



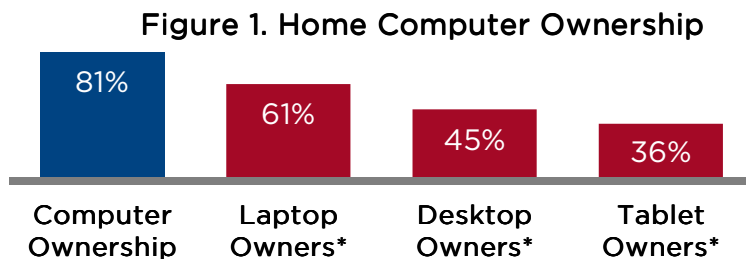
Since its inception in 2008, Connect Ohio has been fighting to improve broadband access, adoption, and use across the state. To achieve this goal, Connect Ohio and its parent organization, Connected Nation, has worked to identify where residential broadband service is available, learn how Ohioans are using broadband, and guide policymakers as it works with government offices, non-profit organizations, universities, and local leaders to help close the digital divide and make home broadband service a reality for all Ohioans.

Part of this effort has been to conduct a series of residential telephone surveys to measure home broadband adoption, learn how Ohio residents use their broadband services, and determine the barriers that prevent residents from subscribing. In addition, recognizing the numerous benefits for residents, businesses, and communities, Connect Ohio seeks to measure the impact that broadband has on the state of Ohio and identify areas of need that can stunt the economic, cultural, and educational growth of the state.

To this end, in 2017 Connect Ohio conducted its latest in a series of telephone surveys of adults across the state. This survey was designed to identify trends in home broadband adoption, determine ways in which home broadband service impacts the economy, and measure how well Ohioans are prepared for the twenty-first century workforce by having individuals assess their skills with several digital tools that are often used in the workplace. This survey found that while home broadband adoption remains steady, many Ohio adults do not have the digital skills needed to be competitive in a modern technology-driven workplace.

### Home Technology Adoption

Statewide, more than four out of five Ohio adults (81%) report that they have a computer of some sort at home, up from 74% in 2014. This includes more than three out of five Ohioans (61%) who own a laptop computer, as well as 45% who own a desktop computer and 36% who own a tablet computer (Figure 1).



*\*Categories are not mutually exclusive, as respondents could own more than one type of computer.*

### Key Findings:

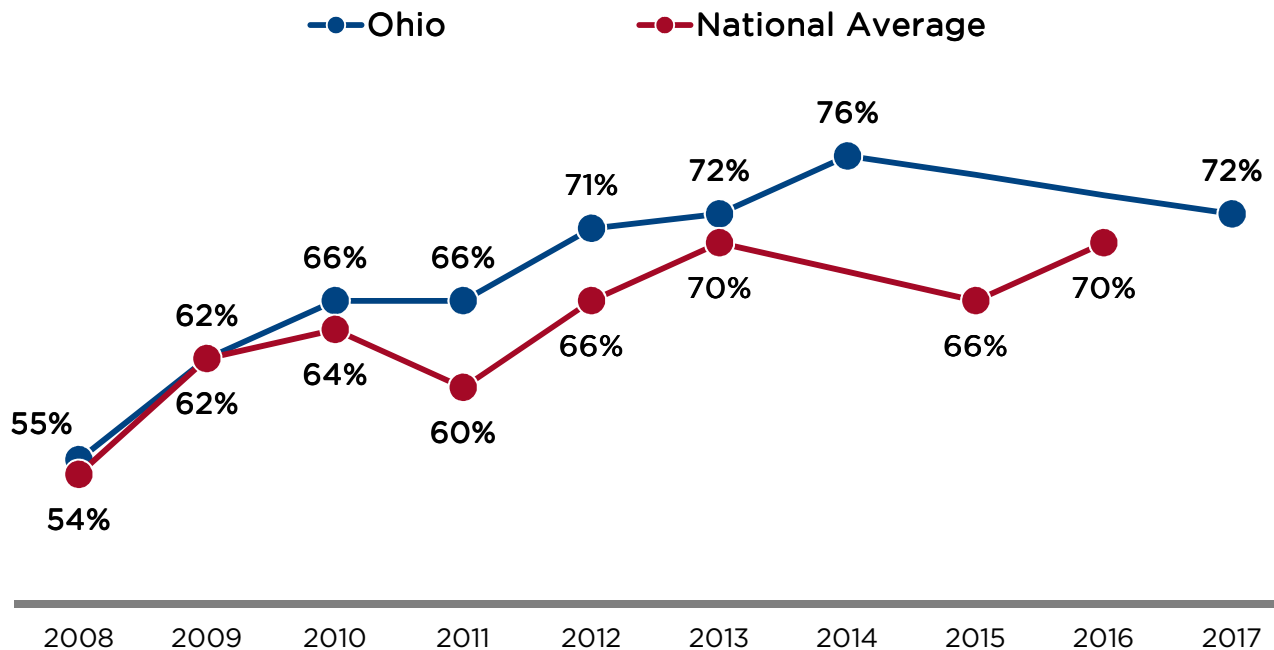
- **81%** of Ohio adults own home computers, up from **74%** in 2014.
- **72%** of Ohio adults subscribe to home broadband service, compared to **76%** in 2014. The most recent study shows a national average of **70%** of adults.
- Ohio broadband subscribers pay an average of **\$1.93** per Megabit per second (Mbps), compared to **\$3.55** in 2014.
- Older Ohioans, those with lower annual incomes, and those living in rural portions of the state are least likely to subscribe to broadband.
- The top barrier to broadband adoption is **the belief that home broadband service is not relevant**. This is followed closely by **cost**.
- Ohio internet users report spending approximately **\$3.2 billion** on online purchases from local stores and **\$6.4 trillion** on online purchases from non-local stores in the 12 months prior to participating in the survey.
- Many Ohio adults lack the digital skills they need to remain competitive.

