Technology Access in Public Libraries:

Outcomes and Impacts for Ontario Communities

Project Summary

Nordicity

Contents

The Vision

"Every Ontarian has convenient, local access to the technology they want and need, and the comfort and confidence to use it, so that they can access economic, educational, social, health and civic opportunities to achieve prosperity, advancement and overall well-being."

Bridge Technology Services Assessment Toolkit *(Bridge)* **enables public libraries to deliver on this vision by:**

Building on the collective capacity of Ontario public libraries to **deliver services that are responsive** to rapidly changing technology and to the unique needs of their communities;

Providing **evidence of the value and impact** of that investment;

Contributing to a more accurate and complete picture of how technology services fulfill the mandate of public libraries to deliver **effective and efficient services**;

Enabling libraries to understand and demonstrate how technology services **directly benefit residents of their communities**, particularly the most marginalized and highest need customers, and how these services align with the priorities of government, business and social services.

Introduction

In July 2016, Toronto Public Library (TPL) engaged Nordicity to develop a suite of resources designed to support public libraries across Ontario in the provision of technology services. The outcome of this project is the **Bridge Technology Services Assessment Toolkit (*Bridge*).**

The Project Summary presents an overview of the pilot implementation of the *Bridge* toolkit along with a selection of key findings from the participating public libraries. It explores the value of technology services that participating libraries provide to the public and outlines the potential impact that increased access to these services can have.
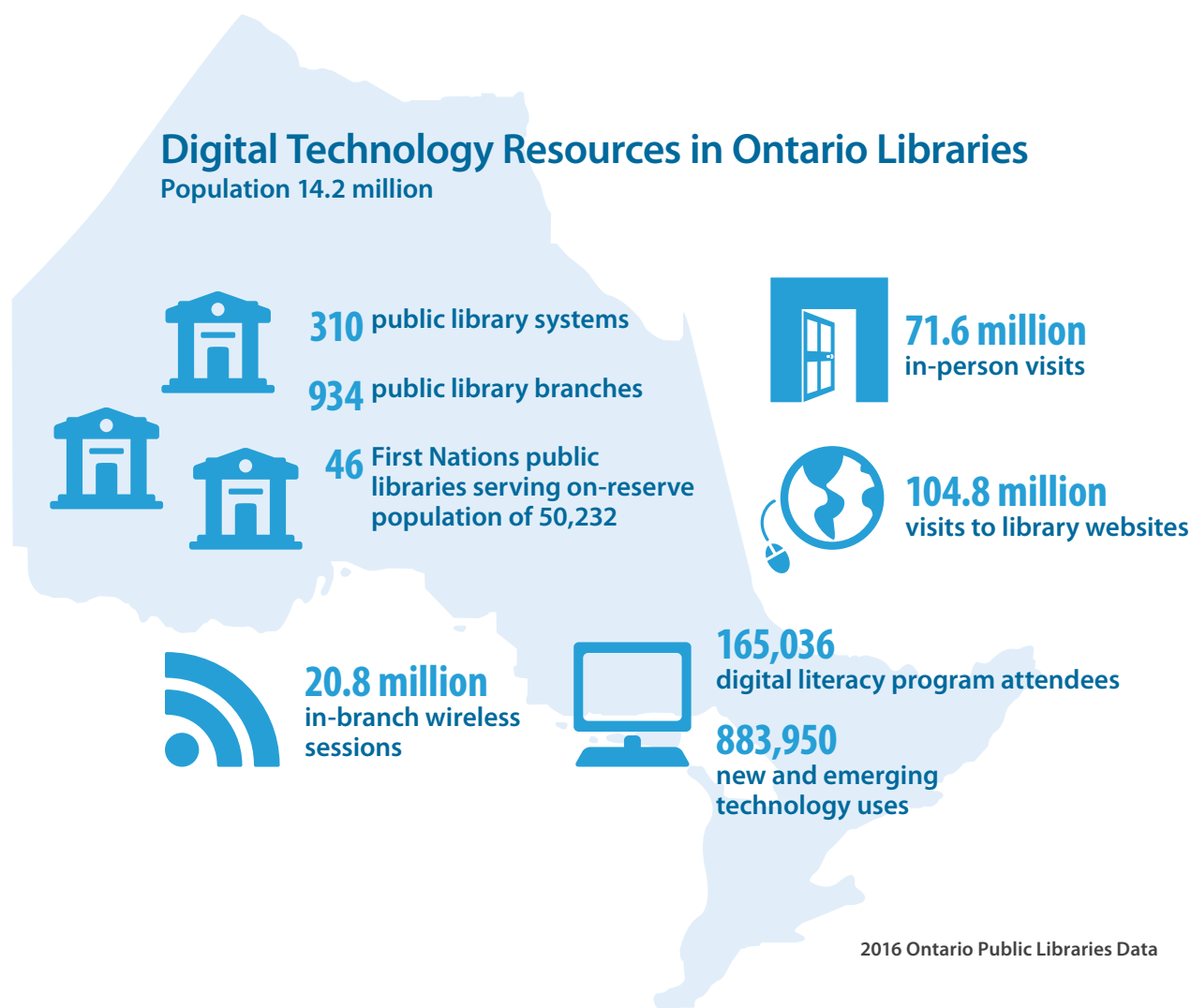
Finally, this summary presents considerations for the broader rollout of *Bridge* across Ontario public libraries. In so doing, it both documents the toolkit's current limitations and the challenges to its widespread adoption, and highlights the opportunities for libraries to positively transform the landscape for digital inclusion and digital literacy in Ontario.

