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Publicly-Operated Telework Facilities

An Economic Development Opportunity for Michigan's Rural and Tourism-Oriented Communities

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Connected Nation, Inc.

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MSU EDA University Center for Regional Economic Innovation

MICHIGAN STATE UNIVERSITY | University Outreach and Engagement

Publicly Operated Telework Facilities

An economic development opportunity for Michigan's rural and tourism-oriented communities

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Michigan State University

Center for Community and Economic Development

EDA University Center for Regional Economic Innovation

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INTRODUCTION

As broadband becomes an increasingly important tool for Michigan residents, a key economic opportunity for the state is emerging. Michiganders are working from home or remotely from another location through a broadband connection, commonly known as teleworking. Teleworking, also referred to as "telecommuting," is defined as "working outside the conventional workplace and communicating with it by way of telecommunications or computer-based technology (Nilles, 1994). This work arrangement enables an employee to work from a location that is remote from the traditional bricks and mortar environment by utilizing high-speed Internet connectivity and related technology. The Framework Agreement on Telework further defines the concept as "a form of organizing and/or performing work, using information technology, in the context of an employment contract/relationship, where work, which could also be performed at the employer's premises, is carried out away from those premises on a regular basis" (European Social Partners, September 2006). Telework differs from traditional employment models due to its "spatial flexibility" (Obra, et al., December 2002). Telework can be performed anywhere, despite its less sophisticated facilities than available at the headquarters, home office, or branch location (Mokhtarian, 1991).

Telework centers serve as a tool to facilitate telecommuting. These establishments have been defined as:

> *[P]rivate or public organizations that provide services related to [Information and Communications Technology (ICT)] mainly for a local community, and suppose technological innovation in the areas where they are set up. They are set up in office spaces equipped with computer and telecommunications systems, used by one or several employers, thereby making it possible to work at a distance using the Internet. They make ICT related services available in isolated areas* (Obra, et al., December 2002).

A telework center is further characterized by "the absence of a self-contained pyramidal organization structure" as telecommuters typically report to off-site supervisors (Mokhtarian, 1991). There are two main categories of teleworkers that this Co-Learning Plan seeks to analyze:

1) Teleworkers who reside in a rural location and work from a home or shared office environment, enabling a previously disconnected population to participate in the knowledge economy without necessitating relocation; and

2) Teleworkers who are visiting a region (for work or leisure) and temporarily work from a public or shared office space, fulfilling the expectations of the twenty-first century connected workforce to be able to complete tasks from any location.

These two clusters can be further delineated into self-employed teleworkers and corporate teleworkers (Obra, et al., December 2002). In both instances, these groups may utilize a "rural telecenter," defined as "offices equipped with all the advanced telecommunication services available, located in rural areas in medium or small-sized populations, and their aim is to provide small businesses and residents in general with access to the same services as would be available in a large city" (Obra, December 2002).

Rural telework centers can serve as a symbol of community vibrancy, improving quality of life and catalyzing economic development and community revitalization. In today's interconnected global economy in which digital content and other technology-enabled services are continually becoming larger

shares of global GDP, teleworking allows talent and capital to be recruited from and delivered to any location. Telework can offer more flexible job arrangements for already economically active people, as well as new opportunities to return to the labor market for unemployed individuals (Vitola, et al., September 2013). As a result, communities are able to attract permanent residents and temporary visitors to their locations, as well as prevent current residents from departing. Engaging rural residents and tourists through this model is expected to benefit a community through increased employment opportunities and enhanced local revenues through more spendable dollars among residents and longer-term visitors. Teleworking can also provide a cost-saving solution to employers since the cost of living and average wages are often lower in rural communities.

Tourist expense estimations can provide a glimpse into the economic impact of long-term tourists in a community through hypothetical scenarios. According to Budget Your Trip.com, the average per person expenses of a budget tourist in the United States is approximately $79.19 per day. Typical tourist expenses include lodging, dining, entertainment, park fees, gasoline, and transportation, among many other elements that comprise a tourist trip. A family of four on a weeklong vacation in rural Michigan, therefore, could expect to spend approximately $1,900 for their trip, ($79.19 * 4 people * 6 nights). Similarly, if that same family could extend their vacation by another week because one or both parents are able to continue working during their time away due to enhanced telework opportunities, the same family could potentially add $4,117.88 to the local economy based on the same assumptions, ($79.19 * 4 people * 13 nights).

Overall, the telework model is thought to serve as an important resource to overcoming employment barriers and mitigating disparities in regional development (Vitola, et al., September 2013). This plan seeks to further explore the opportunities of telework centers to provide a service to disadvantaged Michigan communities so that, through broadband connectivity and other technologies, the physical separateness of these communities does not prevent their inhabitants and visitors from participating in the twenty-first century economy.

For the purposes of this paper, the terms “telework center,” “shared office space,” “telecommuting center,” and similar terms, are used synonymously.

HISTORY

Originally devised as an opportunity to prevent urban transportation congestion, the term "telecommuting" was coined in 1975 by J.M. Nilles in a paper entitled *Telecommunications and Organizational Decentralization* (Nilles, 1975). Nilles predicted that "[t]he increasing availability of sophisticated communications and computer technologies may encourage the continued growth and future decentralization of 'information industries" (Nilles, 1975). Noting the "sophistication" of computer technology at that time, a telecommuting network was defined as having "computational and telecommunications components in offices close to (but generally not in) their homes, rather than commute long distances to a central office" (Nilles, 1975).

Despite the rapid growth and perpetually enhanced sophistication of information and communications technologies since Nille's early prediction, widespread implementation of telecommuting has been slow (Rhee, 2008). The first urban telework center is said to have started in France in 1981, but it wasn't until a decade after its initial definition that the first rural telework center launched in Sweden and Denmark in 1985 (Obra, et al., December 2002). That same year, a telework center was also introduced in Hawaii (Obra, et al., December 2002). During the following decade, these models continued to spread to other countries, and by 1993 there were nearly 200 telework centers internationally (Obra, et al., December 2002). Among these, privately operated centers were more common than public organizations, except in the cases of tele-education and general services (Obra, et al., December 2002). A report released by the United States Department of Transportation that same year projected that 50.3% of the teleworkers that would exist nearly a decade later in 2002 (about 15 million workers) would have their usual workplace within a Teleworking Center (Obra, et al., December 2002). By 2005, only five percent of employees were working from a telework center, an amount that increased to eight percent by 2008 (WorldAtWork, 2009); and in 2010, 20% of the U.S. working adult population of 139 million worked from home or remotely for an entire day at least once a month (Vitola, et al., September 2013). In 2013, *Deskmag.com*, an online magazine on coworking, forecasted demand for coworking space to expand by as much as 40 percent that year (Nahajewski, March 21, 2013).

