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On-site Technology Training for Small Rural Michigan Businesses

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INTRODUCTION

I would have loved to have someone teach me the best way to use point-of-sale and accounting software. It would have saved me a lot of time and headache. I probably would have made the switch [to using point-of-sale and accounting applications] sooner if I knew I had some sort of local support available – Lindsey Potter, owner of The Yarn Garden, Charlotte, Michigan (Potter, 2012).

Small businesses are the life-blood of economic growth in Michigan. According to the U.S. Census, 86% of Michigan business establishments employ fewer than twenty workers. This translates to small businesses providing nearly one-third of the total jobs in Michigan (30% or approximately one million job positions) (U.S. Census Bureau 2010). As a growing number of Michigan residents go online, small businesses will increasingly rely on high-speed and dependable Internet connections to stay competitive and take advantage of growth opportunities. Small businesses that are not currently using the Internet will need to evaluate their current business practices and understand how this technology can benefit their businesses. While some business owners may not have adopted Information and Communications Technology (ICT) because of a lack of access, others may simply be unwilling or hesitant to adopt a new technology. Educating these small business owners on the use and benefits of ICT may be crucial in keeping this sector of the economy competitive in the global marketplace. For the purposes of this research, small businesses are those with fewer than twenty employees.

Broadband, which can be defined as high-speed Internet access that offers users services at greater speeds than “dial-up” service, has the potential to provide benefits to small businesses that include better advertising and marketing opportunities, increased sales, and the ability to advertise jobs and attract a better workforce (Federal Communications Commission, 2012); (Connected Nation, 2012). Connected Nation research has shown that “broadband connected” businesses bring in approximately \$300,000 more in annual median revenues than “non-broadband adopting” businesses (Connected Nation, 2012). In Michigan, broadband connected small businesses report annual median revenues of \$300,000, compared to \$100,000 among those that do not use broadband. However, many small businesses in Michigan are currently not taking advantage of the opportunities broadband can provide to their businesses. Only two out of three (67%) Michigan small businesses use broadband, compared to almost 80% of larger Michigan businesses. More than four in ten Michigan small business owners that do not subscribe to broadband believe that they do not need broadband or are getting by without it, while 15% do not even use computers for their businesses.¹ Training that educates business owners on the importance of computers, the Internet, software, and other technology that is enhanced by broadband and increases their comfort levels with these important business tools has the potential to overcome these barriers to adoption.

This research seeks to understand and curate technology training models for rural small businesses. Rural businesses make up nearly one third of the businesses in the state of

Michigan. Only 60% of rural small businesses have adopted broadband, compared to the statewide average of 67%.¹ Small businesses are woven across all economic sectors, some of which rely heavily on technology and connectivity for their primary product or service. These “high-tech,” or technology intensive establishments, including web developers and many other technology-based businesses, are not the focus of this study. This work focuses on implementable strategies for training rural small businesses across all sectors in the use of technology to support their primary activity. For example, training an antique retailer in a rural small town to design an e-commerce website to begin selling items online, or showing a “mom and pop” restaurant how to use social media to stay connected with existing customers and attract new patrons.

Currently, there are several technology training options available to Michigan small businesses including workshops, conferences, private-sector consultants, online webinars, and networking events. With the exception of private-sector consulting, most training models available require a small business owner or staff to interact with a trainer either via an online connection or at an off-site function (off-site meaning the person receiving training must travel from their business to a different location for training). This research posits that on-site (at the small business itself) training is a more effective technology training model and could result in higher technology adoption rates than off-site training. On-site technology training allows business owners and staff to:

- Remain at their location during training in case of emergencies;
- Greatly reduce travel time and expense for the business owner;
- Receive customized training on business-specific topics instead of generalized advice from a conference session or workshop;
- Learn new software and applications using their own equipment, which can provide business owners with an increased level of comfort with their computers and a better understanding of the capabilities of these machines; and
- Train additional staff that might not otherwise be able to attend an off-site workshop.

In summary, this research seeks to:

- Establish the current state of broadband and technology adoption among Michigan’s small businesses, particularly those in rural areas;
- Present a review of training models’ literature;
- Explore technology training models available to small businesses in Michigan;
- Discover other forms of technology training models from across the United States; and
- Curate technology training best practices and establish a framework for local implementation.

Technology Adoption among Michigan Small Businesses

The growth of the knowledge economy over the last three decades has sparked an economic revolution where information and knowledge have become the major factors controlling wealth creation. Information has become a commodity that can be created and sold for profit, and economic restructuring has created a society where an information based “space of flows” takes precedence over a territorial based “space of places.” (Castells, 1993). The knowledge economy has, and continues, to be facilitated by the advancement of Information and Communications Technology (ICT). With more powerful technology and communication becoming increasingly mobile, innovation and knowledge development can occur anywhere, lessening an establishment’s reliance on physical location (Frederick, 2006). Broadband and technology adoption help level the business playing field. While location and access to resources still factor into a successful business plan, small and large, rural and non-rural businesses that have adopted broadband can utilize the same set of digital tools and applications to grow and thrive. This research is focused on small rural businesses that do not rely on technology as their primary product or service, but on those that can utilize the benefits of technology to enhance and support their primary activity.

Broadband access has the potential to assist rural areas in the transition to an information-based global economy and also help in local business development (LaRose et al., 2008). With a broadband connection, small rural businesses can conduct sales outside of their normal geographic scope and high speed Internet can facilitate more streamlined processing of large sales transactions (Pociask, 2005). It may also provide benefits to rural businesses by facilitating other operational efficiencies such as telecommuting, teleconferencing, and video conferencing (Federal Communications Commission, 2009). The highly rural agricultural sector may particularly see benefits, as a positive correlation has been found between the county-level percentage of farmers with high-speed Internet and farm profits (Community Policy Analysis Center, 2011). Connected Nation research conducted in 2008 found that a seven percentage point national increase in broadband utilization could result in an annual economic boost of \$134 billion, including saving or creating 2.4 million jobs. In Michigan alone, a seven percentage point increase would result in a boost of \$4.6 billion annually and save or create 76,000 jobs (Connect Michigan, 2011).

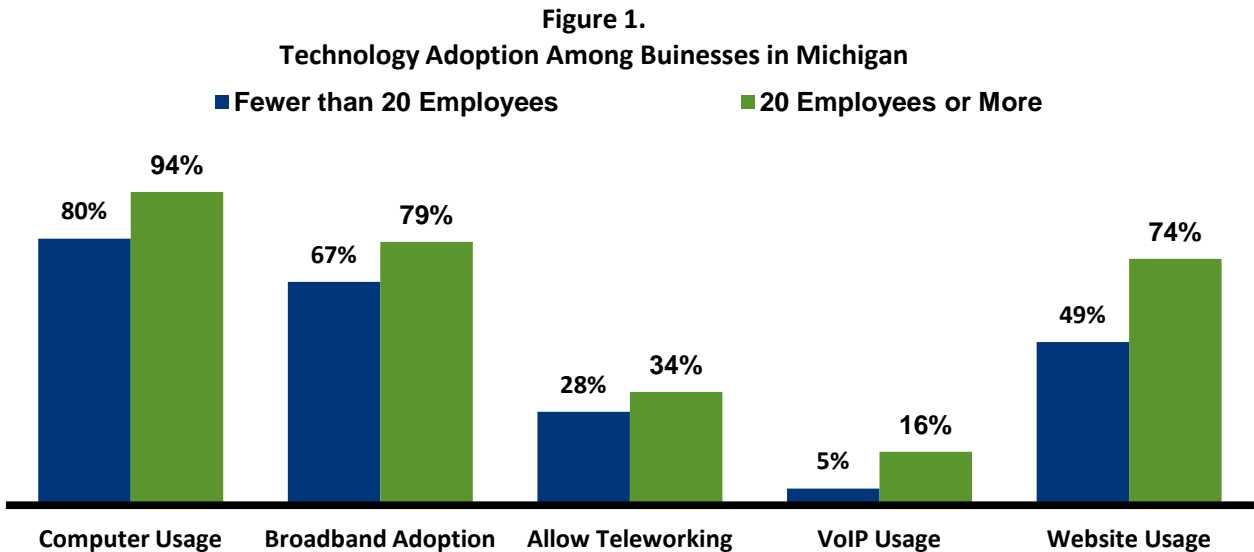
A clear hierarchy emerges when discussing technology adoption among small businesses: first, computer ownership and use; second, Internet connectivity (areas need broadband access and residents and businesses need to adopt broadband); and lastly, application and use. It could be argued that the application and use of technology to grow a small business does not necessarily require an Internet connection. While that may have been true a decade ago, the global knowledge economy and an increasingly networked society make an Internet connection vital for small businesses to grow and thrive. Broadband adoption is an avenue towards more advanced uses of technology including social media, teleworking (or telecommuting), website development, automated accounting and inventory, off-site file backup and security, point-of-sale applications, and many others.

