



Digital Connectivity Strategy

Date: April 14, 2022
To: TTC Board
From: Chief Strategy and Customer Officer (Acting)

Reason for Confidential Information

This report contains information about a trade secret or scientific, technical, commercial, financial or labour relations information, supplied in confidence to the City or local board, which, if disclosed, could reasonably be expected to prejudice significantly the competitive position or interfere significantly with the contractual or other negotiations of a person, group of persons or organization.

Summary

Like most transit agencies around the world, the TTC is preparing to leverage the digital transformation wave to stay connected to its customers and deliver new levels of service. This transformation will be built on the underlying digital infrastructure that will be vital for the TTC in delivering on its mandate to modernize. Getting the foundational infrastructure in place is critically important to ensuring an organization is equipped for digital success. Most importantly, implementing a digital connectivity strategy will help improve the customer experience, streamline operations, meet public health and safety standards, embrace innovation, and realize potential new revenue streams (including digital advertisement).

In 2021, TTC staff conducted an assessment of existing infrastructure agreements and consultation with City staff as part of efforts to navigate frequent unsolicited proposals from existing and potential partners. Opportunities have ranged from wireless communications antenna on TTC property to Wi-Fi infrastructure on TTC buses. The TTC wants to take a proactive approach to ensure that there is a well-defined strategy to assess connectivity infrastructure and digital opportunities that advances the objectives of the TTC as well as the City of Toronto.

The four strategic objectives of the Digital Connectivity Strategy are designed to support the City's work of bridging the digital divide and increase the penetration of affordable high-speed internet services where it is needed the most. The proposed objectives of the Strategy are:

1. **A Connected TTC** – Maximize seamless digital connectivity across all the TTC network for ridership and establishing a network ecosystem to enable the end to end customer journey of the connected digital experience.

2. **An Exceptional Customer Experience** – Better knowledge of TTC customers, moving customers more reliably and improving the customer experience leveraging data and digital tools.
3. **Enhanced Operations and Employee Experience** – Enable more efficient, connected and reliable transit operations, maintenance, safety monitoring and internal processes to improve the employee experience and reduce operational costs.
4. **A Digitally Connective City** – Support the City of Toronto’s digital initiatives by leveraging TTC assets and aligning TTC initiatives to help it become more economically, socially and environmentally connected to the community.

The purpose of this report is to provide an overview of the Digital Connectivity Strategy and outline future actions to support this Strategy.

Recommendations

It is recommended that the TTC Board:

1. Endorse the principles and strategic objectives of the Digital Connectivity Strategy contained on pages 5, 6 and 7 of this report.

Financial Summary

There are no financial impacts arising from the approval of the recommendation in this report. The Digital Connectivity Strategy proposes key objectives, which will be used as a framework to evaluate changes to existing contracts or the evaluation of future proposals. Initiatives implemented under the Digital Connectivity Strategy can result in new revenue generating opportunities for the TTC, in addition to improving operations and the customer and employee experience. Any future financial implications, including cost savings or revenue generation will be identified in future reports and subsequent budget submissions.

The Chief Financial Officer has reviewed this report and agrees with the financial impact information.

Equity/Accessibility Matters

A cornerstone of the TTC’s Corporate Plan 2018-2022 is accessibility, and as a proud leader in providing accessible public transit in the city of Toronto, we are committed to ensuring reliable, safe and inclusive transit services for all our customers. This is further supported by the work of the Digital Connectivity Strategy, which at its core seeks to maximize opportunities to bring digital connectivity to our customers and help bridge the digital divide in underserved communities in the city with the understanding that all residents do not have equal access to internet and Wi-Fi networks. Knowing that there are socio-economic benefits of being connected online and having greater access to digital services, the Digital Connectivity Strategy aims to bring more connectivity, inclusion and opportunities to customers.

Aligned to the City of Toronto's ConnectTO program, this digital equity work includes piloting free public Wi-Fi on routes for Neighbourhood Improvement Areas (NIAs), which will help reduce barriers and create greater equitable access to digital connectivity for our riders. Digital accessibility measures will be implemented in compliance with the *Accessibility for Ontarians with Disabilities Act, 2005 (AODA)*. Findings of these pilot programs will further impact future recommendations and initiatives towards digital equity.

Decision History

On February 2, 2021, Toronto City Council approved the Affordable Internet Connectivity for All – ConnectTO that seeks to collaborate with the private sector to bring affordable high-speed internet for all Toronto residents and businesses, especially those who are vulnerable and underserved by digital infrastructure.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.EX20.8>

Issue Background

The City's ConnectTO program, through collaboration with the private sector, seeks to leverage municipal assets to bring greater connectivity, resiliency and prosperity to more people.

