

Saskatoon Participation in the OpenNorth Initiative

ISSUE

The Administration has identified a need for a comprehensive Smart City strategy including a supporting digital strategy to provide a roadmap for the implementation of critical digital infrastructure within the city and to support the delivery of services. The strategic outcomes, as outlined in the Smart City Strategy, will embrace the use of digital technology in the City's service delivery, and support key social and economic outcomes for citizens.

BACKGROUND

The City of Saskatoon participated in the Smart Cities challenge in 2018. Beyond this initiative there have been no specific reports to committee with respect to establishing a comprehensive Smart City strategy and the supporting digital architecture that would serve both the needs of the community of Saskatoon and the City of Saskatoon into the future.

CURRENT STATUS

The City of Saskatoon is exploring a comprehensive digital strategy for the strategic implementation of critical digital infrastructure within the city to support the services that deliver key social and economic outcomes for citizens.

DISCUSSION/ANALYSIS

Smart City

A Smart City is defined as a developed urban area that creates sustainable economic development and high quality of life by excelling in essential areas such as economy, mobility, environment, people, living standards, and government. Excelling in these areas is empowered through the use of technology and the strategic collection and use of data thereby providing significant improvements to existing services, enabling future ones and attracting economic development. A Smart City strategy provides a vision of where we are going and identifies the related strategic outcomes that will be assisted through technology. A strategy enables innovative city initiatives for parking, infrastructure monitoring, safety, and a large variety of evolving applications. It also involves the delivery of services in new and effective ways to protect the safety of citizens, address socio economic challenges, attract business development and jobs, and lower costs. Additionally, it provides the testbed for developing further innovations of technology based city and business opportunities.

Many of the strategic goals envisioned by the City of Saskatoon related to service improvements, strategic decision making, and innovation can be augmented by adopting modern digital communication technology. Becoming a recognized pioneer in Smart City initiatives along with the likes of Montreal, Edmonton, and Vancouver will greatly enhance the services provided to residents and also enhance the reputation of Saskatoon as a technology leader in Canada.

Digital Strategy

The Administration plans to develop a digital strategy in 2020 in a collaborative fashion with other communities across Canada that are facing similar challenges and questions about the emerging technological opportunities and issues. A comprehensive digital strategy creates the framework for a wide spectrum of important far-reaching corporate objectives including access to City data, enabling greater citizen inclusiveness, and providing innovative city services. Additionally a digital strategy provides a decision making structure that identifies key infrastructure requirements and provides an action plan for the creation of any future network infrastructure.

OpenNorth Initiative

The OpenNorth Community Solutions Network Advisory Service (OpenNorth) is an initiative under the federal program Future Cities Canada that provides support to Canadian municipalities in the development and implementation of smart cities projects. At no cost to communities, the initiative offers training, guidelines, templates, and personalized guidance from leading advisors on a range of topics with a focus on smart cities.

The City of Saskatoon has been approached by OpenNorth to participate in this initiative, and the Administration views this proposal as an excellent starting point for the formation of a digital strategy for Saskatoon. Communities of all sizes across Canada fundamentally share the same principles and have many of the same concerns with the significant changes caused by this emerging technology. By participating in a cooperative and collaborative way with these communities a broader strategy that closely aligns with other cities in Canada can be more assuredly created.

5G

5G is currently an emerging technology as very few smartphone and other electronic devices can connect or utilize the significant potential offered. As a result the federal government and other regulating agencies are still working to define 5G system standards. The main advantages of 5G technology are very high download/upload speeds, enhanced connectivity, and near instantaneous communication. The technology is still being thoroughly examined as concerns are raised about personal information, the environment, and impacts on other communication devices.

It is anticipated that by the end of 2020, 5G deployment in Canada will follow new industry standards and regulations, which are expected to be finalized by the end of 2020 by the 3rd Generation Partnership Project and by Innovation, Science and Economic Development Canada. Saskatoon will continue to stay current with this developing regulation framework through continued collaboration with our partners.

LoRaWAN (Long Range Wide Area Network)

LoRaWAN is a relatively simple low cost, long range, low power networking system that can be used very effectively in a large variety of monitoring and sensor applications. Compared to other network systems LoRaWAN data transfer has significantly less bandwidth. Due to its long range capabilities and low power consumption, it is ideal for

communicating with devices that require intermittent low volume transmissions. These types of sensors are expected to make up the majority of the smart city sensors that may eventually be deployed. Due to the fact that this technology operates in an unlicensed spectrum, the cost of communication is drastically lowered compared to current wireless communication technologies including cellular bands. The lower cost of the technology expands the range of possible uses and low power consumption enables battery life in the sensors to be extended eight to ten years thereby reducing maintenance costs and environmental impacts

Pilot 5G and LoRaWAN Deployments

The City of Saskatoon will be investigating the small scale deployment of 5G and LoRaWAN networks in partnership with telecommunication companies and with the University of Saskatchewan. By undertaking these initiatives as test cases it is possible to examine the impacts from a variety of viewpoints with respect to social concerns, privacy, the environment, and many other issues. Saskatoon has already taken preliminary steps with the University of Saskatchewan and SaskTel regarding the potential deployment of a LoRaWAN for a wide array of applications throughout Saskatoon.

For the most part many of the other new technologies do not necessarily rely on tower antennas but rather use underground fiber connections and powered short range antennas connected to existing infrastructure such as power poles or street furniture. By reviewing opportunities with telecommunication companies and utilizing existing agreements it will be possible to develop the connectivity required to deploy these sophisticated networks.

The proposed digital strategy is a considered an incremental approach to collaborate with universities, telecommunication partners, and other communities to move forward with a strategy that provides access to this emerging technology while also considering potential impacts. If new risks or implications resulting from these network deployments are identified in the future, Saskatoon will be better equipped to understand and adapt with the development of a balanced strategy and the strength of the partnerships that have been already cultivated.

FINANCIAL IMPLICATIONS

There are no financial implications as existing internal resources are anticipated to be sufficient to complete the digital strategy and pilot deployment as described.

OTHER IMPLICATIONS

There are no other implications at this time.

NEXT STEPS

The Administration will commence work on a digital strategy in 2020. The strategy will be presented to committee for review, which is currently anticipated for late 2020.

Report Approval

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