This document draws on material from the *Discussion Paper and Interim Report* (June 2017) and the *Final Report on the Development and Pilot Implementation of the Bridge Technology Services Assessment Toolkit* (March 2018) to present a summary of key project findings.

Project Objectives

The aim of the *Bridge* project is to help Ontario public libraries expand the reach of the technology services that they deliver to their communities, and measure the effectiveness of those services. To that end, the **Bridge Technology Services Assessment Toolkit**, a web-based solution for gathering data, has been developed to inform decision-making on the use and outcomes of technology services offered by public library systems in Ontario.

For many Ontarians, public libraries are the primary, and often only, access point for a variety of technology resources. With their unique mandate and reach, physical and technical infrastructure, staff expertise and local community presence, public libraries play a critical role in addressing the digital divide. As shown in the figure below, public libraries across the province are providing essential technology services to millions of Ontarians each year (data shown for 2016).[1]

Digital Technology Resources in Ontario Libraries
Population 14.2 million

310 public library systems

934 public library branches

46 First Nations public libraries serving on-reserve population of 50,232

71.6 million in-person visits

104.8 million visits to library websites

20.8 million in-branch wireless sessions

165,036 digital literacy program attendees

883,950 new and emerging technology uses

2016 Ontario Public Libraries Data

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1. Prepared by Toronto Public Library, based on data from approximately 380 public libraries, First Nations public libraries and contracting organizations (available at *ontario.ca/data/ontario-public-library-statistics*)

Bridge has the potential to position the public library sector in Ontario as a leader in the advancement of outcome measurement practices for peers in other jurisdictions, as well as across the culture sector and beyond.

The Challenge and Opportunity

In today's world, social and economic participation are highly dependent on the ability of its citizenry to navigate the digital world and interact with digital information and networks. Without access to technology and the skills required to use it, individuals are at a risk of exclusion from activities and experiences that are critical to their well-being and success.

Essentially, *digital inclusion* and *digital literacy* are increasingly basic requirements for active involvement in 21st century life, be it personal, civic, social or professional.

Despite high levels of broadband and mobile penetration, connectivity gaps remain across the province, primarily driven by lack of affordability and choice. These gaps are amplified in rural or remote regions (e.g., First Nations communities) and among low-income populations. As the impact of digital technology on personal and professional development continues to permeate every aspect of life, the challenge facing communities across Ontario is their ability to provide equitable access to connectivity, current and emerging technologies, and training and support for people to fully participate in society and the economy.

Digital Inclusion: How communities and individuals access the technological capacity to pursue economic and educational opportunities, and to participate in civic life.[2]

Digital Literacy: The ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.[3]

2. As drawn from the Edge Initiative, Edge Website, "Edge: where people connect, communities achieve" (2016).

3. As defined by the American Library Association, ALA Connect Website, "Digital Literacy Definition" (September 14, 2012).