While specific programs and applications for small businesses can be argued, broadband-enabled technology adoption primarily benefits small businesses in three ways:

- Increased revenue via more thorough connections with existing customers while accessing a vast marketplace of potential customers;
- Free or low-cost advice and information sharing via access to the collective knowledge and experience of others at a global scale; and
- Decreased expenditures from operational efficiencies.

Connect Michigan surveyed Michigan business establishments to measure their current state of technology adoption and usage.ⁱ The following summarizes the state of broadband and technology adoption among small businesses with fewer than twenty employees.

Businesses with fewer than twenty employees are significantly less likely than larger businesses to adopt and use several types of technology that could help increase revenues



and efficiency (Figure 1). One out of five Michigan business establishments with fewer than twenty employees (approximately 38,000 businesses statewide) does not use computers. About two out of three Michigan businesses with fewer than twenty employees use broadband, which is significantly lower than that among larger Michigan businesses. Rural small businesses are even less likely to adopt broadband as only 60% of rural establishments with twenty employees or fewer currently use broadband. Statewide, approximately 63,000 small Michigan businesses are not benefitting from broadband. In addition, less than one-half of Michigan small businesses have websites, and they are also significantly less likely to allow their employees to telework or use Voice over Internet Protocol (VoIP) to communicate. Website use among rural small businesses is even lower; only 43% of these rural establishments have websites. This

disparity puts small businesses, particularly those in rural areas, at a distinct disadvantage compared to their larger competitors with greater adoption of technology.

How Small Businesses Use Broadband

Although nearly one-third of Michigan businesses with fewer than twenty employees do not use broadband, others use broadband to help make their businesses more efficient, connect with their regular customers, and reach out and advertise their wares to new customers.

Nearly four out of five broadband-connected businesses with fewer than twenty employees (79%) go online to buy or place orders for products or services, the most popular online application among these businesses (Table 1).

Table 1. Broadband Usage among Broadband-Connected Michigan Businesses with Fewer than Twenty Employees	
Purchasing or placing orders for products or services	79%
Communicating with your current customers	72%
Researching ways to make your business more efficient	69%
Marketing and advertising of products and services	61%
Billing or bill payment	54%
Selling, or accepting orders for products or services	44%
Providing customer support for your products or services	39%
Bidding on contracts	31%
Advertising current job openings or accepting job applications	29%
Accepting real time payments such as credit card and debit payments	25%

Many small Michigan businesses use broadband to help themselves grow and increase their sales. Nearly three out of four broadband-connected Michigan businesses with fewer than twenty employees (72%) stay in touch with their current customers via the Internet, while 61% advertise their products online to find new customers.

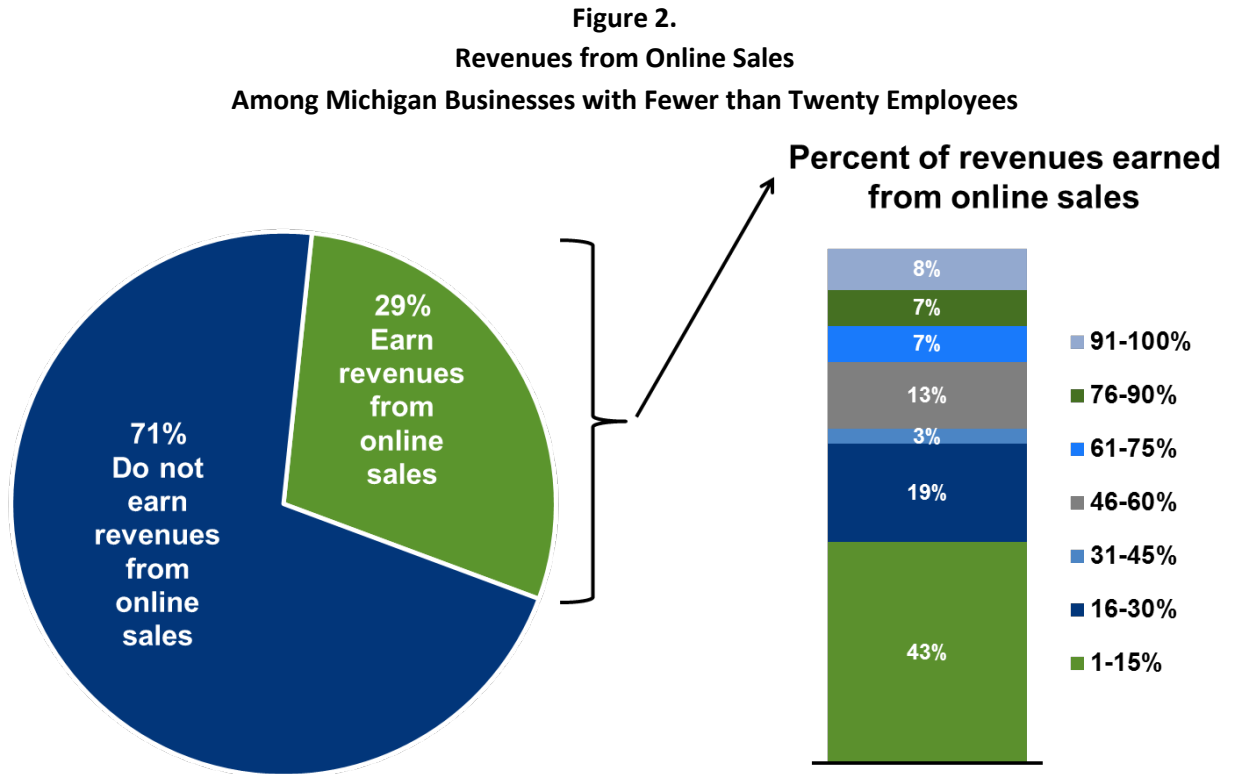
More than two out of three of these businesses (68%) use broadband to research ways to make their businesses more efficient. Plus, one in four broadband-connected Michigan businesses with fewer than twenty employees accepts payments online, and 44% sell or accept online orders for their goods and service. The result of these applications can be seen in those businesses' bottom lines: broadband-connected Michigan businesses with fewer than twenty employees report median annual revenues of approximately \$300,000, compared to just \$100,000 among similarly-sized competitors that do not use broadband.

Online Revenues among Small Michigan Businesses

Broadband-connected small businesses have several advantages over their competitors who are offline – they can inexpensively advertise to a wider audience; communicate easily with employees, customers, and suppliers; and simplify buying and selling goods

and services. For small businesses that sell their goods and services online, this translates into increased sales revenues.

Statewide, nearly three out of ten (29%) businesses with fewer than twenty employees earn at least some of their revenues from online sales. Figure 2 highlights the percent of revenues these businesses earn from online sales; on average businesses with fewer than twenty employees earn about one-third (34%) of their revenues from online transactions.



Based on those businesses' self-reported annual revenues, this equates to a median annual value of \$190,000 in online sales. Statewide, this translates into nearly \$6.9 billion in online revenues for Michigan businesses with fewer than twenty employees.

Primary Barriers to Broadband Adoption among Small Businesses

Despite the numerous advantages to using broadband for business expansion, approximately 63,000 small Michigan businesses still are not connected. While the reasons for not subscribing vary, the result is the same: limited access to customers, revenues, and opportunities.

Among Michigan businesses with fewer than twenty employees that do not subscribe to broadband, the most often-cited barrier to broadband adoption is the belief that they do

not need broadband, or they are getting by without it (Table 2). More than two out of five of these businesses (43%) cite this perceived lack of need as their main barrier to broadband adoption. Another 15% do not even use computers.