Michigan has experienced a similar telework trajectory. The 2011 report, *Teleworking in Michigan – Empowering Workers Through Broadband*, noted that nearly one in five employees (19%, representing approximately 741,000 adults) worked from home using an Internet connection instead of commuting to work at that time (Connect Michigan, December 15, 2011). This figure was up slightly from 17% the year prior. When asked how often they teleworked, more than one in five teleworkers (22%, representing approximately 166,000 adult Michiganders) said that they teleworked every day, while an additional 39% (representing approximately 290,000 employed Michigan adults) teleworked at least once per week, but less often than every day; 86% of Michigan teleworkers (representing 644,000 Michigan adults) teleworked at least once per month.

In addition to the 741,000 Michigan employees who teleworked, more than one-third of adult Michigan workers who did not telework (35%) said that they would be willing to do so if empowered by their employers. This represented an interest to telework by more than 1.1 million adult Michigan workers. Altogether, 47% of employed Michigan adults said that they either teleworked at the time of the survey or would be willing to do so if given the opportunity by their employers. This represented more than 1.8 million employed Michigan adults and complements previous findings that many more workers want to telecommute than have been able to do so (Lister, 2012); (Mokhtarian, 2000)..

Across Michigan, there were several differences between employed adults who teleworked and those who did not across different educational, income, and age groups. Michigan teleworkers tended to have

higher average incomes than employed Michigan adults who did not telework. On average, employed teleworking adults in Michigan reported earning approximately $79,400, compared to $59,200 earned by non-teleworking employees. As suggested by this finding, employed Michigan adults with higher education levels tended to telework more often. In fact, only 3% of employed Michigan adults with a high school diploma or less say that they were teleworking, suggesting that the expansion of telework opportunities would offer a new pool of workers in the state. When asked, 31% (representing approximately 1.1 million Michigan adults) who were either unemployed or not part of the workforce said that they would be willing to enter the workforce if they were given the opportunity to telework, including 44% of homemakers, 13% of retirees, and 31% of adults who are not working due to a disability. This represented approximately 187,000 homemakers, 217,000 retirees, and 156,000 Michigan adults with disabilities who would join the workforce if empowered to do so via teleworking.

Between 2010 and 2011, the share of Michigan teleworkers increased among employed adults who attended college, but the largest increase in teleworkers was among Michiganders age 55 and older. During this time, teleworking did not increase significantly among employed adults age 18-54. Yet in 2011, one in five employed Michigan adults age 55 or older said that they telework, up eight percentage points from 2010. This represented approximately 134,000 adults in this age bracket who used the Internet to work from home instead of commuting.

As the research indicates, communities with high-skilled, technical employees who perhaps are age 55 or older are particularly prime candidates for successful teleworking environments. To further research and determine the success and continued upward trajectory of telecommuting, telecommuting research and implementations in other states and countries have identified various barriers and best practice to this work model."

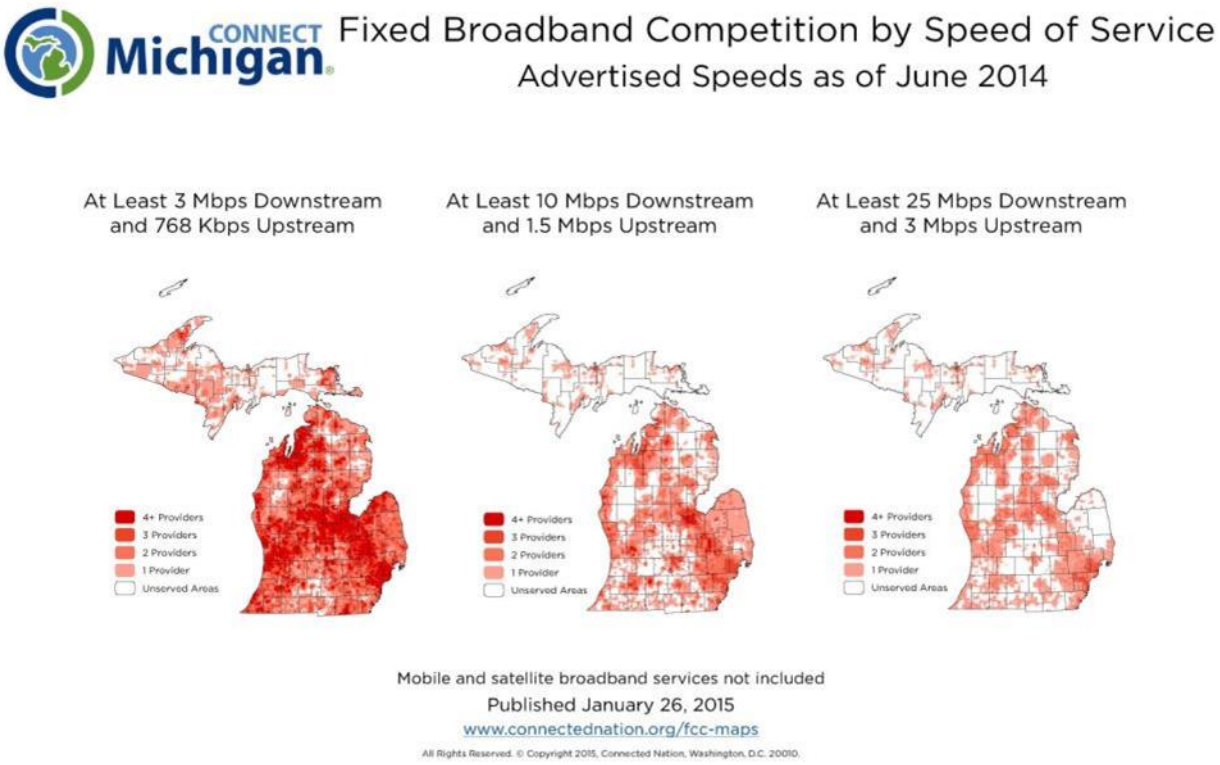
BARRIERS TO TELEWORK MODELS

According to Obra, et al., "the most important aspect for the success of telecenters [] is not merely the access to technology, but the capacity to understand the community where it is to be set up, and to adapt itself accordingly" (Obra, et al., December 2002). Other analyses have attributed the success of telework centers to public sector support and utilizing these spaces to facilitate similar activities that accomplish multiple goals. For example, in addition to a work hub, these centers could offer training, consultation and job matching services, networking, and mentoring (Vitola, et al., September 2013).

Michigan has emerged as a leader in community planning projects through its success in the Connected Community Engagement Program ("Connected"). Based on national best practices, the Connected program engages and assists local communities to assess their broadband and technology status, develop a localized technology action plan, and catalyze community members to address the local broadband needs. Connected Community Engagement teams convene leaders across multiple sectors including schools, libraries, local and county government, economic development, chambers of commerce, emergency services, healthcare, broadband providers, and others. These multi-dimensional groups are often the first gatherings of their kind and lead to natural collaborative models of broadband and technology expansion. Engagements such as these provide the foundation for the public sector support of telework development and other technology-related community projects.