The Role of Public Libraries

Public libraries are already at the forefront of providing access to information and skills to people of all ages, abilities and backgrounds, on a highly localized scale. As such, they are perfectly positioned to take a leading role in addressing digital inclusion and digital literacy in their communities. Public libraries across the province provide their customers with the opportunity to connect to the Internet and use equipment ranging from desktop computers to 3D printers. As welcoming community hubs for both self-directed discovery and structured learning, libraries also support the development of digital comfort and skills.

In addition to contributing to these basic requirements for participation in the digital world, public libraries support the full spectrum of social and economic applications of current and emerging technologies. From a social perspective, the range of technology services at public libraries enables people of all ages to connect with friends online and to access news, current events and digital government services, all of which supports civic engagement and democracy.

Public libraries also provide both one-on-one support as well as structured classes on how to interact with, understand, and evaluate this information.

From an economic perspective, public libraries help to drive competitiveness and innovation by providing access to new and emerging technology services such as virtual reality tools, design hardware and software, coding classes and audio-visual recording equipment. In this way, public libraries encourage both creative expression and entrepreneurial experimentation. Existing businesses can use the range of technology services at libraries to connect with potential customers, partners or investors, or access the information they need to better understand their markets. Individuals, on the other hand, can keep their skills up to date by engaging in lifelong learning through digital learning platforms (e.g., Lynda.com) or through structured technology training courses offered by libraries.

Actionable Data to Match Library Technology Services to (Evolving) Community Needs

Technology services are rapidly becoming more sophisticated and varied, and public libraries continue to adapt to evolving ways of learning, creating and interacting with information. At the same time, the needs of each community in Ontario are vastly different. To develop responsive technology services, public libraries must plan services with their specific communities' needs in mind, track the delivery and update of those services and consult customers on their experiences.

Each step of this service delivery process should be driven by evidence. To achieve this, libraries must have access to current, reliable and actionable data, such as participation rates in technology training programs, or feedback from customers on the activities they engage in through the available technology services at their local branch. A framework for measurement and evaluation enables informed decision-making, and easy-to-implement tools allow public library systems of all sizes and resource capacities to use data and customer feedback to better meet the specific needs of their communities.

A consistent, widely adopted approach also has the added benefit of comparability – public library systems would be able to track changes in performance over time and benchmark their technology services to those delivered by their peers across the province. Finally, access to reliable, timely and relevant data helps demonstrate the value of investments in technology to stakeholders.

The Solution

Bridge Technology Services Assessment Toolkit

To support Ontario public libraries' ability to deliver technology services more efficiently and with greater impact, Nordicity, working closely in collaboration with TPL and participating libraries, has developed the Bridge Technology Services Assessment Toolkit. Developed to specifically meet the needs of Ontario public libraries, *Bridge* is a customizable web-based application for libraries to capture and analyze performance and outcome data on technology services. Using *Bridge*, library systems can measure:

- **Availability:** the volume of technology services offered, such as the number of Internet-enabled public work stations

- **Usage:** uptake of technology services by library customers, such as the number of participants in a technology training program

- **Outcomes:** the kinds of activities and results that technology services enable for library customers

- **Service delivery:** gauge how prepared frontline staff are to deliver technology services such as their ability to answer technical and other questions about the technology services they support

