamp and partnerships with WiSys, MidStates Technical College, and the Wisconsin Entrepreneurs Network, businesses identified above can be established.
5. NeCC should research and explore small business innovation research (SBIR) and small business technology transfer (STTR) grant opportunities, particularly through the Department of Defense and the Department of Homeland Security, for secure, T&B intensive product and service developments. This activity may include partnerships with local universities and colleges, WiSys, Wisconsin Entrepreneurs Network, the UW-Madison, the Wisconsin Alumni Research Center, and/or the Office of Corporate Relations at UW-Madison.

INFORMATION AND ANALYSIS

Telecommunications and broadband (T&B) access and capacity are becoming ever more important in everyday personal use and commerce. T&B technologies continue to pervade our personal lives and business activities. Many people and most businesses are now using multiple T&B technologies depending upon access and task.

T&B allows access to an enormous amount of information and goods and services in our personal environments. It also offers huge potential for business applications. T&B technology and applications are increasingly being used by businesses to cut costs and increase productivity. The majority of business activities now have T&B applications imbedded in them. Everything from sales and marketing to customer service to supply chain logistics and production management are increasingly being addressed with T&B applications.

Businesses are becoming increasingly dependent on T&B for efficient operations. Most businesses rely on one or more T&B services: telephone, fax, email, and the internet. The telephone was still rated as perhaps the most important T&B device, if not the most frequently used, although landline telephone service is being supplanted by cellular phone and voice over internet protocol (VOIP) use.

T&B applications such as email are replacing traditional audio telephone communications. Now instead of letting “your fingers do the walking”, people are “letting their fingers do the talking”, as more people are using the keyboard to converse instead of voice. Even with cell phones, text messaging use is increasing. Voice recognition technologies may turn back the tide as we speak our messages into text or actions.

It is believed that eventually, T&B technologies will converge so that all digital devices and applications will seamlessly interact. You will be able to monitor your production cycle with the same tool that you use to retrieve a movie to your TV or buy tickets to the ball game.

Wisconsin Rapids Assessment

We interviewed 13 business and community leaders from Wisconsin Rapids to help determine the capacity and robustness of the telecommunications and broadband infrastructure in the area. We also discussed uses of the T&B in their daily business and personal activities and brainstormed on possible business opportunities the Wisconsin Rapids T&B infrastructure would attract and support.

We also reviewed selected literature and data presented in reports, trade publications, and newspapers pertaining to the topic.

T&B technologies and services used

All the business leaders we interviewed in the Wisconsin Rapids area use some sort of T&B technology and service. In fact, everyone we talked with used a number of T&B devices, services and applications. All used voice services and it was deemed the most important T&B application, if not the most used. Voice services were accessed by landlines, wireless, and voice over internet services. Everyone used the internet for email services and general information searches. Internet access (and email services) is supplied through telephone lines, cable modems, and satellite connections.

The local telephone company and cable company are used by most T&B users depending on the application. Some applications were supplied by both companies and some customers used both companies. A few also subscribed to satellite services.

The business leaders we talked with were also unanimous in the opinion that use of T&B products and services enhanced their business opportunities and management of their companies. In fact, they all said that T&B use has extended their markets, helped with their customer service, and increased the efficiency of their operations.

Businesses in the area use T&B for:

- **Email** – general internal and external communications including attachments and links across the full spectrum of business customer, personnel, and service providers.

- **Supply Chain Logistics and Management** – internet communications and software interfaces allow for the management of vendor inputs and schedules, outsourced production logistics, internal inventory, product distribution and delivery.
- **Production** – internal and external communications systems track production processes, inputs, outputs, performance diagnostics, quality control, inventory, and market activity.
- **Research & Development** – ideas, designs, plans, drawings, modeling, performance testing communicated internally and with external partners.
- **Sales** – prospecting, product demonstration, contracting, orders, product performance feedback, volume reporting, inventory changes, and customer contacts.
- **Marketing** – market evaluations, competitor status, push and pull information exchange, production information, campaign design and rollout.
- **Customer Service** – customer feedback, problem solving, remote diagnostics, and satisfaction surveys.
- **Training** – customer and personnel training and meetings conducted online.
- **Data Storage and Record Keeping** – on-site and off-site data storage and back-up conducted efficiently and repetitively.