On February 2, 2021, Toronto City Council approved ConnectTO – a City-driven collaborative program that aims to leverage the use of municipal resources and assets to increase digital equity and expand access to affordable, high-speed internet to underserved Toronto residents. This program also aims to streamline and update existing City processes to ensure internet connectivity (public Wi-Fi, laying fibre conduits in existing construction work, etc.) is embedded in planning and execution of various City activities. The TTC's Digital Connectivity Strategy is aligned with ConnectTO in seeking similar outcomes, and therefore, the work of the Digital Connectivity Strategy will ensure that the TTC leverages opportunities to support the objectives of ConnectTO.

In May 2021, the TTC launched free public Wi-Fi on two bus corridors as part of a phased proof-of-concept trial. The trial began with the 35/935 Jane and 102/902 Markham Rd routes with a second phase of the trial continuing in 2022 with external vendors using their own equipment and Wi-Fi network on two additional bus corridors. The findings of the trial will help determine future recommendations for public Wi-Fi on surface transit and help increase digital equity and access as part of the City of Toronto's ConnectTO program.

A strategy is required to proactively plan for future digital infrastructure opportunities

In 2021, TTC staff conducted an assessment of existing infrastructure agreements and consultation with City staff as part of efforts to navigate frequent unsolicited proposals

from existing and potential partners. Opportunities have ranged from wireless communication antennas (“small cells”) on TTC property to Wi-Fi infrastructure on TTC buses. It has become apparent, in light of the numerous digital opportunities, that the TTC requires a well-defined strategy to assess these commercial proposals to ensure that they advance the TTC’s corporate objectives.

Comments

Seamless digital connectivity is an integral part of any city’s modern infrastructure and will play an increasingly important role in attracting ridership and providing equity

As the world becomes more digitally connected, public transit operators face a myriad of evolving challenges and opportunities. With increasing customer expectations, rapidly shifting technology, and the opportunity for enhanced operations, transit systems must begin to refine strategies around digital connectivity.

Digital connectivity is a vital part of any city’s modern infrastructure. Toronto is home to some of Canada’s fastest internet infrastructure, but all residents do not have equal access. Improved digital connectivity can:

- Improve the customer and employee experience by providing ubiquitous coverage so people are always connected.
- Enhance equity with free access to public Wi-Fi by ensuring that no one is excluded from the digital age and the socio-economic benefits of being online.
- Increase ridership and encourage customers to opt for public transit, particularly in light of decreased ridership as a result of the COVID-19 pandemic.
- Optimize data collection and analysis focused on getting to know customers and responding to their changing needs.
- Improve financial sustainability by leveraging new technologies to reduce costs, increase revenue and maximize efficiency across the organization.
- Improve safety and system-wide communications to notify customers in the event of service disruption, while optimizing public transit planning.
- Contribute to broader public benefit, including meeting climate sustainability goals while improving air pollution and decreasing traffic congestion.
- Serve as the foundation for “smart city” initiatives by integrating real-time information, news updates, government notices and offers from local businesses into public transit.

The TTC has the opportunity to realize a multitude of benefits for the organization, its customers and the City of Toronto at large by leveraging the digital transformation wave and investing in foundational infrastructure and technologies.

To this end, the TTC has developed a Digital Connectivity Strategy in order to provide the organization with guiding principles and a framework to assess connectivity infrastructure and digital opportunities, and better position the TTC to benefit from the digital transformation wave.

The purpose of developing a digital connectivity strategy is to provide the TTC with guiding principles and a framework to assess connectivity infrastructure and digital opportunities

The focus of the Digital Connectivity Strategy has been on advancing the following fronts:

- Assessing the current digital connectivity landscape within the TTC and the City of Toronto.
- Identifying the guiding principles and objectives for evaluating connectivity opportunities and determining accompanying digital infrastructure needs.
- Developing a Use Case Matrix that will provide the TTC with a priority list of initiatives and a framework to respond to different proposals and opportunities in the future.

In addition, this work has involved the evaluation of specific digital connectivity proposals including the deployment of small cells across the subway network, an assessment of market trends around customer data and insights, and possible changes to digital advertising on the TTC.

