

Technology: The Issue of Broadband

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Abstract

This paper focuses on the theme of technological advancement within economic development and aims to raise awareness about the lack of broadband connectivity in communities across Ontario. A lack of broadband internet access has negative implications for business and agriculture within these communities, and thus, should be addressed accordingly through strategic alliances. Through engaging in strategic alliances, the issue of a lack of broadband connectivity can be combated to remedy the inequality that exists within this context.

Introduction

The Future Ready Framework outlines technology as one of the seven critical issues of importance to Economic Developers in the future and should be used to guide conversations regarding the future of communities (Potts 12). This is important because of the interconnections between issues, especially regarding technology, which is broad in scope and effect (Potts 18). The overlaps between technology and other important themes such as economy and talent show of the importance of looking at the implications that technology may have in other areas (Potts 22). In looking at the short, medium, and long-term futures, solutions can be found to negate any potential negative consequences (Potts 18).

Overview

During the 2019 Economic Development Council of Ontario (EDCO) Conference, the roundtable discussion for the technology sector centred on the need for Broadband internet in some southwestern Ontario municipalities such as Wellington County. This is problematic for these communities as they may fall behind in technological, economic, and talent sectors, which will impact their economic development abilities. It is crucial to be future focused as long as each community can advance together. The main issue surrounding the lack of broadband internet is the lack of available infrastructure to implement this technology (Potts 15). Access to high capacity fibre broadband networks essential for all industries and these such communities must be prepared to invest in the development strategies and resources necessary to advance their communities through the technology industry (Potts 15; SEDA 23). Broadband internet allows for greater use of online applications through larger bandwidth (Greenstein & McDevitt 620).

The growth in usage of wireless devices has led to an increase in demand for internet connectivity. This was once considered an optional luxury; however, it is apparent that internet connectivity has become essential to daily life. During the roundtable discussion, it was expressed that perhaps under-ground wires are not the way of the future and might be a financial burden that can be avoided (Guillen-Perez et al. 1). Therefore, an alternative solution must be found. One alternative option is the use of aerial vehicles, commonly known as drones, which have seen widespread increases in use over the past few years. One of the suggested uses for drones is for coverage and capacity expansion for wireless systems. These devices use inexpensive onboard computer technology which makes them the lower cost alternative to wired fibre technology (Guillen-Perez et al. 1). Therefore, the adoption of this form of technology allows for communities with limited or no broadband connectivity to be on par with others in broadband service and will prevent them from being further behind other communities.

Impact on Local Agriculture

The agricultural sector is becoming increasingly automated and dependent on wireless connectivity. The modernization of agriculture is occurring through the use of smart technologies for more efficient production to keep up with the demands of consumption (Navulur et al. 3492). Automation and wireless connectivity provide more productivity for agricultural farms, in comparison to those who use traditional methods; thus, the adoption of this new technology is prudent (Raut et al. 25).

Through the internet, these technologies can monitor trends in crop growth and soil moisture to proactively detect threats to crop output. Further to this, information such as weather services provides new insight into the decision making behind “smart agriculture” which involves the remote management and automation of specific processes (Navulur et al. 3492). This technology employs the use of wireless sensors for data collection and transmits information through broadband or Wi-Fi internet (Raut et al. 25). The pending patent application for a mobile-based automated sensor system aims to change the practice of agriculture through an affordable and accurate system that is user-friendly (Navulur et al. 3498). However, without broadband connectivity, this technology cannot be utilized, which disadvantages these farms.

Impact on Local Business

Another point of concern expressed at the roundtable conversation was the impact that a lack of broadband access has on local business, especially as most businesses in the community are home-based, and fall into the realm of the ‘gig-economy.’ A lack of broadband connectivity has an impact on local businesses, as the retail landscape changes to include more online e-commerce activity and less physical retail outlets (Potts 15). This change impacts rural small businesses as they may not have the capacity for web development or reliable access to the internet, and thus, they may be unable to maintain their business.

Technology is a critical component of a business, as computers, telephones, and other devices have become a requirement for a successful business (SEDA 20). It is vital that small businesses, especially at the local level, strive for competitiveness in their fields to ensure success by being informed about current technological advancements (SEDA 20). Companies that delay technological modernization will eventually lose competitiveness in the market and will ultimately lose in value (SEDA 20). Therefore, this further proves the need for broadband connectivity in southwestern communities in Ontario, as currently, they are unable to keep up, and may fall behind in technological advancement and ultimately, economic development. Economic developers should gain a greater understanding of the technological landscape of their communities and promote the best model of development for their needs (Potts 127). The role of economic developers within a community is to ensure that existing businesses have the resources necessary to remain competitive because if they cannot, they will ultimately fail (SEDA 20).

Strategic Alliances

Universities and colleges are critical to the future of economic development, especially regarding technological advancements, as they train the next generation of technologists who will further advance the field. Therefore, it is necessary for economic developers to maintain relationships with these institutions, especially those that lack emerging technology (Potts 127). Further, communities seeking economic development in technology should engage in strategic alliances through technology clusters and business networks. Technology clusters can vary in size, and generally occur within regions composed of two or more municipalities, and are benefitted by relationships with research universities. An example of a technology cluster is Silicon Valley, which includes multiple highly-skilled communities. Business networks consist of cooperative business firms which are interested in working within a technology cluster (SEDA 10). The economic developer should engage these relationships; however, networks and relationships must be led by the parties involved (SEDA 10). Therefore, in order for these smaller communities to be economically advanced, there must be a change in the technology available to them, as the current technology is insufficient. If this remains, there will be little likelihood that the economic development of this community will match those of their larger neighbours.

In addition to the discussion surrounding the need for broadband internet, there was much talk of South Western Integrated Fibre Technology (SWIFT). Due to the varying geography and population of Canada, it is challenging to ensure similar broadband connectivity for all, as some areas with low populations may have difficulty implementing services comparable to cities. The objective of the Telecom Regulatory Policy 2016-496 is to ensure that both rural and urban areas within Canada have access to telephone and internet services. The Broadband Fund has been commissioned to provide \$750 million in five years to ensure this. This fund will support projects deemed suitable for support in qualifying underserved areas; however, it will not support areas within a 10-kilometre range of fibre infrastructure, under the assumption that these underserved areas will eventually become connected (CRTC).

Conclusion

As technology is one of seven key issues within economic development which interconnects with the other key themes, it is essential to address the issue of broadband connectivity in smaller communities (Potts 18). Technological advancements can help further economic development in some cities; however other communities' advancements are delayed. Therefore, technological advancement should ensure that each community has a fair chance of success. Smaller communities with mainly agricultural sectors and numerous small businesses require access to fast, reliable, broadband connectivity in order to thrive. As agriculture becomes increasingly automated, there exists a pressure for the improved efficiency that accompanies this change. This is difficult as the technology exists, however may be unusable in an environment where reliable internet is scarce (Raut et al. 25) Also, as local businesses compete with e-commerce giants such as Amazon, the pressure to remain relevant and competitive centers on their ability to form an online presence, which is difficult to do without reliable internet access (SEDA 20).

Therefore, the strategic alliance between the Government of Canada, the Province of Ontario, and the South Western Integrated Fibre Technology Network, a solution may be possible (SWIFT). This initiative will bring fairness and equality to internet access across Ontario, and thus, will allow for equal opportunity in the technological advancements within economic development to thrive.

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