Examples were given for each of the above in our information gathering sessions. Examples include:

- just-in-time production processes that require integrated systems of supply-chain information and management;
- local establishments can order product on-line and know expected receipt times;
- remote diagnostics can identify and remedy product problems without having to send a technician to the customer site;
- design proofs can be transmitted electronically for customer review and approval, cutting turnaround time;
- software can track progress of a property sale and agents out on location can be alerted via phone when they receive emails back at the office;
- philanthropic activity and donations have increased two to five percent with interactive information access;

- on-line chat rooms for product knowledge and solutions have become an accepted and even preferred practice, replacing time on the telephone with a service representative;
- products are now sold on-line, saving sales personnel and customer time and travel costs, although face-to-face interaction is still important in initiating and sustaining relationships in most business, but the frequency of such activity has been reduced.

Ideal T&B products and services

Desired enhancements identified for T&B services and products had to do with greater use of streaming video and convergence – being able to use the same products and services for multiple uses. The technology exists, but it isn't readily offered or permeated the customer marketplace yet. Demand for the products and services will have to increase before they will be readily available.

Comparative Advantages Wisconsin Rapids T&B

The Wisconsin Rapids area is well-endowed with T&B access and capacity. Demand for services in the area, particularly from firms such as Renaissance Learning, and competition from suppliers, such as Solarus and Charter Communications, to satisfy that demand have led to dense and robust T&B infrastructure in and near the city. Redundant capacity to service commercial requirements makes the T&B infrastructure very dependable. The installed T&B infrastructure has given Wisconsin Rapids direct and high-speed, high-capacity connections to major regional networks. Wisconsin Rapids is one-connection from the regional SONET (Synchronous Optical Network) ring that gives it highly reliable internet access to both Minneapolis and Chicago interconnects.

This level of capacity and connectivity gives Wisconsin Rapids an advantage over other locales. Anecdotally, we find that any specific location can be constrained by the vintage of the building construction or the commuting patterns of the workforce. In the former case, a building with insufficient T&B capacity can limit the speed and access of T&B service. Too much demand over an inadequate infrastructure within an office building can slow transmission and access. The situation has been compared to the old telephone party lines – one line with twelve people wanting to use it can slow communications.

In the latter case, property costs and commuting patterns put the local populace at a disadvantage. For example, consider the Silicon Valley, the hot bed of computer software development. Due to the high cost of residential property in the Valley, workers must commute relatively long distances from home to work. That commute puts them in sparsely populated areas that, due to high marginal T&B installation costs, leave them without T&B access.

Conversely, the commercial T&B infrastructure in place and the population density in Wisconsin Rapids make marginal residential T&B installation costs relatively low. As a result, Wisconsin Rapids residences have very good T&B access and capacity. (This offers some home-based business opportunities that we will discuss below.) From a business cost perspective, the

company doesn't have to accommodate personal T&B usage in the workplace from either a capacity or time of use perspective.

Wisconsin Rapids' location, coupled with its T&B infrastructure, yields a technical security advantage, both natural and human. Wisconsin Rapids is not prone to natural disasters that would effect digital communications, such as hurricanes, earthquakes, etc. In addition, Wisconsin Rapids is far removed from the centers of terrorist targets.

Another community benefit of the T&B dependent companies in the region is that the employees' partners are likely to be computer savvy as well. This means that a dense computer-skilled workforce resides in the area, an attractive trait for T&B intensive companies.

Other information gathered in during the study confirms that Wisconsin Rapids currently has a comparative advantage in T&B access and capacity. However, it has been suggested that that comparative advantage is eroding. The erosion is not due to any failure of initiative in the area, but rather a function of other areas getting better T&B infrastructure installed. This is essentially an outcome of the industry maturing and increasing the density of access and capacity in total. In other words, others are catching up in the normal lifecycle of new technology.