Table 2. Barriers to Broadband Adoption among Michigan Businesses with Fewer than Twenty Employees	
We don't need it or we are getting by without it	43%
Our business does not use computers	15%
Broadband service is not available in our area	10%
The monthly cost of service is too expensive	5%
It would be too much of a distraction to employees	4%
It would take too long to train our employees	4%
It poses a security risk	2%
The installation cost is too expensive	2%
It is too complicated	1%
Other	5%
Don't know/Refused	9%

Availability also plays a role in broadband adoption among small businesses – if high-speed Internet is not available at a business's location, they will not have the option of subscribing even if they recognize the potential benefits of being online. This is the main reason reported by one in ten small Michigan businesses that do not subscribe – this translates into approximately 6,000 Michigan businesses that could go online if broadband were available to them.

A lack of personal broadband access and adoption might also impact small business broadband adoption, as business owners with limited personal experience with broadband may not see it as a viable option. Rural areas of Michigan have only a 56% residential broadband adoption rate, compared to the statewide average of 61%, and over 107,000 rural Michigan adults report that availability is the main barrier to their adoption of broadband.¹¹

Summary

Small businesses in Michigan represent entrepreneurial opportunities, thousands of jobs, and billions of dollars in annual revenues for the state. Unfortunately, many of these small businesses are missing opportunities to grow because they are not adopting broadband and utilizing applications to enhance their business.

When small businesses do not adopt broadband, they lack the ability to sell and promote their products and services anywhere in the world, the ability to attract the best employees from a global workforce, and the ability to access a wide variety of resources to make their business run more efficiently. As a result, small Michigan businesses that do not subscribe to broadband report revenues which are considerably lower than their broadband connected competitors of the same size. While broadband-connected

businesses may also be more innovative in other areas that increase revenue, technology adoption and innovation may work together to enhance the profits of small businesses.

For some businesses, the belief that broadband would not help their business is the main reason they do not adopt. Others feel that since they have always operated without broadband and technology, they can continue to do so. In tough economic times, broadband service can mean the difference between surviving and thriving. Building awareness of the benefits of broadband and technology for small businesses, training owners and staff on its use, and thereby increasing the adoption of technology among small businesses can strengthen the state's economy and make Michigan businesses stronger competitors in the global marketplace.

Review of Training Model Literature

On-site, hands-on technology training has the potential to provide many benefits to businesses of all sizes. These benefits could include more customizable training options, the ability to provide real-world solutions for business training needs, lower training costs, consistent learning experiences for all employees, and less downtime in the training process (New Horizons, 2012a). On a practical note, training on-site allows employees to remain at their own location during emergencies and may limit travel time and expenses. On-site training could also provide opportunities to train staff that would not otherwise be able to attend an off-site workshop. Employees participating in on-site training may also be given the opportunity to learn new software and applications using their own business equipment.

Many small rural businesses are not fully taking advantage of the Internet, making technology training of particular importance to this sector of the economy. In 2004, Robinson, a researcher in the business department at Pennsylvania State University, found that rural business owners used the Internet for business purposes less often than their non-rural counterparts; rural business owners were nearly two times as likely to say that they never used the Internet for their businesses (Robinson, 2004). This is supported by 2011 Connect Michigan research which shows that only 60% of rural business owners in the state have adopted broadband, compared to 72% in non-rural parts of the state.ⁱ Rural areas also often find it difficult to attract technology intensive businesses, as there is a lack of an appropriately educated workforce and a lack of infrastructure (U.S. Small Business Association, 2006). Additionally, research has found that small rural business owners' perceptions about the ease of use of a new technology such as broadband would significantly impact whether they would use the technology (Shore, 2011). Training that makes new technologies seem less daunting may be a central component of increasing technology use by small rural businesses. Technology training programs may also help create a more digitally literate workforce in rural areas that may have an impact on business development.

On-site training opportunities could be beneficial and of interest to small businesses in rural areas that do not have access to conveniently located training sites or the resources to send employees to trainings. While not all businesses in rural areas currently have broadband access to facilitate these trainings, on-site seminars that utilize portable technology such as laptops or other mobile devices to do training without an Internet connection may be a viable option. Small businesses in general are interested in flexible training programs. An analysis of the 2001 U.S. Small Business Association's Training Program Survey found that respondents valued training programs that were customizable and had flexible times, delivery methods, and locations (Berger et al., 2001). Rural small businesses also value flexibility in location and topics of trainings. A 2005 focus group examined broadband and technology use by small business owners and managers in rural West Virginia. Most participants felt that the Internet was an important tool in their businesses' competitiveness and growth. There was strong interest in technology training programs in general, and business owners cited a lack of geographically close

training opportunities as a reason for this interest. Participants wanted programs that would meet their particular needs and be industry specific. The type of program, cost, and location were all important considerations in whether they would attend or send employees to a training program; if programs were reasonably priced, conveniently located, and on a topic of interest to the business owner, most would attend or send employees to be trained (West Virginia Chamber of Commerce, 2005). In a survey of rural businesses in Great Britain, Bennett and Errington found that 56% of managers felt that releasing staff from work was a main constraint to providing any type of employee training. Nearly one third (30%) found that distance and transport was a constraint, while almost one quarter (23%) felt that the lack of suitable training programs negatively impacted their ability to provide training. This research suggested that more flexible training approaches may be successful in meeting the needs of small, geographically-dispersed rural businesses (Bennet and Errington, 1995). Bailey and Preston analyzed a needs assessment survey of 258 small businesses in rural Nebraska and found that there was a strong interest in technology-related training. However, rural small businesses were most interested in specific sessions on topics such as marketing, e-commerce, and website development. They also had a strong preference towards workshops or one-on-one training (Bailey and Preston, 2008). On-site training programs may be best to achieve the customization, cost, and location needs of small rural businesses.

While the research on the benefits of on-site technology training to small businesses is not definitive, there is evidence to support these sorts of training programs may best meet the needs of both businesses and their employees.

Research has suggested that hands-on training in general is an effective way of educating small business owners and employees. Onasch et al. examined how to help small businesses implement 'toxics use' reduction techniques. They found that on-site demonstrations of techniques and hands-on training opportunities were successful in promoting cleaner technology to these businesses (Onasch et al., 2011). Bauer evaluated the outcomes of two entrepreneurship training programs from women small business owners in Vermont. Participants cited the hands-on aspect of these training programs as key to helping them start businesses (Bauer, 2011). On-site technology training may be more of a challenge for small businesses that are still in the process of adopting technology and have limited access to computers and the Internet, but the hands-on benefits of this type of training may outweigh these logistic concerns.

Lin and Ye provide a practical framework for small and medium businesses to achieve their technology specific training goals. They assert that businesses need to create customized analyses of technology training needs based on what technology skills will help an enterprise compete in the market, the organizational structure of an enterprise, the technical requirements of an enterprise, and an analysis of individual employee training needs (Lin and Ye, 2011). This organizational analysis should also include an understanding of how current procedures will need to be updated as an organization changes its use of ICT. Lin and Ye also suggest that in house training institutes may be too expensive for many small and medium enterprises, causing many businesses to rely

on external training solutions. However, they also believe that good internal training is important, as it can focus on the different learning characteristics and processes of individual enterprises (Lin and Ye, 2011).

Research has also supported the effectiveness of on-site or in-house technology training in a variety of other work environments. Fitzgerald and Cater-Steel studied the effectiveness of a low-cost in-house technology training strategy enacted by a local government authority in Australia. This training strategy utilized key in-house users of software to provide training and support for software packages. They found that in-house training courses were popular due to convenience, the ability to tailor training to local work needs, and the social aspects of training with co-workers (Fitzgerald and Cater-Steel, 1995).

Kinnaman studied technology training of teachers and asserted that in-house training and expertise in technology was important for staff development. He recommended coaching and modeling techniques that feature in-house technology staff developers working with a teacher in the classroom and stressed the importance of hands-on experience (Kinnaman, 1990). Pope also suggested that in-house technology training of teachers may be better than more general technology training seminars (Pope, 1996).

Many characteristics of the best methods to deliver technology training to business employees could best be achieved in on-site settings. Research has shown that traditional training methods, such as seminars and classroom training may not be the best method of delivering technology skills to learners. Much business technology training research has focused on end-user training, which is concerned with teaching users the effective use of computer applications. End-user training has typically been built around social cognitive theory, which states that learners must not just be exposed to a behavior but also actively explore, manipulate, and influence their own environments in order to effectively learn. This can be done via behavior modeling (seeing a trainer perform a new activity) or enactive learning (based on learners practicing or rehearsing a modeled behavior) (Gupta and Huber, 2010). While these types of learning experiences could be achieved in off-site settings, on-site technology training for employees may provide more opportunities to take advantage of this type of social cognitive learning.