Despite the opportunities for teleworking arrangements to address community needs, barriers still exist on the part of the employers and the employees, potentially resulting from a lack of information regarding the benefits of telework centers (Obra, et al., December 2002). From the corporate perspective, barriers to the implementation of a telework policy and its success can include concerns regarding security of confidential data or personal information and potential additional costs to the employers, as well as challenges associated with remote supervision. On the part of the employees, resistance to telecommuting may result from seemingly lost opportunities for on-the-job training and promotion (Rhee, 2008).

Even if the above barriers are addressed, with the successful implementation of telework programs being dependent upon technology infrastructure and use, widespread connectivity is also necessary for success; an issue that has been present since the first research on telecommuting was unveiled in the 1970's. According to Jack Nilles, "One factor influencing the extent and rate of organizational decentralization is the operational availability of adequate communications networks and components (Nilles, 1975). According to research conducted by Connect Michigan, a nonprofit organization with a mission to expand broadband access, adoption, and use throughout the state, Michigan's 2014 broadband landscape demonstrates strong growth in broadband infrastructure and deployment. For example, 88.21% of households in Michigan have access to 25 Mbps download/3 Mbps upload broadband networks. However, the vast majority of the areas in Michigan without such access are located in rural regions of the state, as depicted in the broadband maps below.



Yet, connectivity alone is insufficient. As Nilles expressed forty years ago in Telecommunications and Organizational Decentralization, "although the requisite telecommunications and computer technology exists to enable organizational decentralization that is economical and societally significant . . . [these] factors are insufficient to motivate many business and governmental organizations to decentralize" and "[t]raining, by both school and information industry organizations, may be necessary to prepare workers for the new work mode (Nilles, 1975)." In addition to the necessary connectivity itself, the digital skillsets to utilize these tools are a fundamental piece of the solution.

In some instances, highly advanced technology and communications users may be present in rural environments and the issue is how to connect them with employers and/ or entice companies to recruit from a smaller labor pool; however, oftentimes digital skills serve as a key barrier to teleworking. As expressed by Seamus Grimes in the *Journal of Rural Studies*,

> *While supply side factors such as the provision of the necessary infrastructure and hardware is fundamental in order for rural areas to benefit from this technology, what is even more fundamental is the existence of a demand for ICT services and of the necessary skills required for exploiting the potential. It is precisely in relation to these latter two factors that rural areas tend to be the most 'switched off' or disconnected parts of the Information Society* (Grimes, 2000).

Expanded broadband access is important; however, without corresponding digital literacy among Michigan consumers and businesses, further investment and build-out, as well as corresponding rural development, could be deterred.

In 2011, more than nine out of ten teleworkers (94%) across Michigan said they teleworked via a home broadband connection. However, broadband availability is not the only factor in this equation; 93% of teleworkers say they have subscribed to home broadband service for more than one year, suggesting an increased level of digital literacy and comfort using broadband at home. This argument is strengthened by the fact that 15% of Michigan broadband adopters at that time (approximately 682,000 Michigan adults) first subscribed to home broadband service because they needed it for work. When examined together, these facts point to the importance of having a digitally literate workforce to make the most of modern opportunities like teleworking.

The barriers to broadband adoption are consistently delineated into three main categories: (1) affordability of service and/or the device; (2) perceived relevance of online resources; and (3) digital skills to use the device and connectivity. Although the lack of digital literacy skills has declined as a barrier to home broadband adoption since 2011 from 18% to 12% of non-adopters, this issue is still present among many Michiganders.

In order to fully capitalize on teleworking opportunities and implement a successful coworking space, a community must address an array of diverse, yet manageable barriers. By educating employers and future employees on perceived concerns of teleworking such as projected costs, security doubts, remote supervision, and lost opportunities of on-the-job training and promotions, communities are more likely to create the type of informed citizens and businesses needed to move forward with teleworking projects. Additionally, by ensuring that residents can both connect to the Internet and know how to use the technology available, a community can ensure that its employee base is ready with the tools needed for teleworking.

CASE STUDIES
EXAMPLES, MODELS, AND BEST PRACTICES

The following case studies demonstrate best practices for implementing successful coworking initiatives in rural and tourism-dependent areas.

Outside Michigan

CoLab, Port Townsend, Washington. The CoLab in Port Townsend, Washington serves the small port town of approximately 9,200 by offering coworking space to residents looking to collaborate and share ideas. Members share common space such as a kitchen and meeting space and may take part in various workshops offered. The center has robust Internet access, office furniture, teleconferencing equipment, and even offers free publicity for members through their CoLab social channels. According to Frank DePalma of CoLab, "bringing coworking spaces like CoLab to rural areas provides a professional, world-class working environment that you might find at a Silicon Valley startup with all of the tools to efficiently develop ideas, get training, and grow a fulfilling business in a small rural town" (Buczunski, May 24, 2011). Membership for a "full time resident" is $300 per month with various other membership levels available for purchase.
http://colabusa.com/; http://go.ptcolab.com/en

Öckerö Telecentre, Sweden. The coworking space in the small island community of Öckerö with a population of 3,488 provides teleworking space for employees of Volvo and Ericsson. Additionally, the center offers previously unavailable programs for digital education to employees locally. Located near a harbor, visitors also can use the space for hourly work station rentals as well as for copying, emailing, and faxing purposes. The community, whose residents travel by ferry to the largest local town to work, saw the need for a teleworking opportunity and presented the case to the Community Council. To gauge interest, a demand assessment was completed gathering feedback from approximately two thousand commuters traveling by ferry to work. After receiving positive responses to the concept of a telecenter, the Community Council organized a marketing campaign to sell the idea to the employers of the interested telecommuters. The center received initial investment from the community, regional authorities, and a European Union regional fund, but now is self-sustainable, operating as a private business funded through rental income and educational program revenues. http://www.flexwork.eu.com/members/regions/swed.pdf.

Digital Works. While technology provides expanded employment opportunities, some workers resist teleworking because of the seemingly lost opportunity for on-the-job training and promotion (Rhee, 2008). Digital Works overcomes these barriers by training, placing, and mentoring high-quality candidates and locating coworking centers in rural America where job demand is high, few employers exist, and the cost of living is low. At the end of training, workers are provided opportunities that match their skills and career goals.

Digital Works is currently operating at 16 locations across three states and growing. The program is expected to launch its first urban pilot in late 2015. To date, over 350 jobs have been created since the inception of Digital Works in June 2013.
http://www.connectednation.org/digitalworks.