Library staff can use *Bridge* to view results, compare those results with previous months, and see how their library's performance compares with other Ontario public libraries.
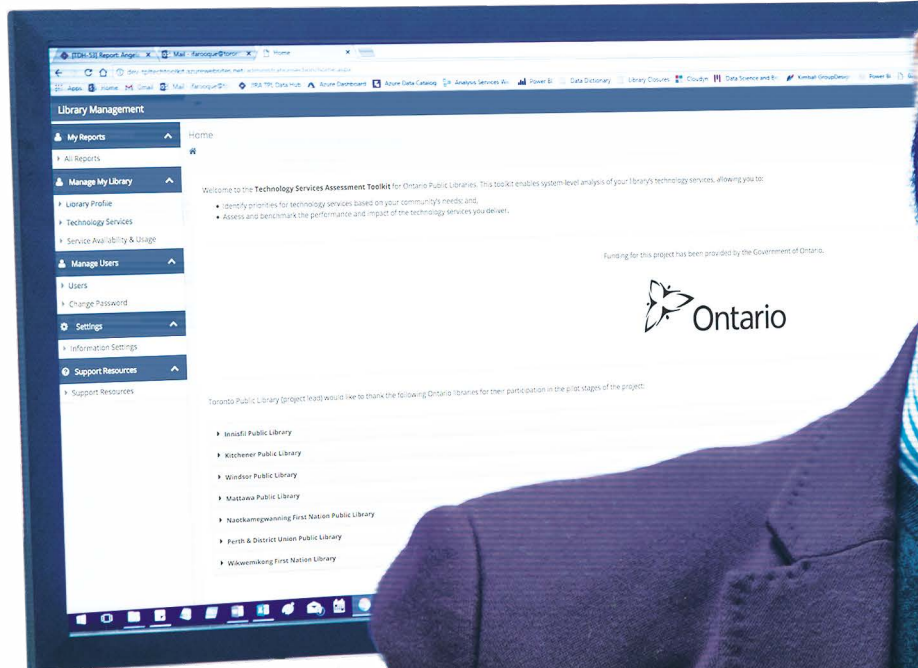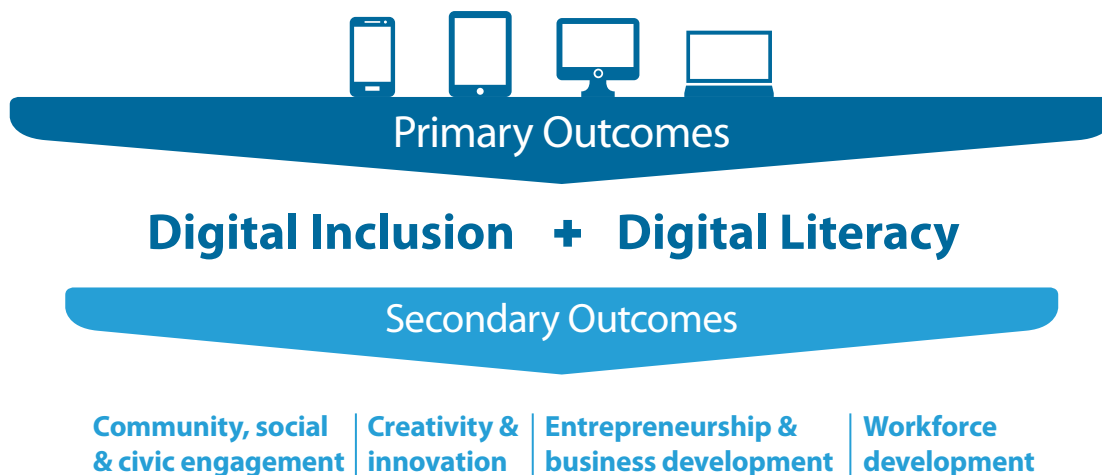
Outcomes, Impacts and Opportunities to Close the Gaps

One of the primary objectives of the research and consultation conducted in the project was to determine outcomes that would reflect the range of technology services offered by public libraries across Ontario, and how these services benefit Ontarians.

The framework developed is two-tiered. Providing **digital inclusion** through access to technology and **digital literacy** skills training are the primary outcomes of the technology services offered by public libraries. These outcomes, in turn, enable a range of secondary outcomes, namely:

- **Community, social and civic engagement:** Increased community cohesion, and social and civic participation

- **Creativity and innovation:** Engagement in the creative process enabling self-expression, and creative and innovative content

- **Entrepreneurship and business development:** Support to start, manage, and grow small businesses which support employment

- **Workforce development:** Preparation of job-seekers for the workforce through educational activities, employment, professional development and lifelong learning opportunities

Primary Outcomes

Digital Inclusion + Digital Literacy

Secondary Outcomes

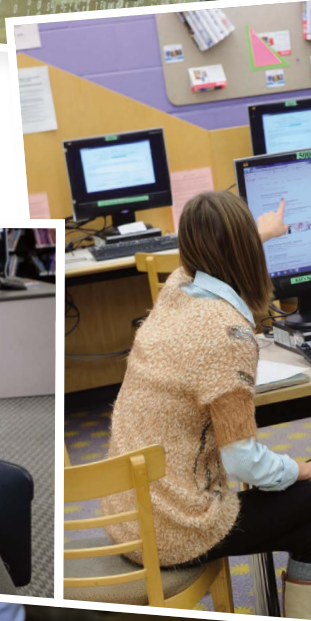| Community, social & civic engagement | Creativity & innovation | Entrepreneurship & business development | Workforce development |