Another method of end-user training is collaborative learning, which allows learners to work together to achieve shared goals (Gupta and Huber, 2010). On-site technology training could make collaborative learning even more beneficial, as it would allow co-workers to learn technology skills together, rather than participating in activities with unfamiliar classmates in an off-site computer class.

Most end-user training is achieved through computer based training, where the computer is a tool for teaching and learning. Asynchronous learning networks (ALN) involve using computers to work with remote training resources and coaches, without simultaneous online training (Gupta and Huber, 2010). This sort of training could easily be achieved on-site in small rural businesses. Computer Supported Collaborative

Learning (CSCL) involves synchronized learning technology such as group support systems (Gupta and Huber, 2010). On-site, business specific CSCL might provide added benefits, such as a group support system customized to a particular business.

On-site training programs allow companies to have more control over the training environment, which may have a positive impact on training effectiveness. In-house training set ups may be naturally more comfortable for staff and also provide better opportunities for managers to control for employee comfort level. Djamasbi et al. found that positive mood has an influence on technology acceptance and suggested that training environments that enhance trainees' moods (by providing a comfortable setting, for example) could be important to the success of technology training sessions (Djamasbi et al., 2010).

In general, on-site training may allow small rural businesses to provide more and better training opportunities to employees. Conducting training on-site would eliminate concerns about the logistics and cost of getting employees to training sites and being out of the office for extended periods of time. Additionally, on-site training would allow business owners to have more control over the process and to customize training to best meet the needs of their organization.

Small Business Technology Training in Michigan

Helping small businesses succeed is not a new concept. The United States Small Business Administration (SBA) has been working to promote small business development since the mid-Twentieth Century. Started as the Reconstruction Finance Corporation (RFC) in 1932, the SBA, (founded in its current form in 1953), has been focused on its mission to, "aid, counsel, assist and protect, insofar as is possible, the interests of small business concerns" (U.S. Small Business Association, n.d.b). While the SBA functions at a national level, several statewide and regional efforts have been sponsored and inspired by their efforts. These organizations offer supportive environments, resources, and counseling on anything from writing a business plan to loans and grants for startup operations, business law, and marketing.

The following summarizes the extent of on-site technology training for small businesses by organizations in Michigan:

- The majority of small business training in Michigan is centered on three primary topics:
 - business plan development;
 - marketing; and
 - financing.
- The primary means of delivery for technology-related training in Michigan includes online webinars and centralized workshops and events. The Michigan Small Business & Technology Development Center provides the majority of off-site, in-person workshops and events related to technology training, while a myriad of other organizations host online webinars on technology-for-business topics. Unfortunately, businesses without existing technology and broadband connections cannot benefit from online content.
- On-site, hands-on technology training in Michigan is conducted primarily by informal means; no centralized training of this type is currently offered by non-private sector entities. Anecdotal evidence suggests small business owners aware of the benefits of technology often seek assistance and training from friends, family members, and fellow business owners.

The following contains profiles of organizations and resources available to small businesses in Michigan at a statewide level, with special emphasis on the availability of technology training.

Michigan Small Business & Technology Development Center

The Michigan Small Business & Technology Development Center (MI-SBTDC) enhances Michigan's economic well-being by providing counseling, training, research and advocacy for new ventures, existing small businesses and innovative technology companies. With offices statewide, the MI-SBTDC positively impacts the economy by strengthening existing companies, creating new jobs, retaining existing

jobs, and assisting companies in defining their path to success (Michigan Small Business & Technology Development Center, n.d.)

The MI-SBTDC began in the mid-1990s as a collaboration of several programs, obtaining accreditation as a Small Business & Technology Development Center from the Small Business Administration in 2003. The MI-SBTDC is headquartered at Grand Valley State University in Grand Rapids, Michigan and supports twelve regional offices and over 30 satellite offices, each providing counseling and training to small business owners. The MI-SBTDC is funded, primarily, by the US-SBA, and offers several programs including one-on-one counseling, events, workshops, and a network of business resource centers.

In 2011, the SBTDC counseled 6,273 businesses resulting in 2,618 new jobs created by those receiving counseling (Michigan Small Business & Technology Development Center, 2011). One-on-one business counseling is offered to any Michigan small business on a wide array of topics including loans, market studies, business and strategic plans, and financial analysis. The MI-SBTDC has three teams of counselors specialized in technology, growth, and manufacturing. The Manufacturing Assistance Team (MAT) began in 2009 as a response to the economic crisis that impacted the manufacturing sector heavily. MAT works to assist existing manufacturing establishments with financial issues, budgeting, and scenario planning. Similarly, the MI-SBTDC Tech Team was created in partnership with the Michigan Economic Development Corporation to assist technology-oriented businesses with resources and counseling. Assistance includes intellectual property guidance, venture capital, management, strategic alliance building, and marketing, among others. The Tech Team is primarily focused on the commercialization of technology, not the implementation of technology-based solutions (Michigan Small Business & Technology Development Center, 2011).

The adoption and use of technology for small businesses is not a focus of the MI-SBTDC one-on-one counseling. While the use of technology during a one-on-one counseling session may be covered when discussing a business plan or marketing, counselors do not provide business owners with technology training. Counselors often make recommendations for software, equipment, and applications, but business owners are often referred to third-party private sector technology providers for sales, setup, and training.

Along with one-on-one business counseling, the MI-SBTDC offers several events and workshops for business owners and staff to learn new skills. Topics range from starting a business and writing a plan to branding and marketing. Several technology-oriented events are offered including Quickbooks Essentials, LinkedIn for Business, Social Networking for Small Businesses, and the Small Business Social Symposium. The Social Symposium is a half-day program designed to expose small businesses owners to a wide variety of topics including digital marketing, successful web design, Facebook advertising, and customer service in the digital world. Workshops such as these offer

technology training to small businesses in an off-site, workshop or conference setting, requiring attendees to travel from their business to attend.

The MI-SBTDC, along with the Detroit Regional Chamber, Michigan Economic Development Corporation, Small Business Association of Michigan, Service Corps of Retired Executives (SCORE), Southwest Michigan First, Intuit, and the Michigan Minority Supplier Development Counsel, have partnered with Google to create the Michigan Get Your Business Online (MI-GYBO) program. MI-GYBO offers free website design and hosting tools to Michigan small businesses (Michigan Get Your Business Online, n.d.). Connect Michigan research shows that more than half (51%) of Michigan businesses with less than twenty employees do not have a website. While small businesses can design, build, and launch their free website directly from the MI-GYBO website, the MI-SBTDC hosted hands-on workshops throughout the state in 2012 to assist and encourage less technology-savvy business owners to create a website.

Interviews with the MI-SBTDC revealed that hands-on, on-site technology training for small businesses is provided by more informal means. Through anecdotal evidence, when it comes to learning new technology or applications, small business owners often turn to friends, family members, and fellow business owners for this training (Kaiser, 2012). This type of training, however, would appear to benefit only those small business owners that are aware of various hardware and software solutions for their business and understand the benefits of adopting such technology (e.g. expanded customer base, increased revenue from online sales, reduced overhead, etc.). Business owners may not be inclined to ask for assistance if they are unaware of these benefits.

The Michigan Small Business & Technology Development Center is the state's foremost trainer of small businesses. One-on-one counseling, workshops, and conferences help small businesses start, thrive, and grow. While technology implementation training opportunities are offered via off-site events, hands-on, on-site technology training is not available for small businesses.

Small Business Association of Michigan

The Small Business Association of Michigan (SBAM) is focused solely on serving the needs of Michigan's small business community. Founded in 1969, SBAM is dedicated to removing the legislative, regulatory, economic, or legal barriers to small business success (Small Business Association of Michigan, n.d.). SBAM is a membership-based non-profit organization advocating for and keeping small businesses informed of issues by which they are impacted. While SBAM does not provide technology training directly to its members, the organization has partnered with NuWave Technology Partners, a private-sector telecommunications consulting service with network and information and technology solutions for small businesses. SBAM has offered technology webinars in conjunction with NuWave in the past and is also a partner in the Michigan Get Your Business Online program.