Wisconsin Rapids has an active economic development effort through the Heart of Wisconsin Business and Economic Alliance (HoW BEA). The Community Progressive Initiative (CPI) was formed through a joint effort of HoW BEA and the Community Foundation of South Wood County. CPI is an economic development entity designed to put in place tools that will be used to build the future local economy. Among other things, CPI has established nine industry cluster groups to focus on particular objectives to foster economic development in the area. For example, the New e-Conomies Cluster (NeCC) is charged with identifying the infrastructure and technology opportunities in the area. NeCC is well positioned to carry out the task of identifying and developing T&B intense business opportunities in the area.

Drawbacks or disadvantages

The only drawbacks to the access and capacity of T&B cited in the Wisconsin Rapids area were the want for better cellular phone service and digital wireless access in areas surrounding Wisconsin Rapids, and the need for more reliable electricity service. Many visitors to the region and workers that commute some distance find numerous digital dead zones around the city. Power outages obviously can wreak havoc with computer dependent businesses and be a deterrent to new businesses looking to locate in Wisconsin Rapids.

What new T&B applications and services could be supplied?

New products and services applications across the T&B infrastructure are functions of consumer demand and technological advances. For example, while the technology for streaming video is available, demand has not reached sufficient commercial and personal demand to command provision.

What new businesses products and services could be developed?

There are a number of new business opportunities that can take advantage of a robust T&B infrastructure. We examined the comparative advantages of the Wisconsin Rapids T&B infrastructure above. Here, we identify seven promising business opportunities that can take advantage of that infrastructure.

Data warehousing and backup – as the use of digital data and records grows, the need for securely storing that data becomes ever more important. Efficient data transfer and retrieval is likewise critical. The robustness and redundancy of T&B infrastructure in Wisconsin Rapids would facilitate these kinds of businesses. The lower marginal cost of enhancement also gives a cost advantage to increasing the size and security of the T&B infrastructure. Wisconsin Rapids also has an incumbent computer-savvy workforce. Moreover, Wisconsin Rapids is far away from centers that risk catastrophic natural or human disasters, making the warehouse physically more secure. A company such as Metevante or Fiserv in Milwaukee, which warehouse and manage back office financial service functions, may be interested in locating a data warehouse in Wisconsin Rapids.

Product warehousing and distribution – the robust T&B infrastructure coupled with nearby access to inter-modal infrastructure (highway interchanges and rail junctions) make Wisconsin Rapids a potential center for integrated transportation logistics centers. Efficient and reliable transfer and tracking of goods is a major business cost focus. The convergence of Class 1 rail service and the Interstate and four lane highways in Central Wisconsin provides a strong product distribution infrastructure base for economic development. This business activity for Wisconsin Rapids holds even more potential as west coast Canadian ports and through rail lines investment occurs. Central Wisconsin is now on one of three main rail routes from Asia to markets in Middle America and the East Coast. This development is quite recent and presents opportunities to expand and attract a number of businesses related to logistics management and distribution. Discussions should be held with Schneider Logistics (a Wisconsin firm and leader in supply logistics) about investment in a state-of-the-art facility.

Imaging storage and transfer – related to the first business opportunity listed above, this type of business depends on high-capacity T&B infrastructure to relay detailed digital images quickly and efficiently. There are two major medical centers in the region, Marshfield Clinic and the Mayo Clinic that could benefit from proximity and T&B capacity. Other graphic intense businesses, such as architectural, engineering, and design firms could also benefit from the robust T&B infrastructure. A possible partnership with the Medical College of Wisconsin bioinformatics initiative should be explored.

Software development – the robustness of the T&B infrastructure within Wisconsin Rapids and the workforce talent in the area gives a software development company three distinct advantages: 1) no need to install new, high-cost T&B infrastructure, 2) access to computer savvy workforce (family partners of local firms' employees such as Renaissance Learning), and 3) a cost-of-living and quality of life that may be attractive to workers on the coasts or in major metropolitan areas.

(Note: Work we did in New Hampshire identified a region of growing software development in the northern part of the state. The advantages were affordability as compared to the southeast part of the state and the Boston area, and quality of life and appeal of the natural surroundings of the White Mountains. The disadvantage was lack of T&B infrastructure. Wisconsin Rapids has the infrastructure.)