As a growing number of Ohioans value the freedom provided by mobile access, desktop computers are no longer the type of computer owned by the largest share of adults in the state. Ownership of laptop and tablet computers, however, has grown significantly across the state.

### Home Broadband Adoption

Home broadband in the state remains stable across Ohio. Statewide, 72% of adults subscribe to home broadband service.<sup>1</sup> This is slightly lower than the 76% of Ohio adults who subscribed in 2014, although this figure is within the margin of error for the surveys (Figure 2).

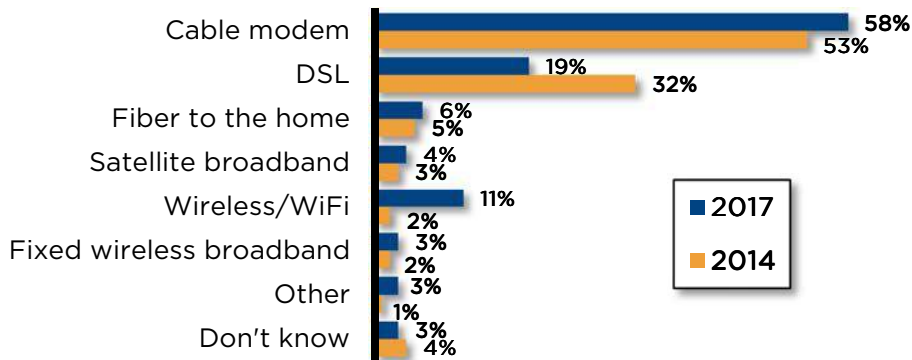
Figure 2. Home Broadband Adoption in Ohio



<sup>1</sup> "Home broadband subscribers" are defined as residents who subscribe to cable, DSL, fiber, fixed wireless, or connectivity types other than dial-up or mobile wireless internet service at home.