Michigan Economic Development Corporation

The Michigan Economic Development Corporation (MEDC) is a public-private partnership serving as the state's marketing arm and lead agency for business, talent and jobs, tourism, film and digital incentives, arts and cultural grants, and overall economic growth. MEDC offers a number of business assistance services and capital programs for business attractions and acceleration, economic gardening, entrepreneurship, strategic partnership, talent enhancement and urban and community development. MEDC, founded in 1999, also developed and manages the state's popular Pure Michigan brand (Michigan Economic Development Corporation, 2012).

MEDC's business assistance is focused primarily on diversification, exporting, site selection, economic gardening, business to business networking, and retention and relocation tools. While they do not provide direct training to small businesses, they often partner with the MI-SBTDC and similarly aligned organizations when the need for such training arises.

Regional Economic Development Entities

Michigan is home to several local and regional economic development organizations. Several offer some form of training to small businesses in their operating geographies. Training opportunities offered by these organizations include starting a small business, marketing, entrepreneurship, business ethics, energy efficiency, inter-government cooperation, and contracting and procurement, among others. While by no means an exhaustive list, examples of organizations offering training include Ann Arbor SPARK (Ann Arbor USA, 2012), Lakeshore Advantage (Lakeshore Advantage 2012), Middle Michigan Development Corporation (Middle Michigan Development Corporation, n.d.), Northern Lakes Economic Alliance (Northern Lakes Economic Alliance, 2012), and the Upper Peninsula Economic Development Alliance (Upper Peninsula Economic Development Alliance, 2010).

Small Business Technology Training Models Nationally

Small business technology training programs nationally and in other states are not so dissimilar from those available to Michigan businesses.

- On a nationwide scale, online self-paced technology training is available from the Small Business Administration and several partnering organizations. SCORE offers one-on-one business counseling from a network of retired executives organized around chapter offices throughout the country.
- Public-private partnerships are the favored model of training in several states. Partnerships have been created in both New Jersey and California to provide workforce computer training. While these programs are not directly providing training to small businesses with the purpose of using technology to grow and thrive, a digitally literate workforce is imperative for implementing technology solutions.
- Partnerships in New Mexico, Arizona, and Tennessee provide technology training to small businesses via off-site workshops and events at local libraries. Training topics include Microsoft Office, social media, and e-commerce.
- Technology training targeted to small rural businesses is provided by educational and economic development entities in Vermont and Minnesota.
- One organization has created a nationwide network of non-profits aimed at providing customized technology training to Latino entrepreneurs.
- The City of Chicago has created a program aimed at assisting small and medium-sized local businesses to become profitable and sustainable through technology access, adoption, and use.
- Private-sector technology partners.

The following profiles several national and non-Michigan state examples of technology training for small businesses:

United States Small Business Administration

The U.S. Small Business Administration (SBA) was created in 1953 as an independent agency of the federal government to aid, counsel, assist and protect the interests of small business concerns, to preserve free competitive enterprise and to maintain and strengthen the overall economy of our nation. We recognize that small business is critical to our economic recovery and strength, to building America's future, and to helping the United States compete in today's global marketplace. Although SBA has grown and evolved in the years since it was established in 1953, the bottom line mission remains the same. The SBA helps Americans start, build and grow businesses. Through an extensive network of field offices and partnerships with public and private organizations, SBA delivers its services to people throughout the United States, Puerto Rico, the U. S. Virgin Islands and Guam (U.S. Small Business Association, n.d.a).

The SBA has four programmatic functions; 1) access to capital, 2) entrepreneurial development, 3) government contracting, and 4) advocacy. In regards to training for small businesses, the SBA functions at both a national and state level.

The national SBA training efforts include online, self-guided training programs as well as partnerships with private- and public-sector organizations to offer more specific guidance for businesses. Online technology-training opportunities include topics such as Technology 101, Technology for Growth, and others. These courses cover the basic use of technology to start and manage small businesses. The Michigan District Office of the SBA coordinates small business resources with the MI-SBTDC, SCORE, Women Business Center, and the U.S. Export Assistance Center.

Google and the Small Business Administration have created a public-private partnership to assist businesses in learning how to be successful online. This initiative provides online videos that detail how small business owners have used the Internet to help their businesses. Topics include establishing an online presence, engaging customers with a website, marketing, the use of paid online advertising, and using web analytics to measure results (Google, 2011).

Service Corps of Retired Executives

The Service Corps of Retired Executives (SCORE) is a nonprofit association dedicated to helping small businesses get off the ground, grow and achieve their goals through education and mentorship. For nearly 50 years, SCORE has been offering mentoring to small businesses through a network of more than 13,000 volunteers and 364 chapters nationwide. SCORE is funded primarily by the SBA with additional corporate sponsorships and offers services at no charge or for low fees. Michigan is home to nine SCORE chapters that offer mentoring to new and existing small businesses on a wide array of topics and economic sectors. Mentoring topics are vast and are based on the needs of the mentee (SCORE, 2012).

The national SCORE website includes an extensive library of online webinars focused on various uses of technology for small businesses. Topics include helping customers find your business online, using technology to improve cash flow, boosting your business using technology, building the perfect website, creating a technology plan for your business, and social media marketing (SCORE, 2012).

New Jersey Business and Industry Association Workforce Training Program

The state of New Jersey provides a good example of a public partnership providing an opportunity for businesses to receive computer skill training. The New Jersey Business and Industry Association (NJBIA) Workforce Training Program is a partnership between the NJBIA, the State's community colleges, and the New Jersey Department of Labor and Workforce Development. The program was started in 2007 and has delivered 1,300 classes with an enrollment of over 15,000 employees from 1,000 businesses and organizations across the state. Training classes offered through this program are not just for computer skills; they also offer courses in communications, basic math and

measurements, and English as a Second Language (College Consortium for Workforce and Economic Development, 2010).

Any company or organization in New Jersey is eligible to participate in this program at no cost, although some programs are targeted to certain industries. To participate in the program, businesses must pay their employees at the same rate as they are paid for normal work for the time they spend in training. Additionally, data about employees and businesses, such as the Federal Employer Identification Number, Social Security numbers of employees, job titles of participating employees, and the wage range of employees, may be required by individual training programs (College Consortium for Workforce and Economic Development, 2010).

Classes may be held at either a community college campus or on-site at a business, although minimum enrollment requirements apply for this option (typically ten participants per class, although it is possible to coordinate training with other organizations to meet this requirement). This program offers both dedicated and open enrollment courses. Dedicated courses are customized for specific employers in terms of the days, times, location, and each business's needs. Small businesses that have difficulty meeting minimum enrollment requirements are often forced to rely on the open enrollment courses on college campuses to train their employees. These courses at college campuses may have the added benefit of providing a wider variety of courses for employees to choose from (College Consortium for Workforce and Economic Development, 2010).

Gloucester County College provides one example of this program at work in the technology skills arena. At the school's Continuing Education Center, free computer skills training is offered to area business employees that work at least twenty hours per week. Course topics are somewhat limited, mainly focusing on Microsoft Word and Excel training, and the majority of classes are offered at the community college. However, on-site training can be delivered if ten or more employees participate in the training (Gloucester County College, Continuing Education Center, 2012).

Passaic County Community College also offers free computer classes through this program. All private-sector and non-profit employers in New Jersey are eligible for the Passaic program if they pay taxes into the Unemployment Insurance fund. Course participants must work at least twenty hours per week. Course topics include skills training in Microsoft Word, Excel, Outlook, and PowerPoint. Most courses are offered at the community college campus but onsite training for a minimum of ten employees is also available (Passaic County Community College, n.d.).

State of California Employment Training Panel

The state of California also provides funding for training state business's employees in a public-private partnership between the state and employers. The state's Employment Training Panel (ETP) is a state agency that provides funding for corporations to train employees with the goal of reducing unemployment. The program is funded by a tax on

employers that is collected with the Unemployment Insurance tax. The ETP was launched in 1982 and has reimbursed employers \$1.2 billion in the training costs of over 760,000 employees from 77,000 businesses. Employers match training funds for existing workers to be trained and the ETP also provides funding for training unemployed workers. Both small businesses and employers in areas in the state with high unemployment are a priority of this program. The ETP cites this program as an important economic development tool in California, as it encourages companies to locate to the state, and has been documented to provide a return on investment of more than \$5 for every \$1 spent on training (California Employment Training Panel, 2010).