One particular software business opportunity that should be considered is computer video gaming. The highly graphic nature of the product requires high-capacity intra- and internet capabilities to design, test, and produce the product. The regional universities and technical colleges can support the training of game design and programming workers, something the UW-Madison apparently has been reluctant to do.

Madison has some very successful video game developers. The micro-cluster has developed sufficiently to allow a new company in Green Bay to tap the experienced talent from the Madison companies for staff. The Green Bay company attracted angel investment from the NEW Capital Fund, one of its first investments. Even the Wisconsin Legislature and Governor are supporting the industry, passing and signing, respectively, Senate Bill 563 that offers tax credits to electronic game companies. Nearby Madison also hosts the Games, Learning, and Society Conference. The conference attracts game designers and educators to develop new educational tools. Educational software products and services with video game platforms is a natural niche for Wisconsin Rapids.

Communal call and product service centers – the dense and redundant T&B infrastructure in Wisconsin Rapids and the high level of high-speed internet residence connections allows for VOIP to be used throughout the community. The business opportunity this represents is the concept that a network of limited-time, home-based workers, sufficiently large and diverse, can offer continual customer service coverage. For example, Wisconsin Rapids residents who have a few free hours in the morning or the afternoon can interconnect to the greater company customer service network. The company, by automatically routing calls to numerous providers scattered across the country or the world, can offer 24/7 customer service. From a capital cost basis of a business, Wisconsin Rapids' large share of residential access and low marginal installation costs, give a cost advantage of employing Wisconsin Rapids citizens.

Remote diagnostic products and services – monitoring and diagnostic technology is being incorporated into production lines and consumer products. For example, production lines are monitored for efficiency and quality control off the shop floor, particularly those that have intensive use of robotics. (Think: they can fix the Mars lander from Earth.) The T&B infrastructure robustness in the Wisconsin Rapids area would serve that market well. The diagnostic technicians could be trained and based in Wisconsin Rapids. Again, the appeal for diagnostics and solutions centers to locate in Wisconsin Rapids is the T&B capacity in the area, skilled workforce, central location, and quality of life for employees.

Remote security monitoring services – the density and reliability of the local T&B infrastructure offers opportunities to monitor, visually and electronically, exterior and interior spaces. Speed and reliability are critical in this activity. With reliable, high capacity T&B,

proximity is no longer necessary to monitor activity or alert distant local responders. (Think: they can fly aircraft over Afghanistan from New Jersey.)

FINDINGS AND RECOMMENDATIONS

Below are our findings and recommendations about the T&B infrastructure in Wisconsin Rapids and possible business opportunities based on the information we gathered during the project.

Findings:

- The telecommunications and broadband infrastructure in Wisconsin Rapids is, indeed, robust. There is a dense, high-capacity phone and cable network servicing the city, due largely to service demands by large commercial users, such as Renaissance Learning.
- Major companies in the area have demanded and have been supplied with high-capacity, redundant T&B infrastructure at competitive prices.
- Redundant links in T&B infrastructure have been installed to serve major users. This offers an added reliability benefit to the whole community.
- The Wisconsin Rapids area has close connections with major regional SONET rings, giving wide geographical speed and dependability.
- Most Wisconsin Rapids' residences and business have reliable access and capacity available, due to the large investments in high-capacity T&B infrastructure in the area and the relatively low marginal costs of last-mile connections. However, there remains some frustration in the small business and residential segments about service offerings and the expense of installation. For example, packaged programming service selections (*not a la carte*), and the cost of installation of the "last mile". Wisconsin Rapids residents and businesses extensively use the T&B capabilities and in some respects take the service for granted due to its reliability.
- Most businesses in the area use multiple T&B technologies and services and deem them vital to their business activities across a myriad of operations and tasks. Local businesses are using the internet capabilities for an ever-increasing number of uses for production, management, customer service, and sales. They and their customers are adopting the technology.
- Wisconsin Rapids area population is relatively computer savvy due to high level of connectivity and due to the expertise of local computer workers and their partners.
- New technologies, such as Voice Over Internet Protocol (VOIP) are beginning to replace traditional technologies (telephone) in local businesses.