Together, these two primary and four secondary outcomes create a framework to measure and benchmark how technology access in public libraries improves the lives of residents across Ontario while advancing the broader impact of government strategies and programs. This framework serves as the structural basis of *Bridge*, allowing public libraries across Ontario to measure service performance and outcomes in each area in a way that is streamlined and comparable.

Bridge also helps libraries understand and demonstrate not only how technology services directly benefit residents of their communities, but how these services align with and support social and economic priorities at multiple levels of governments.

What We Found: Key Findings from the Pilot

The Customer Survey, generated by *Bridge* for each library system based on their suite of technology services, was made available from July 19 to October 31, 2017 to customers who had used one or more technology services at the participating library systems during that time period. In total, the eight participating libraries gathered 1,561 Customer Survey responses.

Digital Inclusion

Public libraries across the province primarily promote digital inclusion by providing Internet and computer access to customers, including Internet-connected workstations, wireless Internet at the library, and offsite access to the Internet.

The preliminary results suggest that most people who use library technology services would not otherwise have had access to at least some of that technology. More strikingly, nearly half of the customers who use technology services use it to access the Internet when they would not otherwise have been able to do so. Therefore, it appears that public libraries in Ontario make a significant contribution to bridging inequities of access to technology.

Respondents who would not have otherwise had access to technology:

56% used technology at the library

68% among older customers age 55+
63% among customers identifying as low income

46% accessed the Internet at the library

Digital Literacy

Public libraries facilitate the development of digital literacy that is critical to living and working in the digital age. Technology services at public libraries encompass drop-in or scheduled one-on-one support as well as classes designed to develop specific skills in a more structured setting. Training support services offered by libraries across Ontario range from basic computer skills and email to Internet safety to programming and coding.

Ontario public libraries not only play a role in introducing customers to new technologies, but the high rate of longer-term adoption indicates that these new technologies continue to be relevant to customers even after their initial introduction. The library environment and support provided by staff are effective in making customers comfortable with the continued use of new technology, as well as contributing to an increase in digital comfort overall.

44% of respondents who used technology services were introduced to new technology

52% among older customers age 55+
92% of those introduced to new technology continued to use it

84% of respondents reported increased digital comfort after using one or more services

91% among customers identifying as a visible minority

Community, Social and Civic Engagement

The combination of Internet connectivity, access to equipment and software, and digital literacy training and support available at public libraries enables customers to establish and maintain meaningful connections, engage socially, contribute to their community and access public resources.

Activities associated with community, social and civic engagement span the full range of technology services, ranging from a high-speed Internet connection that enables social activities such as connecting with friends and family (e.g., via Skype) to training on how to search the Internet and navigate social media networks.

Even with the shift to digital, access to current news and events continues to be a major activity in public libraries, though now through the use of technology. In addition, libraries are now enabling people to connect with friends and family. As seen by this study, these activities contribute to significant increased levels of community and social engagement.

81% of respondents reported an increased level of community engagement

68% of those using technology for community engagement did so to learn about current news and events

81% of respondents reported an increased level of social engagement

34% of respondents had used technology service(s) to access online government resources

higher among older customers age 55+ and customers identifying as low income or visible minorities

Creativity and Innovation

Public libraries are at the forefront of providing cutting-edge creative tools to amateur and professional creators alike. Digital tools and supports at public libraries foster creativity and innovation, in part through enabling collaborations and introducing community members to the potential of digital tools to advance creativity and innovation.

The most common creative products made using a library technology service were multimedia and writing projects, with immigrant customers and those identifying as low income more likely to have completed a writing project. Among the respondents that reported "other" to this question, the most common product was a 3D printed project.