Michigan-Based Coworking Centers

Byte & Mortar. Inspired by an at-home worker who realized the difficulty of accomplishing all that needed to be done from a home office (Nahajewski, March 21, 2013), Byte & Mortar "is bringing the at-home workers and office roamers out of loud coffee shops and home offices with distractions like dogs and dirty dishes and into a real office environment" (Shine, March 13, 2013). A new addition to Troy in Metro Detroit in late October 2012, this boutique coworking space provides a modern design with flexible business options, offering "high-tech office space to businesses and individuals for a few weeks or a few years at a time" (King, December 11, 2012). This independently owned, Michigan-based business center is focused on helping Michigan businesses grow, adapt, and succeed (Rath, March 14, 2013). "I looked into the rise of coworking – the shared office concept – and tied it more into the concept of a business center, with shared services and private office suites" (Stanard, Spring 2013).

Playing on the traditional "bricks and mortar" job environment description, Byte & Mortar is located in a 6,000-square-foot office building in Troy, Michigan. The facility offers 18 private offices; one large, open coworking space; a business center; conference rooms; meeting areas; a virtual receptionist; and other business services and amenities such as a lobby, kitchen, courtyard, coffee, tea, secure Wi-Fi, fax, and mail. All utilities, phone and Internet services, and custodial services are included in the weekly or monthly rental fee. This fee provides access to the facility 24 hours a day/ 7 days a week. The coworking membership is available for $159/ month.

By bringing individuals out of their home or temporary office environments, the services provided by Byte & Mortar enable others to work more easily from remote locations than they would normally be able to. According to Byte & Mortar's founder, Daniel Haberman, "[Byte & Mortar] could have clients in San Diego who just need Michigan as their address, and from here they can do business anywhere in the world . . . If they work from home or the beach or a cabin in the woods, they have an office taking care of their needs" (Shine, March 13, 2013). Byte & Mortar also attracts international users who need a Michigan address or U.S.-based receptionist. Mail Services, which includes a mailing address, mail and package receipt, mail forwarding, and meeting space discounts are available for $59/ month. Voice Services, which includes a local telephone number, calls answered by a professional receptionist, voicemail, call forwarding, and meeting space discounts are provided for $119/ month. By July 2013, the space already had over 40 clients (Baum, July 1, 2013). Byte & Mortar was named fourth among "The Nation's 15 Best Coworking Spaces for Entrepreneurs" by *YFS Magazine*. (Baum, July 1, 2013).

Even though not situated in a rural location, Byte & Mortar still stands as a sign of community revitalization. "As the economy slowly rebounds in the Motor City and beyond, Byte & Mortar's opening in the hub of Troy's business corridor is a welcome sight (Baum, July 1, 2013). It's great working from home, but when four or five people come together to work on a project, a home isn't the ideal setting," said Haberman (King, December 11, 2012).

Ponyride. In July 2014, Pony Ride opened a coworking space in a previously foreclosed warehouse in Corktown, Detroit, that houses entrepreneurs, authors, nonprofits, technology companies, graphic designers, and other individuals and businesses. Members are provided access to a conference room, shared kitchen, Wi-Fi connectivity, printing, storage, and desk space. Rent is 20-25 cents per square foot; a 75-80% reduction from the market rate. In exchange for the low rate, tenants must offer free classes (Bookstein, July 2, 2013). Previous workshops and classes included lessons on metalsmithing, video production and editing, gardening, sewing, and myriad other topics As of July 2013, 25 shops and businesses were running in PonyRide, and another 20 were waiting to get in (Bookstein, July 2, 2013).

Like Byte & Mortar, Ponyride can serve a role in economic development – with its tenants optimistic that locating their business here, as opposed to the suburbs, will help the city's rebirth and rebuilding of a neighborhood without driving long-term residents out (O'Leary, May 13, 2013). According to one article, "Ponyride represents the changing tide of Detroit's slow economic recovery" (McDonnell, May 10, 2013), and another said the facility "houses innovation that feeds Detroit's 'renaissance' buzz" (Bookstein, July 2, 2013).

Worklab. Launched in June 2014 by Mark and Kellie Custer in the heart of downtown Grand Rapids, Worklab offers four distinct services: corporate coworking for individuals, private offices, meeting space, and event space. The building directly connects to downtown hotels through the skywalk tunnel system and the facility particularly targets corporate workers and business travelers (Rumery, June 19, 2014). Amenities include private offices, coffee and snacks, concierge services, meeting and conference rooms, a fitness center, high-speed data, copy and printing, and an on-site host, and memberships range from single day use to 24/7 access. "Work is no longer confined to the office," says Mark Custer, co-owner of the new Worklab. "This is a revolutionary workspace for Grand Rapids and we envision it will become a hub for inspiration and collaboration. … [M]obile workers need better places to work and conduct business than their home or corner coffee shop."

CoWharf. Launched in December 2012, CoWharf was launched by Bradley Matson and his wife, Kirsten. Bradley, after returning to Traverse City from Arizona to start his career, longed for the coworking space he enjoyed in Arizona. The 15-desk CoWharf facility was started when Bradley started teleworking for his company in Arizona while back in Traverse City. Located in the downtown area, this coworking space can accommodate multiple work styles. Memberships are very flexible from daily passes to tiered monthly memberships.

"I moved to Tucson to work for a small tech start-up. We rented a shared space, and I loved that. But, after a few years, my wife and I really missed Michigan. We worked remotely for the same company when we came back here, but after being in an open, shared environment for so long, I didn't like freelancing at home in isolation," explained owner Bradley Matson (Barr, February 26, 2013). "Employment environments have changed so much over the past five years – for a lot of people, work is done solely online so they can work and live anywhere they want now, and Traverse City is a pretty nice place to live," says Matson (Barr, February 26, 2013). "There is a demand for coworking services. They are really community assets in an evolving economy" (Barr, February26, 2013).

The Stream. Located in rural Newaygo, Michigan, 50 miles north of Grand Rapids, is The Stream, which is aimed, in part, at assisting Newaygo commuters and the over 4,000 seasonal residents (Roelofs, April 30, 2010). The idea for The Stream resulted from a 2007 study for the West Michigan Strategic Alliance that identified Newaygo, as well as Holland and Ada, Michigan, as "ripe for remote and alternative workforce development" (Roelofs, April 30, 2010). The 13,000-square-feet facility was funded through more than $3 million from investors, including $2 million from Newaygo's tax increment finance district. The public-private project hopes to help the work-starved region that was already struggling to maintain local jobs, not to mention, entice new ones.

According to a study by the Brookings Institute, the unemployment rate in Newaygo County grew by 46 percent from 2007 to 2008 and by 30 percent from 2008 to 2009 (Roelofs, April 30, 2010). As stated in a 2010 article, Newaygo County was home to about 50,000 residents, spread over about 842 square

miles. At that time, most had no access to reliable, high-speed Internet and more than 9,000 workers were traveling outside the county for work (Roelofs, April 30, 2010). As of July 2014, only 51% of Newaygo County households had access to broadband at 25 Mbps download and 3 Mbps upload, (the FCC's definition of advanced broadband service).