Strategic objectives were developed for the Digital Connectivity Strategy to assess new proposals

Analysis of the TTC's corporate priorities, trends across industry, and feedback from across the organization fed into the development of the strategic objectives that are the foundation of the strategy. The strategic objectives include:

A Connected TTC

- Maximize seamless and full coverage, digital connectivity across all of the TTC network for ridership and establishing a network ecosystem, which enables the connected digital experience (end to end of the customer journey) – this includes cellular coverage throughout the existing and future TTC subway network that provides an uninterrupted connection for TTC customer, staff and partners.

An Exceptional Customer Experience

- Better knowledge of TTC customers, moving customers more reliably, and improving the customer experience by leveraging data, digital tools and connectivity – this includes more frequent and real-time interactions and relaying information to customers to make navigating the system for all riders easier.

Enhanced Operations and Employee Experience

- Enable more efficient, connected and reliable transit operations, maintenance, safety monitoring and internal processes to improve the employee experience and reduce operational costs.

A Digitally Connected City

- Support the City of Toronto's digital initiatives by leveraging TTC assets and aligning TTC initiatives to help it become an economically, socially and environmentally connected community – this includes expanding access to free public Wi-Fi on the system and leveraging the TTC's assets to support the ConnectTO program.

The Connectivity Infrastructure Principles will guide and preface future infrastructure investments with vendors and partners

The intent of the following principles is to “future-proof” potential agreements and allow the TTC to fulfill its objectives by pursuing future digital initiatives without interfering with existing infrastructure. Establishing the TTC as a digital asset leader will position the organization for non-fare revenues related to digital infrastructure data.

- Enabling overall connectivity
 - Maximize seamless, digital connectivity to cover all ridership across all of the TTC network and physical assets regardless of riders' carrier.
 - Includes covering Canadian broadband service-level requirements of connectivity.
 - Facilitate connectivity for additional initiatives.
- Limited exclusivity on future commercial agreements
 - Limited exclusivity in terms of physical infrastructure as a commercial consideration.
- Privacy of customer data
 - Emphasize requirements for accessing, maintaining and storing the privacy of data in accordance with the Municipal Freedom of Information and Protection of Privacy Code and TTC Privacy Code.
 - Protection of personal information through safeguards against loss and unauthorized access.
- Equity and access
 - Bridge the digital divide for all customers and communities by enabling multi-channel TTC communications via digital technology.
 - Provide greater accessibility for riders with different abilities, socioeconomics, access to mobile devices, and digital literacy.
- Clarity in responsibility and ownership
 - Distinct outline of responsibility and ownership for infrastructure investment and partnerships related to TTC assets and initiatives across entirety of proposal and specific digital initiatives.

- Does not preclude existing/future initiatives
 - Partnerships and agreements should not preclude, hinder or interfere with current and future digital initiatives.
 - Partnership must enable initiatives rather than limit them.

- Transparency and data sharing
 - Sharing of data on connectivity and usage data at agreed intervals related to connectivity initiatives.
 - Ability to have transparency in terms of assessing progress and tracking metrics for revenue sharing structures and other rewards systems.

- Timeliness of connectivity development
 - Commitment on connectivity milestones and roll-out of infrastructure development and partnerships to enable realization of benefits in a timely manner.

- Policy alignment
 - Align connectivity and digital initiatives with TTC and City of Toronto responsibilities, authorities and other policies (TTC Corporate Plan, City of Toronto's digital strategies, other relevant policies, etc.)

The Digital Connectivity Strategy will allow the TTC to advance its corporate objectives and support ConnectTO goals

A Digital Connectivity Strategy will also better position the TTC to advance its overall corporate objectives, leverage partnership opportunities, enhance operational and organizational efficiency, and respond to changing customer expectations.

Regular monitoring and reporting will ensure that the Strategy remains relevant. This would include:

- Establishing an information-sharing framework and communication cadence with the City of Toronto to align its respective strategies and identify opportunities to co-ordinate planning and jointly pursue new initiatives.

- Integrating the Digital Connectivity Strategy into the Strategy Planning Cycle and establish a Digital Connectivity Reporting Dashboard by which the objectives of the Strategy are measured.

- Continuing to revisit and update the Strategy over time with annual updates being provided to the TTC Board.
- Shifting focus to the development of an implementation plan and driving implementation in order to begin realizing benefits.

This strategy will be shared with the City Manager to coordinate future planning and to establish a reporting dashboard by which the objectives of the strategy can be measured.

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Signature

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Attachments

Attachment 1: Confidential Attachment – TTC Telecommunications Network Agreement