- The degree of comparative advantage of T&B in Wisconsin Rapids is eroding due to the increasing supply of T&B infrastructure being built across the region and every where else.
- Wireless access in the area surrounding Wisconsin Rapids needs connectivity improvement.
- Electric power back-up systems installed by individual businesses, provide the reliability necessary for heavy T&B users.
- There are active working groups in Wisconsin Rapids that are focusing on economic development in T&B intensive sectors, such as the New e-Economies Cluster (NeCC) group.

Recommendations:

- The Heart of Wisconsin Business and Economic Alliance (HoW BEA) and the local T&B suppliers should partner to actively promote, both within the community and beyond, the comparative advantages of the local T&B infrastructure robustness. One promotional aspect that should be considered is to add a new marketing approach. Augment the marketing to T&B dependent businesses of the quality of life in Wisconsin Rapids with an approach that promotes the robust T&B infrastructure to those that already have a proclivity for lifestyles that the Wisconsin Rapids area offers. For example, promote Wisconsin Rapids' robust T&B infrastructure to readers of Field & Stream or Outdoors magazines or websites. Many senior company managers are outdoor recreation enthusiasts.
- Communicate the Wisconsin Rapids' T&B infrastructure capacity to specific digital data intense business segments identified in the above analysis: data warehousing, distribution logistics, graphic intensive records industries (such as medical imaging), software development, communal call centers, video gaming design, remote diagnostic products and services, and security monitoring services. Include in the communications the computer savvy workforce and the training entities in the area, such as UW-Stevens Point and MidState Technical College.
- The New e-Economies Cluster (of the Community Progress Initiative), working in collaboration with HoWBEA should consider initiating a dialogue with Renaissance Learning about developing and capitalizing products and new businesses that combine video gaming platforms and educational content.
- NeCC and HoW BEA should work with local entrepreneurs and investment groups to create new businesses that can take advantage of the robust T&B infrastructure. Perhaps, using the Entrepreneurs Bootcamp and partnerships with WiSys,

MidStates Technical College, and the Wisconsin Entrepreneurs Network, businesses identified above can be established.

- NeCC should research and explore small business innovation research (SBIR) and small business technology transfer (STTR) grant opportunities, particularly through the Department of Defense and the Department of Homeland Security, for secure, T&B intensive product and service developments. This activity may include partnerships with local universities and colleges, WiSys, Wisconsin Entrepreneurs Network, the UW-Madison, the Wisconsin Alumni Research Center, and/or the Office of Corporate Relations at UW-Madison.

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Appendix

Wisconsin Rapids Telecommunications Study Methodology

We interviewed 13 business and community leaders from Wisconsin Rapids to help determine the capacity and robustness of the telecommunications and broadband infrastructure in the area. We also discussed uses of the T&B in their daily business and personal activities and brainstormed on possible business opportunities the Wisconsin Rapids T&B infrastructure would attract and support.

We began our discussions with a list of questions (see below) and expanded upon the discussion as ideas presented themselves.

Questions:

1. What type of telecommunications equipment and services in your business or job?
2. Which telecommunications services are most important to your business/job?
3. For what do you use the telecommunications services?
4. At what personnel level do you manage your telecommunications investment?
5. Do area telecommunications enhance or limit your business/job offerings or growth?
6. Do you have any problems with area telecommunications access?
7. What do you see as the most advantageous uses of telecommunications infrastructure, equipment and services?
8. Are there any drawbacks or disadvantages of area telecommunications infrastructure, equipment and/or services?
9. What would be your ideal construct of telecommunications equipment and services?
10. What do you see as new products and services that can be developed by incorporating the latest telecommunications technologies?

We also reviewed local and national news articles and papers addressing telecommunications and broadband as it pertains to economic development in the state and more rural areas. (See bibliography.)

We analyzed the collected data and information and assessed the T&B infrastructure in the Wisconsin Rapids area and identified possible business opportunities that would utilize the local T&B capacity.

We report the findings and recommendations in this written report.