The center aimed to eliminate one of the biggest barriers to would-be telecommuters: the lack of robust broadband (Roelofs, April 30, 2010). In addition to Wi-Fi connectivity, the $150/month fee for individuals provides access to computers, copy machines, teleconferencing, meeting rooms, and a conference room. For an additional charge, two private offices are also available for rent. Small business, large corporations, walk-in, and customized membership options are also available. The Stream also provides education and job training for individuals seeking to earn college credit in the county.

"If we can't physically bring jobs here, we can use the Internet to provide jobs as well. People can have the quality of life they want here and still have a professional work environment," says Andy Lofgren, Executive Director of the Newaygo County Economic Development Office (Roelofs, April 30, 2010). "The Internet has made the world smaller. This is our opportunity to participate in the new economy" (Roelofs, April 30, 2010).

According to Sharon Gustafson, Medical Transcriptionist for Spectrum Health, "My employer allowed me to begin working at The Stream this past March. Previously, I had spent the last 7 years commuting from Newaygo to 44th and Patterson in Grand Rapids. From my home that was a 50-mile drive one way and took at least 1 hour. In the winter, the drive has been as long as 2-1/2 to 3 hours. That added up to 500 miles a week and 10 hours of time. Then, when gas prices went above $4.00 a gallon it also became very expensive to make that commute. Now, my commute is approximately 7-1/2 miles one way and takes less than 15 minutes. This has allowed me to save quite a bit of money, not only in gas, but also, the cost of my car insurance has gone down and I do not need an oil change every 6 weeks. As well, I no longer have to purchase "business casual" work clothes that I only wore to work and I get to sleep in later in the morning. If necessary, I could even go home for lunch! The work spaces at The Stream are very accommodating for my type of work, and the people here are very nice as well."

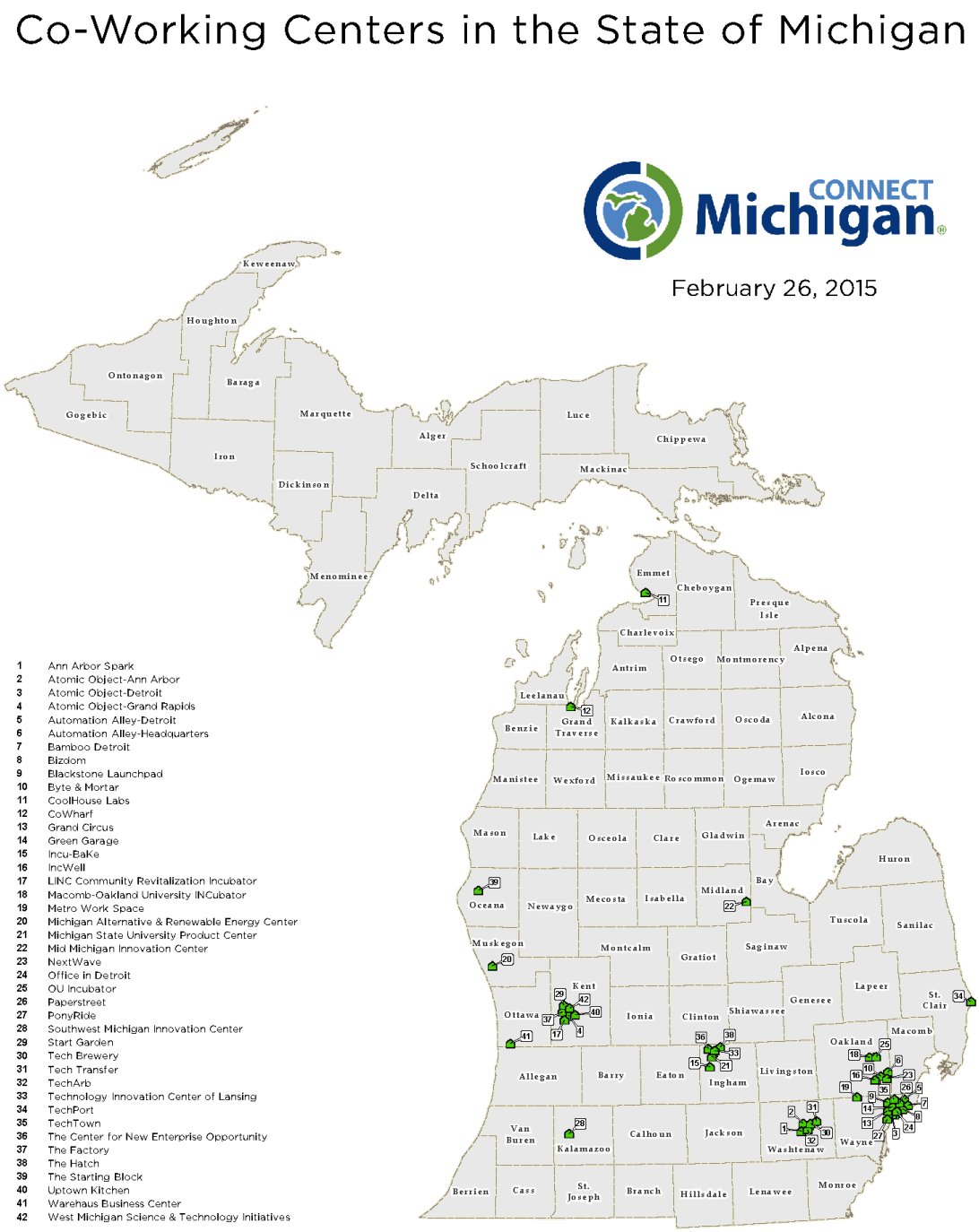
As stated by Tobi Lake, Newaygo County Administrator, "Better than 45% of our residents leave Newaygo County for their jobs. With the technology available and the cost of gas, organizations and businesses that embrace The Stream's remote workspace concept help save the environment, alleviate traffic congestion, and save employee's transportation dollars, it also increases morale and helps the local economies."

TechPort. TechPort is a new coworking space that opened in 2014 in Port Huron. According to the About Us page of its website (https://techporthuron/about),TechPort is self-described as "a cool new place for entrepreneurs, techies, consultants, companies, and freelancers seeking an alternative to working in coffee shops and cafes, or the isolation of independent home offices," TechPort offers flexible coworking spaces with high-speed Wi-Fi, a conference room, kitchen and related amenities, whiteboard space, mentoring, and printing.

The Warehaus at Baker Lofts Business Center. In 2013, a former furniture factory in Holland, Michigan was re-launched as an urban, open-concept office building. Partnered with a Grand Rapids development firm, the commercial space seeks to attract small business owners. The space offers eleven private offices and shared workstations, as well as amenities such as a print/fax/scan station,

videoconferencing capabilities, 24-hour access, keycard security, and dual kitchen facilities. Warehaus charges a flat, fixed fee to operate from the facility, ranging from $125 per month for an individual to $775 per month for a private office that also requires a three-month commitment (Vanochten, May 25, 2013).