41% of respondents used technology service(s) to make a creative product

higher among younger customers under 34 years of age

multi-media and **writing projects** were the most common types overall

Entrepreneurship and Business Development

Digital literacy is foundational to participating in the knowledge economy. The public library's role in supporting entrepreneurship extends beyond basic digital skills training. Much support is available at libraries where staff direct customers to appropriate business-related resources and help them navigate regulatory requirements online. Some public libraries also run programs that target business skills, many of which incorporate technology services including on-site business resources and virtual business resources. Public libraries also provide access to work spaces, which have the potential to spark networking and collaborations among the small businesses and entrepreneurs that use library services to start, manage or expand their businesses.

26% of respondents used technology service(s) to start, manage or grow their business

93% of these businesses employed fewer than 20 employees

Workforce Development

In addition to providing opportunities for customers to learn *about* technology (i.e., digital literacy), public libraries allow customers to learn *through* technology. Technology services at public libraries assist people of all ages in updating their skills, finding work and excelling academically and professionally in a connected world. Public libraries contribute to workforce development, as libraries facilitate access to education and lifelong learning; the development of employable skills; and resources supporting the various stages of the job search process.

The technology access provided by the library to help customers with their job search skills resulted in employment success for almost half of the respondents.

64% of respondents used the technology service(s) for educational activities

higher among younger customers under 34 years of age, and customers identifying as immigrants or visible minorities

completing course work or **homework** were the most common types overall

45% of respondents used the technology service(s) to develop employable skills

higher among younger customers under 34 years of age, and customers identifying as a visible minority

technical skills were the most common skills developed overall

36% of respondents used the technology service(s) to develop job search skills

higher among customers identifying as low income, immigrants or visible minorities

finding information related to a job, **accessing job boards** and listings, and **resume building** were the most common skills

43% of respondents who used the technology service(s) to improve their job skills were successful in finding a job

Conclusions and Key Learnings

The *Bridge* pilot project has made significant strides toward developing a practical and relevant solution that can help Ontario public libraries understand the impact their technology services are having. In turn, it has built capacity in the participating libraries. These key learnings from the pilot project can help to inform improvements to the toolkit and its use that would make it more useful and valuable to public libraries moving forward:

1 The rollout of a refined toolkit to a wider group of Ontario libraries should allow continuous improvement of the solution driven by the needs of Ontario libraries. As more data is entered into *Bridge*, further functionalities and usability features can be added to increase its effectiveness in helping libraries measure and plan their technology services.

3 Using *Bridge*, or any other solution that involves the gathering and interpretation of data, requires a basic level of comfort with, understanding of, and capacity to make sense of the data generated. To maximize the benefit of a tool such as *Bridge*, libraries in Ontario would need to increase their data collection and analytic capacity and skills. They would also need to incorporate these processes into their respective broader organizational workflows. As such, it is recommended that the technical rollout of *Bridge* be accompanied by a skills development program for library staff.

2 It is valuable for public libraries to be able to compare the outcomes achieved by their technology services to other *Bridge* users (whether similar in size, community make-up, or geography). In time, *Bridge* will represent a variety of public library systems across the province. While this need was identified at the start of the project, the size of the pilot was not large enough to allow for the development and/or testing of more granular comparisons. It is nonetheless recommended that this feature be explored as *Bridge* continues to be developed.

4 Because nearly all participating libraries faced significant challenges collecting availability and usage statistics, there were major gaps in the completeness of data entered by libraries. While the module designed to collect this data was based on consultations with stakeholders, and saw significant changes in functionality after the first pilot, it could be further refined. It is recommended that this module be revisited after further consultations with a larger group of libraries, leveraging the learnings from this pilot.

Public libraries across Ontario strive to deliver services that are responsive to the rapidly changing technology landscape as well as the unique needs of their communities. *Bridge* improves libraries' ability to make informed, evidence-based decisions and understand how their services are being used. However, without the broad adoption of *Bridge*, the efficacy of the toolkit and libraries' collective capacity to deliver on the shared vision of digital inclusion and digital literacy for all Ontarians will be limited.

As public libraries adopt *Bridge* to more clearly identify their technology service needs and better demonstrate the value of these services, sustainable and predictable funding will also be critical to ensure adequate access to technology services across Ontario and to realize the vision of ensuring that:

Every Ontarian has convenient, local access to the technology they want and need, and the comfort and confidence to use it, so that they can access economic, educational, social, health and civic opportunities to achieve prosperity, advancement and overall well-being.

Acknowledgments

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