The ETP only funds training for businesses that pay the Employment Training Tax. Training can be conducted by community colleges, universities, adult schools, regional occupational programs, or private training agencies. Approximately one-third of businesses served by ETP have twenty or fewer workers. The ETP Small Business Program will fund up to \$50,000 in training cost reimbursements for businesses with 100 or fewer employees within the state of California and no more than 250 worldwide employees (California Employment Training Panel, 2010).

The ETP funds a variety of training opportunities for state businesses, including some computer skills training. One example of the utilization of these funds for computer skills training is run by AcademyX, a Los Angeles area computer training business. To participate in AcademyX training, companies must meet a variety of requirements:

- Employees must make \$14.87 per hour (the value of medical, dental and vision benefits can apply toward this minimum)
- Students must supply a Social Security number for tracking purposes
- Companies may need to pay a fee if employees leave their positions within 90 days of their training or do not complete a certain number of hours of training in a specified time period

Employees must be paid for the time spent in training. Students that meet the ETP eligibility requirements can take the company's public enrollment courses at no cost. On-site training is also available, but an additional fee may be charged for course customization. Course topics include the majority of the classes offered by AcademyX, including advanced programming classes (AcademyX, n.d.).

Fast Forward New Mexico

Fast Forward New Mexico, is a three year grant funded program that began in the summer of 2010. Fast Forward New Mexico partners with public and tribal libraries in New Mexico to provide no cost Internet training, information, and awareness to the state. The mission of Fast Forward New Mexico is "to increase statewide broadband adoption and promote computer literacy and Internet use in rural, Hispanic, and Native American populations in order to better prepare the state's citizens to participate in economic development and educational opportunities" This program also reaches out to small businesses and entrepreneurs (Fast Forward New Mexico, 2012).

The Fast Forward New Mexico program offers a Small Business Success Series that is aimed at increasing small business profits through e-commerce, e-marketing, and social media. Topics include using Internet tools to reduce costs and increase sales and social media marketing. All courses are taught at local libraries and only require registrants to have an active Gmail account (Fast Forward New Mexico, 2012).

Mesa Public Library

Another library based program exists in Arizona. The Mesa Public Library in Mesa, Arizona has partnered with the non-profit Chicanos Por La Causa to offer free computer classes to small business owners. These courses are offered at the public library and are taught in both English and Spanish. The courses are geared towards providing small business owners with social media and other digital communication and marketing tools through topics such as digital literacy, Microsoft Office, Facebook and Twitter (City of Mesa, Arizona, 2012).

Center for Nonprofit Management, Nashville, Tennessee

One local organization has focused on providing technology training to the nonprofit sector. The Center for Nonprofit Management in Nashville, Tennessee has partnered with the for-profit New Horizons Computer Learning Center to provide technology training to its members. Any nonprofit is eligible for membership with the Center and courses are provided at discounted rates to all members. Center members can save \$50 on basic courses and \$100 on more advanced courses. These classes are offered through the New Horizons Computer Learning Center and can be either instructor-led or online (Center for Nonprofit Management, 2012).

Latino Tech-Net

The Mission Economic Development Agency partnered with the National Association for Latino Community Asset builders to create a network of non-profit organizations that provides customized training to Latino entrepreneurs. Training topics include digital literacy and Microsoft office software. This network has conducted training in eleven cities throughout the United States and has trained over 11,000 participants. (*Expanding Broadband Access to Small Businesses*, 2012). Latino Tech-Net projects that by 2013 it will have trained 15,000 individuals, reached 45,000 individuals through open lab access, and created 2,100 jobs (Latino Tech-Net, 2012).

University of Minnesota Extension (UME)

UME has partnered with the C.K. Blandin Foundation to provide technology training to small businesses in rural areas of the state. They target small businesses with less than ten employees in the retail, food, and tourism industries. Instructional materials provided include information on how an online presence can grow a business. The extension has conducted over 170 training events and reached 1,300 businesses (*Expanding Broadband Access to Small Businesses*, 2012).

Vermont Small Business Development Center

Working with the Vermont Council on Rural Development, the Vermont Small Business Development Center conducts workshops, webinars, and personal advising sessions with rural small businesses. The goal of these activities is to assist businesses in using online resources. Topics include business development strategies, website design, and social media marketing. This program has trained or consulted with almost 1,000 businesses to date (*Expanding Broadband Access to Small Businesses*, 2012).

Business Resource Network

The Business Resource Network (BRN) was created by the City of Chicago's Smart Communities program to help make local businesses profitable and sustainable through free broadband access, business software and technology workshops. The program is targeted to small and medium-sized local businesses. BRN first provides the business with a technology needs assessment to identify computer resources and skills. An action plan is then developed; this includes a timeline for obtaining equipment and receiving technology training. Workshops and one-on-one consulting sessions are then available on topics such as software, business planning, marketing, and website development. By 2011, over 180 businesses had completed the technology needs assessment, 105 had developed action plans, and 220 had participated in workshops (*Expanding Broadband Access to Small Businesses*, 2012).

KnowledgeWave

Private businesses provide useful examples of how to customize technology training for businesses. The Vermont based KnowledgeWave provides training for any business; all classes are provided at a cost to customers. KnowledgeWave offers both on-site and classroom training. Their customized curriculum includes 90 minute workshops on computer technology and how to use technology for customer service, management, and self and community development. The company provides mobile laptop classrooms. Specialized training services provided by KnowledgeWave include the rollout of new technologies and productivity days. The latter topic involves follow up training and support sessions with an instructor onsite for questions, task assistance, and additional instruction (KnowledgeWave, 2012).

One business that utilized KnowledgeWave services is the National Life Group, a financial services company with over 850 employees. KnowledgeWave was able to assist the company in upgrading its new financial system and to develop a new reporting structure for the system. This involved creating a training program to educate employees on the new system and to teach staff how to develop reports and access data in the system (KnowledgeWave, 2012).

New Horizons

New Horizons Computer Learning Centers is a for-profit business that provides computer training to individuals and businesses worldwide. As part of its business solutions, New Horizons offers small and medium business solutions. Businesses have access to content

from any of the over 2,000 courses in New Horizons catalog, including courses for office productivity, IT professionals, and business skills. New Horizons is willing to create customizable options for businesses that incorporate classroom training and online learning (New Horizons, 2012b) New Horizons also offers on-site training that they advertise as being both affordable and customizable (New Horizons 2012a).

Local Small Business Technology Training Model

As shown, on-site, hands-on technology training is not currently available to Michigan small businesses in a formal or organized fashion. This research provides the following points upon which a local model for small business technology training can be founded:

- Awareness of the benefits of technology is the most oft-cited barrier to the adoption and use of technology by rural small businesses. Of Michigan's small businesses without broadband, 43% have voiced "we just don't need it," or "we're getting by without it," as the primary reason for non-adoption.ⁱ
- Several organizations in Michigan provide technology training content in the style of off-site workshops or in an online, self-paced learning format.
- Public-private partnerships between regional or statewide organizations and private-sector technology vendors are working to support off-site/workshop style training in Michigan and other states.
- Small business owners favor customizable, flexible, and collaborative learning models. Small business owners have stated that releasing staff from work, as well as distance and transport, are barriers to attending off-site training.
- While technology use itself can help a small business grow and thrive, business owners respond best to training that highlights the results they can achieve via technology adoption and use.

The research here supports local/regional efforts to implement hands-on, on-site technology training for small businesses. The following outlines a suggested framework for implementation. The model focuses on establishing a local team and organizing entity to facilitate training, establishing the need for training, inventorying assets and resources, creating partnerships, building awareness, and developing support networks.

1. Select organizing entity and gather local stakeholders and resources

Collaboration and cooperation at a local level are key to raising the adoption and use of technology among small businesses, particularly in rural areas. Broadband and technology adoption among rural small businesses tends to lag behind those in urban and suburban settings. While all of Michigan has been impacted by the economic recession that began in 2009, resources in rural areas have been spread thin. The public, non-profit, and private sectors have had to reduce their levels of service in the less densely populated areas of the state. This has increased these organizations' reliance on collaborative models of service delivery. This cooperative mindset can be utilized to create a framework for local technology training.