CoolHouse Labs. Described as a "summer camp for startups," CoolHouse Labs' summer program serves as a tech startup accelerator and venture fund located on the shores of Lake Michigan in Petoskey, Michigan. Participants are offered $50,000 in funding for 6 percent investment and also have access to free housing, more than 70 mentors, 12 weeks of training in a lab, design and product development resources, and the opportunity to increase funding for startup. The summer program runs from June to August. CoolHouse Labs also offers a winter program in Ann Arbor.



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COMPILED AND EXTRAPOLATED BEST PRACTICES FOR IMPLEMENTING AND DEVELOPING RURAL TELEWORK CENTERS

Rural communities have much to gain by leveraging high-speed broadband connections to provide teleworking or shared office space opportunities for employees and employers. However, rural communities lack the population and business establishment density of more urban or suburban areas where private-sector models of telework and shared working space are often found. Rural communities, therefore, will need to establish multi-faceted spaces that are founded on strong public-private partnerships. The following provides a summary of best practices and strategies for exploring the potentiality of a teleworking center in a rural community.

Step 1: Assess the community to determine teleworking needs and readiness

In order to overcome potential barriers to teleworking mentioned previously, a community should start off the planning process by fully researching and assessing their current economic needs, workforce, employer compliance, broadband access, and potential employees' digital skillsets. By identifying potential areas of weakness or resistance to teleworking, a community can work to address the issues and move forward with a coworking plan that fits their specific community's needs.

- Determine the type of community
  - Identify the area as urban, rural, tourism-dependent, etc.
  - Determine if workers are commonly leaving the community to find employment and identify the locations and the employers for which they work.
  - Identify community partners, (e.g., educational institutions, chambers of commerce, economic development, local government, employers, business associations, entrepreneur groups, etc.)
  - Pinpoint communities that house educational institutions such as universities or vocational schools in order to potentially target the next generation of high-skilled, technical workers.
- Aggregate demand
  - Research businesses to determine if they are friendly to the idea of allowing employees to telecommute, particularly those located outside the community where residents are traveling to work.
  - Assess residents'/employees' motivation to work from a coworking space.
  - Determine if the town has a large number of tourists who need to work from a professional space while visiting the community by consulting local chambers of commerce and visitors bureaus.
- Determine home broadband access and adoption rates
  - Research the community's broadband speeds, coverage, technology types, and providers to determine if access is widespread in the community. Maps and data on broadband access in Michigan can be found through Connect Michigan (www.connectmi.org/learn).
  - Assess the community's broadband adoption and use. Identify if citizens are using the technology that is available by purchasing service at their homes or by visiting community institutions, such as libraries, for computer usage. For those citizens not adopting broadband, is the issue costs for service, a perceived lack of relevancy, digital

illiteracy, or other factors? For county assessments on broadband access, adoption, and use, communities can visit Connect Michigan County Info//Explore Your Community.

- Determine digital literacy capabilities
  - Of the 12 percent of Michiganders that currently do not use broadband, many choose to not adopt because of an inability to use the technology available. Understanding the level at which potential employees can use broadband technology will offer great insight into the skillsets of a community's workforce. Communities must identify digital literacy rates among citizens to understand their ability and comfort in using a coworking space.
  - If digital literacy is indeed an issue for a community, leaders should find manners in which to train and educate citizens on technology skills. Identifying the institutions in a community that currently offer broadband training (such as senior centers or libraries) and organizing new training workshops can help to build a more educated workforce primed to take full advantage of a teleworking opportunity.

Step 2: Define the plan and develop partnerships

With clear planning, a defined set of expectations can be molded to best suit the needs of the community. By evaluating the community's expectations and how the center can meet its needs, a coworking space can be created that positively impacts the economic development and quality of life of an area.

- Set a clear, realistic, and consistent set of goals and objectives to guide project development.
- Provide a standard against which telework center success or failure can be measured.
- Determine if the project will be a long-term or short-term initiative. When long-term viability of the center is an objective, as opposed to short-term market research or demonstration, secure long-term financial commitments up front. Funding over five to seven years, with a business plan to achieve self-sufficiency before the end of that period, is desirable.
- Determine project scope and partners. In rural communities, a facility that can support multiple uses will likely be more successful. For example, a facility that serves as a small business incubator and drop-in shared office space with maker-related equipment for entrepreneurs will likely appeal to a wider audience in a rural community where the needs for any one of these types of uses alone may be too low to support a single-use facility.

Step 3: Market the plan to employers

One of the most important pieces of a successful coworking space is ensuring the employers nearby are willing to let their employees telecommute. The teleworking space plan should be marketed to major employers outside of the community that will be losing the physical presence of employees if they allow teleworking.

- Identify businesses outside of the community that employ the community's residents. For example, teleworkers at The Stream in Newaygo, Michigan (summary found in the previous section), are employed by Spectrum Health located in Grand Rapids, 50 miles away.
- Ensure these businesses will allow their employees to telecommute.
- Educate businesses on the benefits of telecommuting.
- Share case studies of successful coworking spaces in rural and tourism-driven communities.

Step 4: Market the plan to employees

Once businesses are on board with allowing employees to telework, the concept should be marketed to their employees. By educating the workforce on how teleworking can benefit their quality of life and alleviating any concerns such as loss of opportunity for on-the-job training or promotion, employers and the community can move forward with the coworking center logistics.

- Provide training opportunities for those concerned about digital literacy.
- Develop information, training, and possibly incentives to enable employees to take advantage of the telework option.

Step 5: Determine and secure funding, locations, materials, and staffing

Once the community, employers, and employees commitment to the plan has been set in motion, logistics regarding funding, infrastructure, and staffing can be discussed. The benefits of a public-private partnership in this step are great as the center looks to obtain the initial capital for launching the center. The overhead needs of the center will be very specific to the community's needs and demand for teleworking space, so options such as sharing a space with another organization should be explored as necessary.

- Evaluate the resources available through a public-private partnership.
- Determine the coworking center needs from an infrastructure and overhead perspective.
- Identify sources of funding and locations for the center; site selection criteria should be in accordance with the center goals and objectives and should seek to balance high-quality center features and nearby amenities with cost considerations. Additionally, in communities without sufficient demand to justify a center dedicated to teleworking, other organizations can fill this role until a critical mass is achieved. Examples of such locations include those that are already "closely coordinated with the delivery of public services and placed in already actively used premises, such as libraries, schools, or community centers" (Vitola, et al., September 2013). Other options include business support centers, start-up incubators, and entrepreneurial hubs.
- Private offices should be provided for permanent, security-minded tenant-employers. Semiprivate workspaces should be acceptable to drop-in users since they will take their work home with them at the end of the day.
- Consider the hiring of a full-time, on-site manager to handle administrative issues, technical support, and promotional activities for the center.

