



## II. BROADBAND ADOPTION IN MICHIGAN

While expanded broadband access is important, without corresponding broadband adoption among Michigan consumers and businesses, further investment and build-out could be deferred. Therefore, it is in the interest of both private and public leaders statewide to collaborate to bridge the remaining broadband adoption gaps, explored below, and ensure that all Michiganders are able to participate and compete in the twenty-first century interconnected global economy.

### Trends in Broadband Adoption Among Michigan Homes and Businesses

Connect Michigan's innovative research on broadband access, adoption, and use is unprecedented. Connect Michigan conducts annual statewide residential and business surveys. These surveys provide information on the people, businesses, and communities that are taking advantage – and more importantly, not yet taking advantage – of the expansive opportunities provided through broadband adoption.

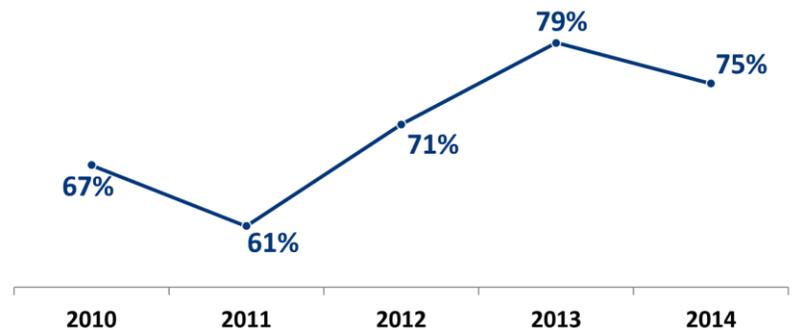
### Michigan Residential Broadband Trends

Connect Michigan's 2014 Residential Technology Assessment revealed that 25% of Michiganders have not adopted broadband at home. While 75% of adults in the state subscribe to home broadband service, up from 67% in 2010,

this leaves more than 1.9 million adults statewide who still do not subscribe to home broadband service.

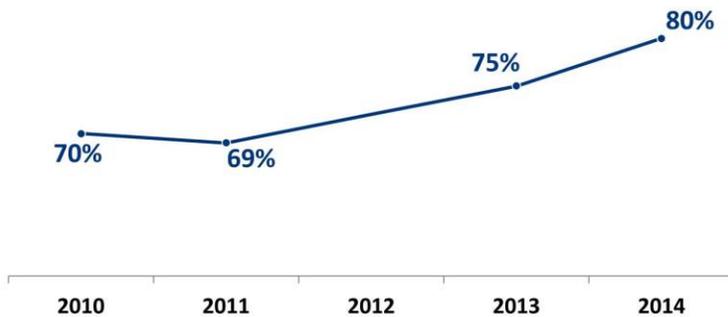
The barriers to home broadband adoption are consistently delineated into three main categories: (1) affordability of service and/or the device; (2) perceived relevance of online resources; and (3) digital skills to use the device and connectivity. Since 2011, the belief that home broadband service is not relevant or worthwhile has been the top barrier to home broadband adoption in Michigan, cited by more than one-third (37%) of non-adopters in the state. The share of non-

### Home Broadband Adoption in Michigan



adopters who cite cost as their main barrier to home broadband adoption has dropped in half since 2011, from 28% of non-adopters that year to 14% of non-adopters in 2014. The lack of digital literacy skills has also declined as a barrier to home broadband adoption since 2011 from 18% to 12% of non-adopters; this represents 307,000 fewer adults who said that their lack of digital literacy skills prevented them from subscribing to broadband.

**Broadband Adoption Among Michigan Businesses**



## Michigan Business Broadband Trends

Broadband has a substantial impact on Michigan businesses and the state workforce as a catalyst that helps to increase revenues, enhance productivity, and attract and retain talent. According to Connect Michigan's Business Technology Assessments, Michigan businesses earned

an estimated \$71.7 billion in revenue from online sales in 2013, an increase of approximately \$14.7 billion since 2010.

Results of Connect Michigan's 2014 Business Technology Survey released in summer 2014 revealed that four out of five businesses in the state (80%) use broadband, up from 70% of businesses in 2010.

Despite this increase, approximately 43,000 Michigan businesses still do not use broadband. Additionally, one in five Michigan businesses (20%) have difficulty in finding employees with the necessary technological skills, suggesting that technology training could help empower Michigan's workforce. This current skill gap requires businesses to devote time and monetary resources toward training workers on the requisite digital know-how, or outsource the work, oftentimes to other countries. Further, higher-paying jobs often require higher levels of technical expertise. Therefore, even if employment overall improves, if Michigan job seekers are only able to secure low-paying positions that require a low level of or no digital skills, they will remain unable to compete.