Identifying an organizing entity and gathering local stakeholders and resources to create a training team are the first steps to creating an on-site technology training program. The organizing entity should be an organization whose mission is focused on serving the local business community. The training team, and organizing entity, should include organizations such as, but are not limited to:

- Chambers of Commerce
- Regional offices of the MI-SBTDC
- Regional MEDC representatives
- Local and Regional Economic Development organizations
- Main Street Programs
- Downtown Development Authorities
- Corridor Improvement Authorities
- Local business associations
- Michigan Smart Zones
- Michigan Skills Alliances
- Michigan Works Office
- Local SCORE Chapter
- Technology or business oriented non-profits
- Community colleges

A diverse group of stakeholders allows for greater collaboration, the incorporation of differing perspectives, and sharing of resources. The organizing entity could be any of the above mentioned stakeholders, but local context will dictate the training team structure. The organizing entity is responsible for identifying and recruiting team members, facilitating meetings, soliciting additional community involvement, and moving the team through to implementing a small business technology training program. Team members should have a desire for helping small businesses in the context of overall community improvement as well as an understanding of technology and desire for expanded access, adoption, and use.

A definition of community, for the purposes of this model, is not provided. Economic and trade areas often do not conform to political jurisdictions. The organizing entity and training team should organize themselves around a geographic area that ultimately benefits the small business community.

2. Assess the need

This research provides statewide data supporting the need for greater awareness of and training for small businesses in the adoption and use of technology. Each community, however, will find varied results at a local level. It is important to understand the current technology use, need, awareness, and desire for small businesses within the community. Each of the training team member organizations interacts with small businesses in some way, and through these interactions, can help assess their technology needs.

The training team should develop a simple questionnaire to gather information from business owners. The following are suggested questions that may assist teams with the assessment.

- What are your current business needs that ICT can improve?

- What types of technology (hardware and software) do you use for your business? Examples include desktop computer, mobile or tablet device, social media, point-of-sale software, online ordering or e-commerce, credit cards, website, productivity software (e.g. Microsoft Office), etc.
- Do you subscribe to Internet service at your business?
- How has technology improved your business, (e.g. increased revenue, more customers, less overhead expenses, improved efficiency, etc.)?
- Have you received any form of technology-related training, either formally or informally? Examples include MI-SBTDC workshops, online tutorials, local chamber trainings, asked a friend or family member for help, etc.
- Are you interested in or do you plan to increase the amount of technology use at your business in the future? What are the barriers preventing additional technology use? Would you consider adopting additional technology if local training was available?

While not all inclusive, questions like these could help the training team gauge the current use and desire for technology adoption at a local level.

The training team should use data gathering techniques that are convenient for small business owners. Some local organizations host regular business roundtables or networking events. These, and similar functions, would allow efficient data gathering. Door to door interviews and focus groups could also prove useful. Given that the intent of this model is to provide hands-on, on-site technology training, an individual business-by-business technology assessment would be the most useful in determining the technology needs of local establishments.

3. Inventory community technology assets

Next, the training team will need to establish an inventory of local technology assets. This can be done following, or concurrently with, the needs assessment. Members of the training team can provide an inventory of the technology-for-small-business resources they offer, but technology assets may be found outside the training team. Along with a listing of established training programs and resources, the technology asset inventory should also include a comprehensive inventory of organizations and individuals with the interest and skill to potentially train small businesses. Assets can also include locations and facilities specializing in access to various technologies. The following are examples of assets that could be found in the community, but may not be part of the training team:

- High school or vocational school technology students and faculty
- Technology providers/vendors (e.g. broadband providers, software developers, web designers, network integrators, hardware retailers, etc.)
- Libraries
- Information and technology companies
- Public computer centers
- Wireless hotspots

- Video conferencing facilities

The local inventory will help the training team identify the capacity of and gaps in the local technology environment. The technology assets can then be compared to the needs assessment to match resources with the business community and assist the training team in the development of relevant training programs.

4. Create training partnerships

With the small business technology needs determined and technology assets accounted for, the organizing entity and training team can begin to develop training partnerships with local assets. Since the purpose is to provide on-site, hands-on training for businesses, it will be important to identify subject matter experts to meet the needs of local businesses. For example, if the needs assessment identified a lack of social media presence among local businesses, the training team can work with the inventory of technology assets and establish a social media expert that is available to visit establishments and train owners and employees on the use of social media to enhance their business. Similarly, if a common need includes website or e-commerce development, the training team can work with local technology assets to determine an expert in website development that can train small businesses on-site. In some communities, adoption of technology may include businesses who are first time computer users, first time Internet users, or those who may not yet own a computer. In these cases, technology experts could include local hardware retailers, broadband providers, and others that can provide basic on-site computer and internet training in order to facilitate future, more advanced uses of that technology to sustain and grow the business.

By creating training partnerships with local entities and identifying topical experts able to train businesses on-site, the training team is compiling resources that function as a catalog or menu, of sorts, for local businesses interested in technology adoption and use. The team can then approach businesses with options for technology training, and vice versa.

5. Build awareness

The most oft-cited reason for non-adoption among small businesses is, “we don’t need it [broadband/technology],” or, “we are getting by without it [broadband/technology].”ⁱⁱ This indicates a lack of awareness of how broadband and technology can sustain and help grow a business. Building awareness of these benefits is key to a successful training program. As found in a focus group of small businesses in West Virginia, small businesses respond best to technology when the focus instead is on how to achieve business results via technology (West Virginia Chamber of Commerce, 2005).

In order to relate technology use with business results, the technology training team can gather stories and examples from local businesses that have already adopted technology. The training team is poised to gather success stories and examples given the recommended methodology for the needs assessment (i.e. interviews and focus groups

with small businesses). Providing local examples of successful technology adoption can assist other businesses in understanding the importance and effectiveness of technology training.

Case examples and story gathering should be integrated with the on-site training model. Participating businesses should be interviewed to gather before and after style accounts of how technology and the training model have helped sustain and grow their business. Case studies and examples should be provided to businesses interested in technology training to help them assess the implications of adoption on their business model.

6. Follow-up and support networks

Technology adoption is not a one-time event in the life of a business. Websites and social media require regular updating, software and hardware evolve over time, and new technology and platforms emerge which can add to the confusion surrounding technology use for small businesses. While local technology experts identified through this process can assist businesses with follow-up questions and concerns after the initial training sessions, it is important to have a support network of businesses that can assist each other with adoption and continued use of technology. Transparent diffusion of the needs assessment, case studies, technology resources, and success stories among local businesses and the training team creates an informal network of technology users that can act as a resource for follow-up questions and issues in the community.

A more formal support structure could include a regularly scheduled, facilitated technology roundtable hosted by the training team, or an individual team member organization, in order to provide businesses with an opportunity to raise questions and learn from practices implemented in other local businesses. An online tool could also be employed to assist small businesses with sustainable adoption and support. Simple chat forums, email listservs, social media, and other options, could be employed by the training team to help foster a support network for continued technology adoption. Small businesses, particularly in rural areas often develop a sense of camaraderie and cooperation given their relative geographic isolation. Inclusive and regular peer-to-peer assistance can create sustainable local technology adoption.

Conclusion

The global economy is shifting from one based in resource-intensive production to an economy based on the capitalization of knowledge and creativity. Information and Communications Technology (ICT) is the most prominent and influential factor contributing to the development of a new economy (Frederick, 2006). Michigan's economic history, for small and large business establishments alike, is deeply rooted in resource-intensive manufacturing. The State's economic struggle during the 1990's and first decade of the 21st Century highlights the importance of economic diversification and transition to a knowledge, or information, based economy.

Information and Communications Technology, specifically broadband and related technologies, are transforming the economy and changing the way in which business is conducted. As the access, acceptance, awareness, and adoption of broadband increases, more and more Michigan businesses are capitalizing on technology to sustain and grow their establishments. However, recent research has identified a broadband and technology adoption gap among small, rural Michigan businesses.