Step 6: Determine methods for self-reliance and sustainability without the assistance of future public dollars

Many of the successful coworking spaces analyzed in this paper utilize other sources of revenue to remain self-sufficient. Centers should consider what other services they can offer to increase their income and self-reliance.

- Identify other sources of revenue for the center other than space rental such as educational training workshops, business services to tourists, networking events, and other opportunities.

Step 7: Evaluate the Project

By setting benchmarks and expectations for success, a community can determine how the coworking space is benefiting the citizens and economic development of the area. This knowledge can allow the teleworking plan to be shaped and adapted to best meet the community's needs moving forward.

- Document and evaluate each new generation of telework center demonstrations. Much has been learned, but much remains to be discovered regarding the successful implementation of multiple-employer telework centers. It is important to determine what factors are important to all center operations and which are key only in certain situations and under certain circumstances.

SIGNIFICANCE AND IMPLICATIONS FOR MICHIGAN COMMUNITIES AND REGIONS

Telework spaces could provide effective solutions to addressing the employment and economic development needs among Michigan's distressed communities, particularly those in rural areas. Additionally, the public sector may be positioned to partner with other public and private entities to manage and encourage teleworking in rural and tourism-oriented communities.

In a 2011 special message to the Michigan Legislature, Governor Snyder stated that "[t]today, talent has surpassed other resources as the driver of economic growth" (Haglund, March 14, 2013). As such, teleworking has the potential to significantly impact Michigan communities and regions by providing long-term residents of distressed areas with access to worldwide employment opportunities, without the need to relocate. Through teleworking, communities are able to attract and retain talent, both permanent and temporary, to enhance economic development and catalyze community revitalization. For example, in the resort town of Traverse City, 20- to 30-year olds who grew up in the area and departed shortly after schooling to work elsewhere have been termed "boomerangs" (Lovy, December 21, 2012). With the necessary information technology for twenty-first century opportunities in marketing, web design, and other fields, many of these young professionals are returning to the area. In this manner, teleworking provides an avenue to wealth creation, reduced out-migration, and balances the demand for employment in economically deprived areas (Obra, et al., 2002).

According to Connect Michigan's research, empowering Michiganders to telework would provide a definite and measurable economic advantage to the state. For example, if each of the 1.1 million potential teleworkers in 2011 had made just the minimum wage working full time at that time, that would have represented an increase of nearly $16 billion dollars annually in household revenues statewide. Yet increasing the potential Michigan workforce is not the only benefit that the state would see from teleworking. According to a 2005 poll conducted by ABC News, *Time Magazine*, and *The Washington Post*, the average American commuted 32 miles per day for work (ABC News, February 13, 2005). This means that if Michigan employees were to telework 1.6 days per week, they would drive an average of 2,560 fewer miles per year. Based on data collected by AAA, this represents a statewide savings of $336.5 million for teleworkers in fuel and vehicle maintenance (based on average automobile operating costs of 17.74 cents per mile) (AAA, April 20, 2015).

Further, by establishing telework centers, Michigan is helping to future-proof the state workforce. Internet and related digital technologies are on an upward trajectory that has not yet reached full saturation and is likely far from having produced its full effect. According to Burette and Morisot,

> *… the decline of face-to-face practices is bound to be a slow, path-dependent social process. An enormous majority of today's labor force was educated in the pre-Internet era. But in the decades to come, baby boomers will leave command of the global economy to a generation who has never lived in the pre-Internet era, and whose members are more likely to embrace distant working practices, such as tele-work* (Brette, 2009).

Teleworking empowers Michigan workers to lend their skills to businesses that can be across town or across the globe, while allowing them to remain in their home community. No longer does an employer need to have a facility within an area in order for an employee to find a job within that locale. Additionally, temporary visitors are able to stay longer in a given community, increasing local revenue,

due to sufficient resources to connect back to their job elsewhere. Teleworking also provides an opportunity to incorporate certain demographics oftentimes disconnected from the traditional job market with meaningful employment, such as those who are disabled. Teleworking also has the capacity to benefit Michigan businesses by helping employers attract and retain the best workers from new labor pools, while reducing office occupancy and operating costs.

By implementing a telework model into an area, a community has a valuable tool to use in overcoming employment barriers and disparities in regional development. With rural telework centers, broadband can ensure citizens in these communities can participate in the twenty-first century economy, catalyzing economic development and community revitalization.

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APPENDIX – EXAMPLES OF TELEWORKING CENTERS

Outside of Michigan

Peepul 24, UK – For as little as 10 euros a day, residents in Launton, England can use the Peepul24 Business Centre. The center provides monthly networking opportunities and offers postal addresses, mail services, meeting space booking, and virtual personal assistants and telephone answering services. http://www.peepul24.co.uk/

The Surf Office – The Surf Office has two locations in California and Gran Canaria where like-minded teleworkers can use office space and then enjoy the surfing opportunities nearby. Centered on the idea of telecommuting from a desirable and tropical location, the Surf Office offers work space, accommodations, and leads retreats for businesses. http://www.thesurfoffice.com/blog/2014/11/23/rural-coworkings

The Residential Area-Based Offices Project (Neighborhood Telecenters Project [NTP]) is a multi-year project funded by the Federal Highway Administration and the California Department of Transportation to open a number of telecommuting centers around California and evaluate their effectiveness as a work arrangement. Fifteen telecenters were opened through the program. http://www.its.ucdavis.edu/wp-content/themes/ucdavis/pubs/download_pdf.php?id=547

The Candy Factory, Lancaster, PA: The Candy Factory is a membership-based coworking space established in 2010 in downtown Lancaster, Pennsylvania. The Candy Factory's mission is "to foster community and help spur the growth of small businesses in and around Lancaster City by offering the resources and support needed to encourage that growth." The Candy Factory attracts members from the city, as well as from around the county and beyond. The facility provides an "open space concept" with access to Wi-Fi and other shared resources, as well as opportunities to network and collaborate with a diverse group of professionals from all backgrounds. In addition to individual resources, the Candy Factory provides spaces for workshops and classes, utilizing the space to offer similar activities that achieve multiple goals.

Michigan

Atomic Object – This Detroit software company is opening up their doors to housing one new software startup. The benefits of the coworking relationship are great as both software companies gain the ability to work with other skilled and experienced designers and developers downtown.

Automation Alley – A technology business association in southeastern Michigan, Automation Alley offers seed funding, entrepreneurial resources, and business mentoring to help get your business going.

Bamboo Detroit – A perfect location in downtown Detroit offering shared desk space or personal desk space, Bamboo Detroit is a great choice for anyone who wants to join a coworking space in the city.

Blackstone Launchpad – A valuable resource for Wayne State University, this launch pad offers educational sessions, workshops, and networking to help your business grow.

Bizdom – A nonprofit requiring businesses to headquarter their company in the city of Detroit, this business incubator offers seed funding, mentoring, and the opportunity to receive future funding opportunities with the perks of working in an appealing and collaborative working space located in a newly remolded building.