## Topical Reports

In addition to statewide research surveys, Connect Michigan published several reports that explored broadband issues and their impact on other industries in the state. Previous Connect Michigan publications have explored the impact of broadband on Michigan's economy, e-learning opportunities through high-speed Internet, and broadband adoption among low-income populations. These reports uncover and highlight broadband successes and opportunities within the state.

Among these studies:

[Broadband and Business: Leveraging Technology in Michigan to Stimulate Economic Growth](#) (2011) showed that an estimated 71,000 Michigan businesses (30% of businesses in the state) did not use broadband at that time. Broadband-connected businesses reported median annual revenues that were \$200,000 higher than businesses that did not use broadband.

[Broadband Infrastructure in Michigan: Update to First Working Report on the State of Broadband in Michigan](#) (2011) showed a marked increase in broadband availability at multiple speed tiers, compared to the original maps published in 2010.

[Teleworking in Michigan: Empowering Workers through Broadband](#) (2011) revealed that nearly one in five Michigan employees (19%, representing approximately 741,000 working adults) worked from home instead of commuting at least part of the time. Altogether, nearly one-half of employed Michigan adults said they either telework or would be willing to telework if given the opportunity by their employer. Michigan employees who did telework worked from home an average of 1.6 days per week.

[Broadband in the Upper Peninsula of Michigan](#) (2011) reported that 75.5% of households in Michigan's Upper Peninsula had access to advertised broadband download speeds of 6 Mbps or higher. By comparison, only 67% of adults living in that region subscribed to home broadband service.

[Broadband: Empowering Small Businesses to Grow and Thrive](#) (2012) noted that approximately two-thirds of Michigan businesses with fewer than 20 employees (67%) subscribed to broadband, a significantly lower number than the share of larger businesses that subscribed. Connect Michigan estimated that these small businesses that subscribed to broadband earned approximately \$200,000 more per year than small businesses that did not use broadband, and overall small businesses earned nearly \$6.9 billion annually in online sales.

[Mobile Broadband Usage in Michigan](#) (2012) showed that more than one-third of Michigan adults (36%, or approximately 2.7 million Michiganders) used mobile broadband at that time. Nearly one in five of those (approximately 525,000) did not subscribe to home broadband service, but rather relied on their cell phones or mobile devices for Internet service.

[On-Site Technology Training for Small, Rural Michigan Businesses](#) (2012) revealed that 29% of small businesses (those with fewer than 20 employees) earned revenues from online sales. Among small businesses that did not use broadband, the overwhelming barrier (cited by 43% of non-adopting businesses) was the belief that they did not need broadband or were getting by without it. This paper proposed a technology training model through which Connect Michigan would develop training partnerships with small businesses and build awareness of the benefits of using broadband in a business setting.

[Broadband: Creating Educational Opportunities Across Michigan](#) (2012) reported that approximately 2.4 million adults in Michigan took online classes or used the Internet to conduct research for schoolwork. In addition, more than one out of seven Michigan broadband subscribers (15%) said that they subscribed primarily because a family member needed broadband for school.

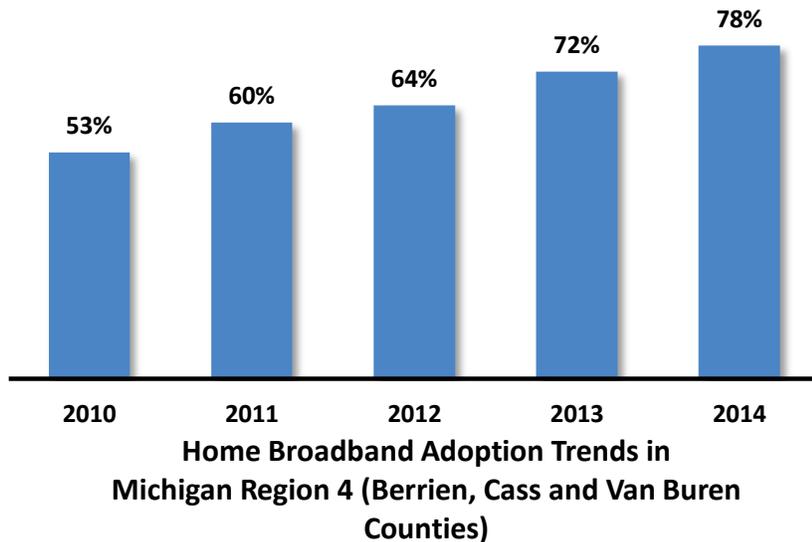
[Technology Use Among Home-Based Businesses: Michigan Entrepreneurs Use Technology to Thrive](#) (2013) showed that 74% of home-based businesses in the state used broadband and 34% used mobile Internet service for their work. That year, Michigan home-based businesses reported making over 400,000 transactions with Michigan vendors that were worth more than \$79 million in online purchases. In addition, home-based businesses reported earning \$2 billion in annual revenues from online sales.

