Senate Finance Committee

Senator Oelslager

Chair

Testimony of

Dr. Roberto Gallardo, Purdue Center for Regional Development

Purdue University

April 9, 2018

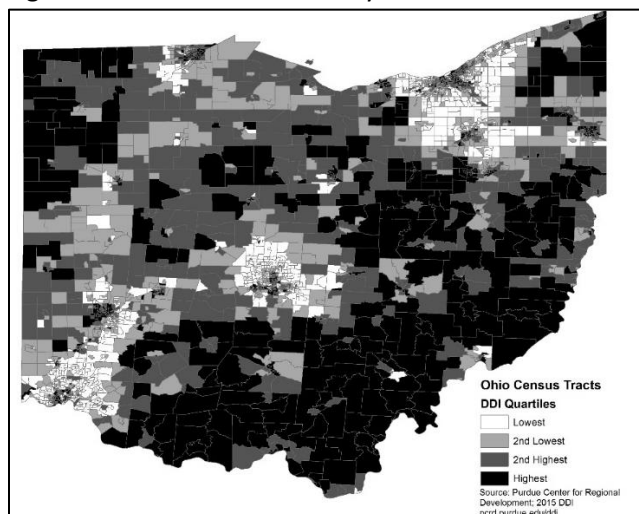Senate Bill 225: Ohio Broadband Development Grant Program

Thank you for providing me with the opportunity to submit proponent testimony to the members of the Senate Finance Committee in support of Senate Bill 225, legislation that would create the Ohio Broadband Development Grant Program. I am assistant director of the Purdue Center for Regional Development. I hold an engineering undergraduate degree, a master's in economic development, and a PhD in Public Policy. I have worked my entire career in an Extension and Research position, primarily in the community economic development area. I am also a member of the National Digital Inclusion Alliance board.

The digital age continues to unfold and its applications become more and more sophisticated. Mature applications such as social media and e-commerce, to name a few, have been around for at least ten years and have transformed our socioeconomic landscape. Academic research on the positive impact of broadband is extensive (see Addendum). Today, we hear about artificial intelligence, mixed reality, driverless cars, telehealth, and telework among other. These newer applications will not only continue to disrupt the current context but have a tremendous potential to increase the quality of life for anybody that has access to the technology as well as the know-how.

The common denominator of these applications of course, is broadband. Not only access, but affordability and use as well. In the ten years I have been working with rural communities across the country helping them transition to, plan for, and prosper in the digital age, the digital divide is the number one threat to their community economic development. The digital divide exists between those that have access, can afford, and leverage the technology to increase their quality of life versus those that do not have access, cannot afford, and/or lack the skills to leverage the technology.

Public Policy 101 dictates that an agreement on the problem is the critical first step. For this reason, I developed a digital divide index or DDI to help define the issue and jumpstart meaningful conversations. This DDI ranges from zero to one hundred, where a higher number depicts a higher digital divide at the neighborhood or census tract level. This score is composed of both broadband infrastructure/adoption and socioeconomic characteristics known to impact technology adoption. DDI discussed today is from 2015 since one FCC dataset needed for 2016 (latest year available) has not been published.

Figure 1. Ohio Census Tracts by DDI Quartiles

Ohio Census Tracts
DDI Quartiles

  Lowest
  2nd Lowest
  2nd Highest
  Highest

Source: Purdue Center for Regional
Development; 2015 DDI
pcrd.purdue.edu/ddi

Out of the approximately 11.5 million Ohio residents in 2015, 2.3 million or about 20 percent lived in neighborhoods where the divide was the highest (dark color in Figure 1). Moreover, of these 2.2 million about 900 thousand or 38 percent lived in rural areas versus less than 7 percent in urban neighborhoods, clearly highlighting a rural-urban divide. About 27 percent of those in prime working age (ages 25 to 54) in the neighborhoods with the highest divide were not in the labor force compared to 13 percent in neighborhoods with the lowest divide. More worrisome, however, is that a third of households in neighborhoods with the highest divide had children. In other words, approximately half a million children lived in neighborhoods where the divide was highest as of 2015.

In my experience, communities that implement digital inclusion strategies tend to look inward, leveraging existing assets for development purposes, but more importantly, understand that their communities are creative and talented and that this creativity and talent needs to be plugged into the digital economy. They are aware of issues and challenges associated with the digital age, such as privacy & security concerns, and take steps to mitigate their impact. They, regardless of size, make efforts to become more responsive by engaging digitally with their residents. They understand that developing a knowledge workforce begins at a younger age and strive to create a pipeline throughout K-12. They take proactive steps to manage their online reputations. They ensure coordination among community anchor institutions and businesses to increase digital skills and access to connectivity and devices.

The DDI is a pragmatic and descriptive tool designed to increase awareness. Variables included in the index range from percent population without access to fixed 25/3 to average advertised download and upload speeds to socioeconomic indicators known to impact technology adoption. More information on the DDI's methodology is available at pcrd.purdue.edu/ddi.

To expand a bit on why average advertised speeds were included in the DDI. Speed is becoming extremely important as broadband applications become more sophisticated. As other regions in the world have access to faster speeds, the web and its applications will evolve accordingly. For example, try browsing the web today using dial-up.

Imagine the speeds required for 3D holograms or managing hundreds of real-time sensors in farms and manufacturing facilities and/or hundreds or thousands of driverless cars across the state. Would you like your driverless car to buffer when driving through a rural section of the state? If we could equate Internet speeds with miles per hour, on average today we get about 3 miles per hour to 50 miles per hour, depending on the technology. At this speed, look at what is possible today. Now, imagine having ubiquitous speeds of 1,000 miles per hour. What applications will surface then? I commend this bill for requiring the minimum broadband speed of 25/3. However, I strongly believe that aiming at the minimum speed today is like trying to drive a car looking through the rear-view mirror.

Asking why do I need faster Internet is like asking why electricity if I already use candles? Nobody envisioned what electricity would bring. We are only starting to see what faster Internet can bring. More importantly, investments in infrastructure need to be paired with digital inclusion efforts, including, but not limited to improving digital literacy. A recent report by the Brookings Institution found that two-thirds of new jobs between 2010 and 2016 required medium to high digital skills. In order to learn digital skills, adequate broadband infrastructure is necessary.

Thank you so much for allowing me to share my research and expertise with you.