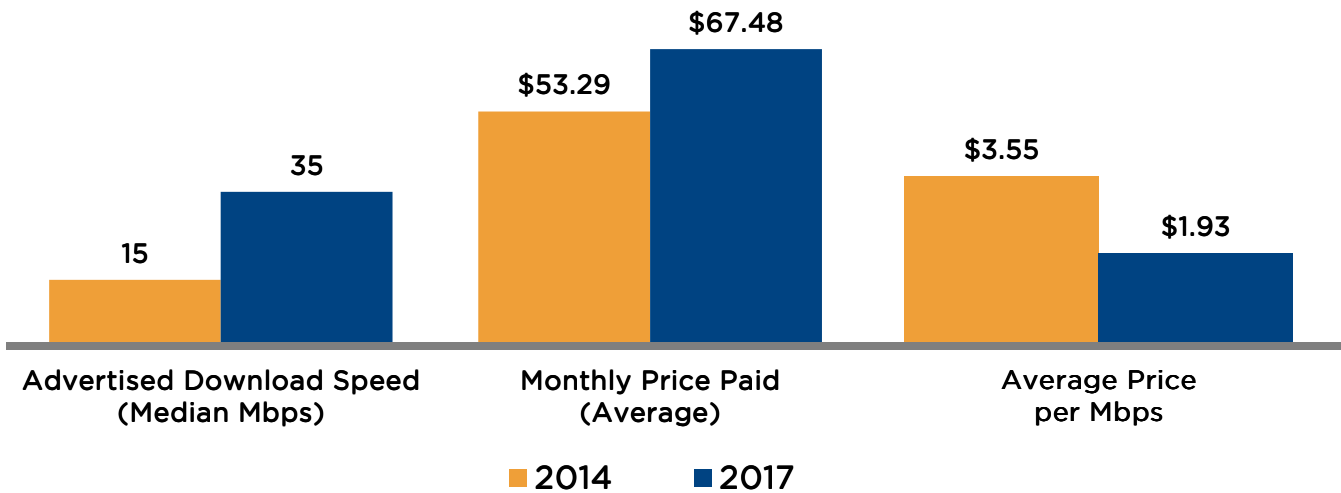
Across the state, cable broadband remains the top broadband platform. Adoption of cable home broadband service has increased since 2014, as has adoption of wireless service (Figure 3). DSL broadband, on the other hand, decreased between 2014 and 2017.

**Figure 3. Home Broadband Subscriptions in Ohio  
(Among Home Broadband Subscribers)**



Among the 45% of broadband subscribers who know their advertised download speeds, the median advertised speed is 35 Megabits per second (Mbps), compared to only 15 Mbps three years ago (Figure 4).

**Figure 4. Download Speeds and Monthly Prices Paid for Home Broadband Service**



This faster speed comes at an increased cost, though. On average, broadband subscribers say they pay \$67.48 per month for their broadband service, compared to \$53.29 in 2014. The increase in download speeds outpaces the cost hikes, though: where Ohio residents paid an average of \$3.55 per Mbps in 2014, that price has dropped to \$1.93 per advertised Mbps downstream.

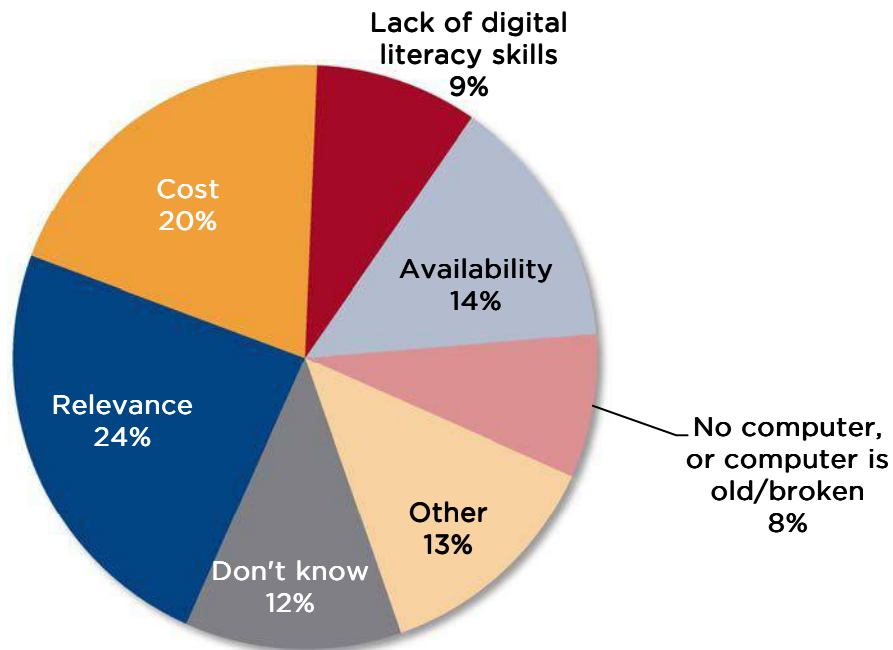
Not all Ohioans are subscribing to home broadband at the same rate (Table 1), and some digital divides persist despite numerous efforts to close them. While younger residents, those with college or advanced degrees, and those with higher annual household incomes are more likely to subscribe to broadband, older adults, those living in rural Appalachian counties, and low-income residents with annual household incomes below \$25,000 are still less likely to subscribe to broadband. In fact, less than one-half of Ohio residents with annual household incomes below \$25,000 per year subscribe to home broadband service, putting them at risk for falling further behind.