Grand Circus – Located in Downtown Detroit nearby many other startups, Grand Circus is a tech training institute with a dedicated floor for coworking.

Green Garage – The Green Garage is a symbol of urban revitalization in Detroit – from the hardwood floors and carefully designed, sustainable environment, to the businesses working together to form a thriving community in Midtown. This workspace focuses on building a startup community that grows more organically rather than pushing for business acceleration.

IncWell – An incubator/private investment firm started by Roger Penske, it provides larger amounts of funding from around $25,000-$250,000, working space, and consulting for specific needs.

Macomb-OU Incubator – This incubator provides shared business services, incubator space, and equipment and technology support services in the areas of Defense, Homeland Security, and Advanced Manufacturing.

Metro Work Space – Located off of Eight Mile in Livonia, Metro Work Space offers all the usual perks of a shared space in an area that could use the development. Metro Work Space is a shared office facility with membership that includes amenities ranging from daily office needs such as paperclips, to an executive conference room with videoconference equipment, as well as copy, printing, Wi-Fi Internet, and fax capabilities (Luhtanen, November 27, 2012). Metro Work Space offers three levels of month-to-month membership at $99/month for Bronze; $149/month for Silver; and $349/month for Gold, with a 3-month minimum commitment and annual memberships available (Luhtanen, April 4, 2013). Access to the facility is dependent upon the membership level: Bronze members can access the space 9 a.m.-5 p.m. Monday through Friday; Silver members have extended access 7 a.m.-9 p.m., seven days a week. Gold Members receive a dedicated workspace (Luhtanen, April 4, 2013). Gold members are also able to use Metro Work Space as their business address, and Silver members can take advantage of this benefit for an additional cost (Luhtanen, April 4, 2013).

NextWave – Run by MIT graduates, NextWave is a technology incubator located in Troy, Michigan. NextWave is described as an "intense experience" building businesses rooted in science and math.

Office in Detroit – Office in Detroit is a shared space that offers a large and centrally located coworking space in the city. Users can pay by the day or by the month.

OU Incubator – A designated smartzone located on the campus of Oakland University, this incubator specializes in IT, medical devices, and clean energy centered around its Clean Energy Research Center.

Paperstreet – In Ferndale, this coworking space offers access for as low as $45 a month.

TechTown – Located in Midtown, TechTown partnered with Wayne State University to help Detroit startups and entrepreneurs grow in southeastern Michigan. TechTown offers small businesses workspace and work resources, as well as access to talent and funding networks.

Ann Arbor Spark – Ann Arbor Spark is a business accelerator program that aims to help small businesses with networking, applying for startup grants, and business consulting.

TechArb – TechArb is a startup community for University of Michigan students. Offering workspace, mentoring, and the opportunity to apply for grants, TechArb has quite the growing portfolio of tech businesses started in Michigan.

Tech Brewery – Tech Brewery in Ann Arbor is a place to work and network for a community of technologists, entrepreneurs, and start-ups. Tech Brewery workspaces start as low as $50-200 per month on a month-to-month basis.

Tech Transfer – Focused on transferring technology to the marketplace, Tech Transfer works with researchers, entrepreneurs, and University of Michigan students to provide services needed to develop and market a product.

The Center for New Enterprise Opportunity – Also known as the NEO Center, this incubator was formed to support small businesses and foster creativity in Lansing. It offers shared workspaces, networking opportunities, workshops, and more.

The Hatch – Michigan State University, along with the MSU Entrepreneurship Network, the City of East Lansing, and LEAP, came together to form The Hatch program. Located right on campus, The Hatch offers a creative coworking environment. Local entrepreneurs can help one another and learn how to get their businesses started.

Incu-BaKe – Since opening in July 2011, Incu-BaKe has helped almost 40 small businesses either get started or transfer to the facility. A 2,000 square foot kitchen located in Holt, Michigan, the space provides commercial kitchen equipment and workspace for food entrepreneurs.

Mid Michigan Innovation Center – The center serves as an accelerator for startups in Midland, Michigan.

Technology Innovation Center of Lansing – The Innovation Center is a business accelerator for technology startups that provides 7,000 square feet of office space for startups.

The Factory – Launched in 2007, "The Factory is *the* pioneer in coworking in West Michigan" (Rumery, June 19, 2014). It is a coworking space in downtown Grand Rapids with all the benefits of an office, without the office feel. While the space is available for all, it is particularly suited for small teams, such as service teams; individuals, such as freelancers; and gatherings, such as corporate innovation teams.

The Starting Block – Located outside of Grand Rapids, this incubator is a non-profit, regional development dedicated to helping small businesses in the food or natural resources sector.

LINC Community Revitalization Incubator – LINC's mission is to connect community-organizing efforts with real estate development. This business incubator is a 3-year business training program for existing startups in need of business management guidance.

Uptown Kitchen – Uptown Kitchen offers affordable commercial kitchen space. First opened in 2012, the kitchen is located in Eastown, in the Uptown Business District of Grand Rapids.

Start Garden – Start Garden offers seed funding of $5,000 for two ideas every week. Connecting business and resources in one place, they are focused on building an innovative ecosystem in Grand Rapids.

West Michigan Science & Technology Initiatives – This group provides two incubators in Grand Rapids, both focused on commercializing new products. The incubators are located on Michigan Street and Monroe Avenue, and house high-tech incubators for life science, medical devices, high-growth startups, and small businesses.

Blue35: Blue35 is a collaboration between Rockford Construction and Haworth (Rumery, June 19, 2014). The membership fee is $195/ week, with daily, monthly, and longer-term leases available as well. Membership includes access to the coworking space, offices, conference rooms, and Bluescape's digital-screen technology for virtual workspaces. Additional amenities for coworkers are 24/7 building access, unlimited coffee, high-speed Wi-Fi, copier/printer/scanner, kitchenette, free use of small shared meeting rooms, special prices for large conference rooms, on-site member services staff, and members-only programming. Among the various members at the Blue35 are large companies seeking a downtown presence and access for employees.

Southwest Michigan Innovation Center – For bioscience businesses, the Southwest Michigan Innovation Center offers laboratories and office space, business and marketing plan development, common scientific and business equipment, and is ideal for anyone interested in scientific entrepreneurial endeavors.

Michigan Alternative & Renewable Energy Center – On Grand Valley State University's Campus, this incubator is focused on supporting renewable and alternative energy. MAREC houses many new energy companies but also offers a wide range of educational programs.

SPACE – SPACE hosts architects, graphic designers, journalists, photographers, and urban planners. Users can rent a desk for a daily or weekly rate, or pursue a full membership for $300/month. Private rooms are also available for rent for events, etc. According to owner Nate Elkins, "[i]t's the same as a regular office, except for the fact that everyone is doing different things" (Barr, February 26, 2013).