Statewide, 69% of Michigan businesses use broadband and 69% have a website. Among rural small businesses (those with less than twenty employees) these percentages fall to 60% and 43%, respectively.¹ Small businesses represent approximately 30% of jobs in Michigan (U.S. Census Bureau, 2010). Technology adoption among rural small businesses can lead to a number of benefits including more thorough connections with customers, access to information and the collective knowledge and experience of similarly aligned businesses, and decreased expenditure from operational efficiencies. Given the reliance on ICT for conducting business in the knowledge economy, and the total economic impact of small businesses on the state economy, it is imperative to fill this adoption gap and increase the use of broadband and related technologies for rural small businesses in Michigan. Research has shown that hands-on, on-site technology training has the potential to increase technology adoption among rural small businesses by providing training options, real-world solutions, lower training costs, consistent learning experiences, and less downtime in the training process. Relating business success to the application of technology in the business environment is key to creating sustainable technology adoption among rural small businesses (West Virginia Chamber of Commerce, 2005). The relative geographic isolation of rural businesses creates a barrier for establishments to participate in off-site training programs, as an oft cited reason for non-participation in such programs is time and cost of travel to distant locations. (Bennet and Errington, 1995). Local hands-on, on-site technology training offers the opportunity to create sustainable technology adoption among rural small businesses.

Currently, the focus of small business training in Michigan is centered on three primary topics: 1) business plan development, 2) marketing, and 3) financing. These three elements are critical for small business success. While the use of technology can be found within each of these elements, technology training is not a specific focus of

existing training. When available, technology training is delivered primarily through two methods; 1) off-site training classes, seminars, events, or conferences, and 2) online webinars or related content. Similar models are also found nationally. While this style of technology training has been successful in helping businesses improve their adoption and use of technology, a focus on hands-on, on-site technology training for rural small businesses could close the technology adoption gap found in this group and increase the sustainability and growth of Michigan's rural small businesses.

Given the relative geographic isolation of rural small businesses, which restricts access to off-site training, this research proposes a technology training framework that empowers local communities to create a training model that utilizes existing resources and provides training based on the needs of local small businesses. The model follows six steps:

1. Gather and organize local stakeholders and resources: Many communities have several organizations dedicated to serving small businesses, including chambers of commerce, economic development organizations, Main Street programs, community colleges, and downtown development authorities, among others. These organizations and their resources should be gathered and organized into a training team to guide the establishment of a local technology training program for small businesses.
2. Assess the need: While statewide research has identified a gap in technology adoption and use among rural businesses, technology needs among businesses will vary by location. The training team can employ various data gathering techniques to assess the technology needs of small businesses and thereby establish topics of interest to local establishments.
3. Inventory community technology assets: Similar to the varying needs of each community, the availability of technology assets and resources will also vary by location. The training team should gather and catalog local technology assets including, not but limited to, broadband providers, technology vendors, high school vocational centers, community colleges, libraries, technology-based companies, and public computer centers.
4. Create training partnerships: The training team can use the needs assessment and technology assets inventory to identify trainers to meet the needs of local businesses. Established training partnerships then function as a catalog of technology experts for businesses seeking more information and training on a particular technology topic.
5. Build awareness: The most oft-cited reason for technology non-adoption relates to awareness of how technology can benefit a business. The training team should work to gather case examples and stories of businesses in the community already using technology and the impact it has had on their establishment. Stories should also be gathered from businesses before and after training in order to determine the impact of that technology.
6. Follow-up and support networks: Technology adoption is not a single or one-time event in the life of a business. The training team can facilitate formal and

informal follow-up and support networks to help businesses sustain their technology adoption. Examples and stories identify peers that non-adopting businesses can go to with questions, and training team organizations can establish business-to-business networking events or facilitate online discussions to create an atmosphere of co-learning and sharing.

In conclusion, the low rate of technology adoption and use by Michigan's rural, small businesses leaves these establishments at a competitive disadvantage as Michigan's, and the global, economy becomes increasingly reliant on information and communications technology. Hands-on, on-site technology training, organized by local, community-centered teams, aimed at sustaining and growing the state's small businesses can help improve the local and statewide economy.

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ENDNOTES

ⁱ This was calculated using data from the 2011 Connect Michigan Business Technology Assessment. Between October 3 and October 14, 2011, Connect Michigan conducted a telephone survey of 800 Michigan business establishments. Data were collected by Thoroughbred Research Group, located in Louisville, KY. The purpose of this survey was to measure trends in technology adoption; measure barriers to technology adoption; determine how Michigan businesses are using broadband as an engine of economic growth; and measure the average price and speed of broadband service among business establishments across the state. On average, these surveys took approximately nine minutes to complete.

Sample quotas were established by company size (5 brackets) and industry sector (8 sectors). Within these 40 cells, a randomly-drawn sample of businesses listed with Dun & Bradstreet was contacted for the survey. Altogether, this sample included 184 businesses with 50+ employees, 212 businesses with 20-49 employees, 206 businesses with 5-19 employees, and 198 businesses with 1-4 employees. In cases where the respondent's information regarding the number of employees at the establishment differed from the information provided by Dun & Bradstreet, the respondent's answer was used in determining business size quotas. Connect Michigan intentionally over-sampled large businesses to ensure a sample that was large enough to analyze and compare to smaller businesses. Altogether 404 businesses with fewer than twenty employees were surveyed in this sample.

In addition to the size and sector quotas, the data was subsequently weighted to ensure that the sample was representative of all employer business establishments statewide, with targets determined according to the 2009 United States Census Bureau's County Business Pattern report, the most recent data that was available at the time the survey was conducted. Weighting of the survey data and research consultation were provided by Lucidity Research LLC, located in Westminster, MD.

This sample provides a margin of error of $\pm 5.0\%$ at the 95% confidence level for the total sample of 800 businesses. This sample error accounts for sample weighting, using the effective sample size. As with any survey, question wording and the practical challenges of data collection may introduce an element of error or bias that is not reflected in this margin of error.

The Michigan Business Technology Assessment was conducted as part of the State Broadband Initiative (SBI) grant program, funded by the National Telecommunications and Information Administration (NTIA). The complete survey results are being submitted to a peer review process, and these analyses will be utilized by Connect Michigan and Michigan stakeholders to help increase adoption and use of broadband by Michigan businesses. The SBI grant program was created by the Broadband Data

Improvement Act (BDIA), unanimously passed by Congress in 2008 and funded by the American Recovery and Reinvestment Act (ARRA) in 2009.

Selected Sample Size:

	n	With broadband	Without broadband
All businesses	800	615	185
Businesses with fewer than 20 employees	404	284	120
Businesses with 20 employees or more	396	331	65

ii This was calculated using data from the 2011 Connect Michigan Residential Technology Assessment. Between June 27 and August 18, 2011, Connect Michigan conducted random digit dial telephone surveys of adult heads of households across Michigan. This sample included 1,006 adults age 18 or older who were contacted via landline and 194 adults who were contacted via cell phone. Once the respondent agreed to participate, these surveys took approximately eleven (11) minutes to complete and were designed to measure technology adoption (including speeds and prices) and usage.

Quotas were set by age, gender, and county of residence (urban, suburban, or rural), based on 2010 United States Census data. The data was weighted using a rim weighting process to account for any minor variances between the statewide population and the survey sample based on these factors. Based on the effective sample size for this statewide sample, the margin of error = $\pm 3.09\%$ at a 95% level of confidence.

In addition, Connect Michigan surveyed a total of 2,400 adult heads of households who do not subscribe to home broadband service (including 194 adults who were contacted on a cell phone) to explore barriers to broadband adoption and measure these adults' willingness to subscribe at different prices. Once respondents agreed to participate, these surveys took approximately seven (7) minutes to complete. This sample was also weighted by age, gender, and county of residence using a rim weighting process to account for minor variances between the sample and the population of non-adopters, as identified through the residential survey. At a 95% level of confidence, this sample provides a margin of error of $\pm 2.45\%$ among all residents who do not subscribe to home broadband service.

As with any survey, question wording and the practical challenges of data collection may introduce an element of error or bias that is not reflected in these margins of error. For this report, "rural" residents are defined as those living in counties that are not part of a Metropolitan Statistical Area (MSA). Surveys were conducted by Thoroughbred Research, with weighting and research design consultation provided by Lucidity Research LLC.

These surveys were conducted as part of the State Broadband Data and Development (SBDD) grant program, funded by the National Telecommunications and Information Administration (NTIA). The SBDD grant program was created by the Broadband Data Improvement Act (BDIA), unanimously passed by Congress in 2008 and funded by the American Recovery and Reinvestment Act (ARRA) in 2009. To learn more about Connect Michigan please visit www.connectmi.org or e-mail us at info@connectmi.org.

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