Overall, approximately 2.5 million Ohio adults do not subscribe to home broadband service. The largest share of non-adopters (24%) cite the perception that they do not need broadband, or they would not use it enough to be worth the cost (Figure 5).

**Table 1.**

Home Broadband Adoption		
	Statewide	72%
Age	18-34	75%
	35-54	79%
	55-64	70%
	65+	57%
	Rural Appalachia	62%
	Not Rural Appalachia	73%
Educational Attainment	HS Diploma or Less	58%
	Some College	73%
	College Degree	82%
	Advanced Degree	85%
Annual Household Income	Less than \$25,000	47%
	\$25,000 - \$49,999	74%
	\$50,000 - \$74,999	78%
	\$75,000+	84%
Race and Ethnicity	Caucasian	73%
	Black Non-Hispanic	61%
	Hispanic	76%

**Figure 5. Barriers to Home Broadband Adoption**



One in five non-adopters (20%) cites the cost of home broadband service or the equipment needed to get connected as their main barrier, followed by those who report that there is no service available, or available service is not fast enough to warrant subscribing.

## Internet Usage

Many Ohioans who use the internet do so to connect with a variety of community organizations, offices, and resources. These interactions range from making purchases from businesses to staying in touch with local doctors, schools, and government offices. For more than nine out of ten internet users (91%), the internet is an important tool for interacting with community institutions.

Local businesses (those within 50 miles of the individual’s home) are the institutions with which internet users are most likely to interact by making purchases, asking questions about products or services, or by comparing costs between competitors; in fact, nearly four out of five Ohio internet users (79%) say they go online to interact with local businesses, followed closely by the share who interact with businesses that are located further away (Figure 6).

**Figure 6. Internet Users Who Interact With Local Institutions**



Over one-half of internet users report going online to interact with schools or educators; understandably, this figure jumps considerably among adults who have school-age children at home (76% of whom interact with schools via the internet).

## Broadband and the Economy

The increase of broadband adoption and usage has had a considerable impact on businesses and households, as well as local, state, and federal economies. As such, one of the most important factors in the expansion of broadband usage in the state is reflected in its impact on the workplace and on state finances.

Studies have shown that increases in home broadband adoption are linked to higher median household incomes and higher levels of entrepreneurship, particularly in rural

areas.<sup>2</sup> In fact, a recent study from The Ohio State University states, “broadband is now an essential utility which generates significant economic value for consumers and is an essential part of business.”<sup>3</sup>

One way that broadband directly impacts local economies is through online purchases, and many internet users are going online to find bargains from stores both local and remote. Statewide, 79% of internet users say they interacted online with local businesses, representing approximately 5.7 million Ohio adults. Those who had made online purchases from these local businesses reported spending \$562 on average in the 12 months prior to participating in the survey. Statewide, that translates into a total of \$3.2 billion spent online for purchases from local businesses. While a smaller share of Ohio internet users made purchases from businesses that are not local to them (70%, representing 5.04 million Ohio adults), those online shoppers reported spending \$1,270 on online purchases from non-local businesses in the 12 months prior to participating in the survey. Altogether, that represents approximately \$6.4 trillion in online purchases made by Ohio adults within a span of 12 months.

In addition to the benefits that broadband provides for businesses in terms of online sales, the ability to access broadband and develop digital skills is vital for Ohioans who want to remain competitive in today’s workforce. Businesses need employees who can use digital tools to increase productivity. Job-seekers need digital skills to seek out and find jobs online. Both employers and businesses benefit when employees are able to telework. In a number of ways, digital skills are vital for Ohioans to thrive in the workplace.

First, job-seekers must find a job, and for many, that involves going online. A recent survey by the Pew Research Center found that one in three job-seekers considered the internet their most valuable asset in finding a job, even above networking through friends or relatives.<sup>4</sup>

In Ohio, three out of ten adult internet users (30%, representing 2.46 million Ohioans), said they had gone online to look or apply for jobs within the past 12 months.



Ohio internet users report spending approximately **\$3.2 billion** on online purchases from local stores and **\$6.4 trillion** on online purchases from non-local stores in the 12 months prior to participating in the survey.

<sup>2</sup> Whitacre, B., Gallardo, R., & Strover, S. (2014). *Does rural broadband impact jobs and income?* Evidence from spatial and first-differenced regressions. *The Annals of Regional Science*, 53(3), 649-670.