[Michigan Home Broadband Non-Adopters](#) (2013) examined the approximately 2.2 million adults in the state who did not subscribe to home broadband service. Approximately 665,000 adults in the state said that they still went online, but only from locales outside of their homes such as work, public computer centers, or libraries. Among all non-adopters, the top barrier to home broadband adoption was the perception that broadband was not relevant to their lives or they did not see the value of having broadband service at home.

[Digital Literacy and Inclusion: Further Developing Michigan's Twenty-First Century Workforce](#) (2013) examined the information and communications technology (ICT) skills or “digital literacy” skills gap and its relationship to workforce and economic development in Michigan.

[Broadband's Economic Impact in Michigan](#) (2013) estimated that an increase in home broadband adoption of just one (1) percentage point could result in more than 12,000 jobs saved or created. Additionally, Michigan adults conducted an estimated 17.1 million online transactions with Michigan businesses, valued at nearly \$1.1 billion.

Approximately 1.2 million Michigan adults also sold goods and services online from their homes, worth an estimated \$467 million in annual revenues statewide. Further, approximately 732,000 Michigan adults teleworked that year, saving an estimated \$362.8 million in car maintenance and fuel.



## Regional Research

In addition to these reports, Connect Michigan has also conducted various analyses to track home broadband adoption trends and address adoption issues among Michigan residents and businesses by region. For instance, Connect Michigan calculated home broadband adoption trends in Michigan Region 4 (which includes Berrien, Cass, and Van Buren Counties), communities that are actively involved in Connect Michigan's Connected Community Engagement Program.

Since the inception of Connect Michigan, this region has shown an upward trend in home broadband adoption, increasing by 25 percentage points between 2010 and 2014.

## Research Presentations

In addition to the surveys and reports noted above, Connect Michigan strives to be engaged with other researchers across Michigan and nationally, working to address the challenge of getting the population connected to broadband and fostering discussion about policy issues that would impact the state. To that end, Connect Michigan presented three papers to the Michigan Academy of Science, Arts, and Letters:

[Portrait of the Internet Power User: Demographic Indicators of Frequent Internet Usage \(2012\)](#) showed that 54% of home broadband subscribers identified themselves as “Power Users” who go online from home every day. Compared to other users, power users were likely to own more pieces of technological hardware, go online using a wider variety of technology options, access the Internet while away from home, and take advantage of mobile Internet service.

[Lifeline Reform - Recommendations to Increase Broadband Adoption Among Low-Income Households \(2013\)](#) revealed that 52% of low-income non-adopters reported that they would not be swayed by price incentives alone to subscribe to home broadband service. Price sensitivity among low-income households varies along with other demographic lines; while 61% of adults age 18-34 reported that they would subscribe to broadband if it were available at a price they considered “acceptable,” only 13% of non-adopters age 70 or older said they would. To make sure every Michigan household had broadband, incentives other than monthly price reductions, such as digital literacy training or discounted computers, would be required.

[Learning How to Connect: Examining the Need for Digital Skills Training in America \(2014\)](#)

measured the demand for digital skills training among working-age adults in Michigan, particularly those who were unemployed. The study also found demographic differences correlated with digital skill levels, and determined that digital literacy training like Every Citizen Online could effectively improve digital literacy among those most in need, benefiting the workforce as well as businesses in the state.

Additionally, Connect Michigan presented the paper [Staying Connected: Technology Adoption and Usage Among Adults Age 70 and Older](#) at the 2012 Aging, Mobility, and Quality of Life Conference, hosted by the University of Michigan. This study found that broadband

*In 2012, the Michigan Association of United Ways (MAUW) was working with the Michigan Department of Human Services to provide online access to electronic benefits throughout the state. Under this new approach, qualifying individuals would need to apply for and access the state and federal benefits available to them via the Internet. The rollout of electronic benefits was to be implemented utilizing two key avenues: (1) a web portal that applicants could access from any computer with an Internet connection, and (2) a network of nonprofit organizations throughout the state that could offer personal assistance to applicants using the new portal. However, MAUW did not realize the broadband access and adoption barriers facing many vulnerable populations and nonprofit organizations in Michigan. Connect Michigan was able to provide MAUW with data and insight on these challenges, enabling MAUW to better understand the technology landscape among their target demographic groups and nonprofit partners, and better prepare for the rollout of electronic benefits as a result.*

helped seniors live independently, it increased community participation, and it improved healthcare by decreasing healthcare costs and facilitating pre-emptive medical action. This study concluded that effective digital literacy training programs needed to 1) meet seniors where they were in terms of digital skills; 2) be provided by trusted sources; 3) address the prevalent fear of technology among the elderly; and 4) focus on demonstrating the practical uses of relevant, broadband-powered tools in order to encourage more seniors to subscribe to home broadband service.