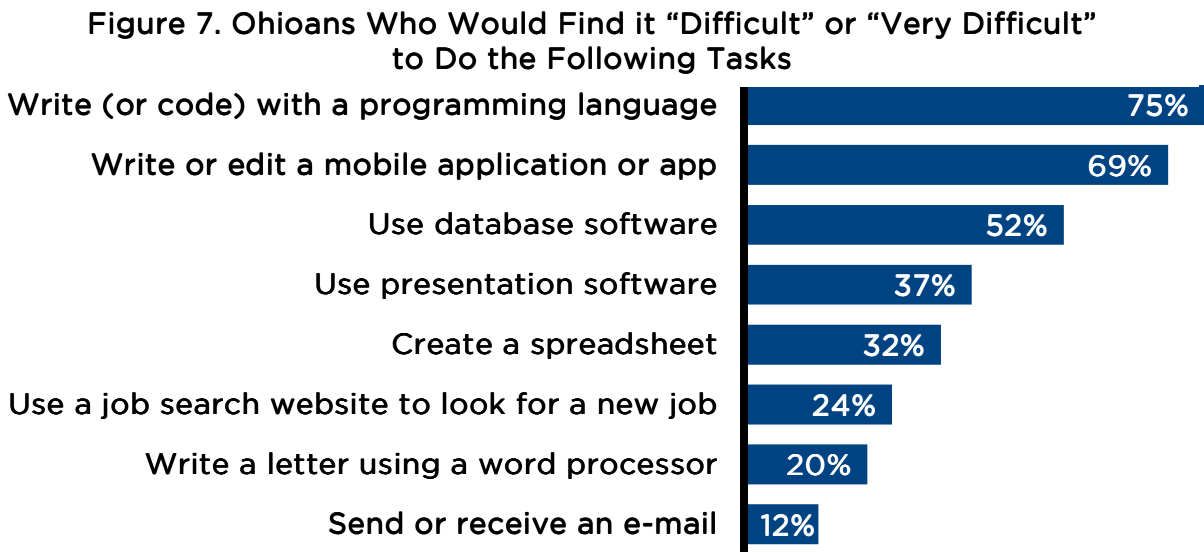
<sup>3</sup> Partridge, Mark, Rembert, Mark, Feng, Bo. *Connecting the Dots of Ohio's Broadband Policy*. Swank Program in Rural-Urban Policy - Released April 2017.

<sup>4</sup> Pew Research Center, November, 2015, *Searching for Work in the Digital Era*.

Trying to get a job without the necessary skills can be a frustrating endeavor, though. Some Ohio adults have turned to the internet to bolster their training; 15% of adult internet users in the state (representing approximately 1.23 million Ohio adults) report that they had gone online in the past 12 months to take a class.

Developing the digital workforce skills that employers require can be essential to finding a job and growing a career. Simply increasing broadband access in an area can ironically have a detrimental effect on local employment, as local businesses gain the ability to outsource jobs to skilled workers outside of the region.<sup>5</sup> Therefore, the authors of The Ohio State University’s study determined that, “broadband expansion policies should be coupled with targeted economic development efforts that include entrepreneurial support, internet literacy, and skills development.”<sup>6</sup>

Unfortunately, many Ohioans still lack the digital skills necessary to remain competitive in the modern workforce. Nearly one in four (24%) say they would have a difficult or very difficult time simply searching for a job online (Figure 7).



This suggests that while many Ohioans may have access to home broadband service, many would still benefit from opportunities to partake in digital skills training.

<sup>5</sup> Partridge, Mark, Rembert, Mark, Feng, Bo. *Connecting the Dots of Ohio's Broadband Policy*. Swank Program in Rural-Urban Policy - Released April 2017.

<sup>6</sup> Ibid.



## Conclusions

While home broadband adoption has slowed in Ohio, as it has across the United States, many opportunities are available to those who are making the effort to do so. For many, broadband adoption means access to continued education, job opportunities, and entrepreneurship. For others, it means the ability to stay in touch with government offices, interact with their child's school, and save money by buying online.

Increased access alone is not going to be an economic panacea, though. Ohio must improve its ability to offer digital skills training and provide communities ways by which they can ensure that their residents will be able to find good jobs. Doing so ensures that Ohioans will be ready for whatever may come.