

# LIGHTING THE PATH FOR YOUR NETWORK PLANNING

DIGITAL TRANSFORMATION SOLUTIONS  
FOR SERVICE PROVIDERS

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JAN 2021

**SaskTel**   
*International*

A SASKTEL INTERNATIONAL PUBLICATION

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## ABOUT OUR PARENT COMPANY

SaskTel is a Communications Service Provider (CSP) operating in the prairie province of Saskatchewan, Canada, with over 110 years of experience. SaskTel has over \$1.2 billion in annual revenue and approximately 1.35 million customer connections globally including nearly 300,000 FTTP homes passed, 611,000 wireless accesses, 338,000 wireline network accesses, and 283,000 internet accesses. SaskTel owns and operates Saskatchewan's largest network that connects 99% of the population over a vast area of 651,900 square kilometres.

Recognized as a global leader in fiber optics, SaskTel has completed many large-scale and innovative projects over its many decades in business. In 1984, SaskTel completed the world's longest fiber optic system at the time in its home province of Saskatchewan, spanning a distance of 3,268 kilometres and connecting 52 communities. SaskTel continues to lead global trends and collaborated on one of the largest construction projects of the 20th century, the English Channel Tunnel. The English Channel Tunnel is an underwater railway that spans over 50 kilometres and connects England to France. The tunnel is used by passenger trains and freight trains with average traffic of 60,000 passengers a day. SaskTel had a vital role in this project and was responsible for the design, installation, testing, and audit of the entire communications system

**\$1.2 BILLION**  
ANNUAL REVENUE

**110+ YEARS**  
OF EXPERIENCE

**300,000**  
HOMES PASSED

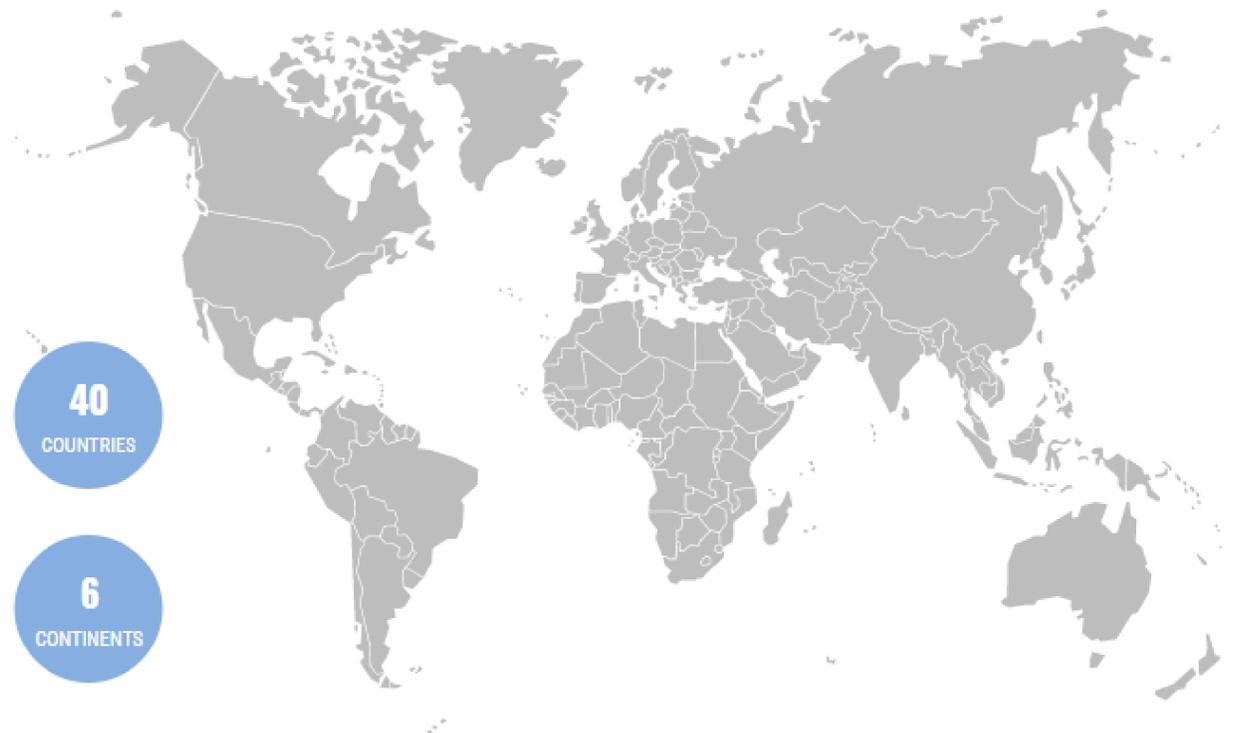
**1.35 MILLION**  
CONNECTIONS

## ABOUT US

SaskTel International (SI) is a wholly-owned subsidiary of SaskTel. Leveraging resources from SaskTel's pool of highly skilled staff, SaskTel International collaborates with CSPs to develop custom network strategies. Unique to SaskTel International is its ability to manage fiber projects in their entirety from conception to completion. Building on SaskTel's experience, SaskTel International provides leadership for custom designs, engineering, construction, and overall management of the network.

With over 35 years of experience working with fiber, SaskTel International is proud to share this knowledge with clients around the world. In addition to its role in the English Channel Tunnel project, SaskTel International has provided fiber consulting services in several communities:

- Nassau, New Providence, Bahamas
- Port of Spain, Trinidad
- Madhyah Pradesh Province, India
- Seattle, Washington, USA
- Los Angeles, California, USA
- Salt Lake City, Utah, USA
- San Francisco, California, USA
- Atlanta, Georgia, USA
- Morogo, Dar Es Salaam, Tanzania
- Tete, Mozambique
- 550 communities in the Philippines

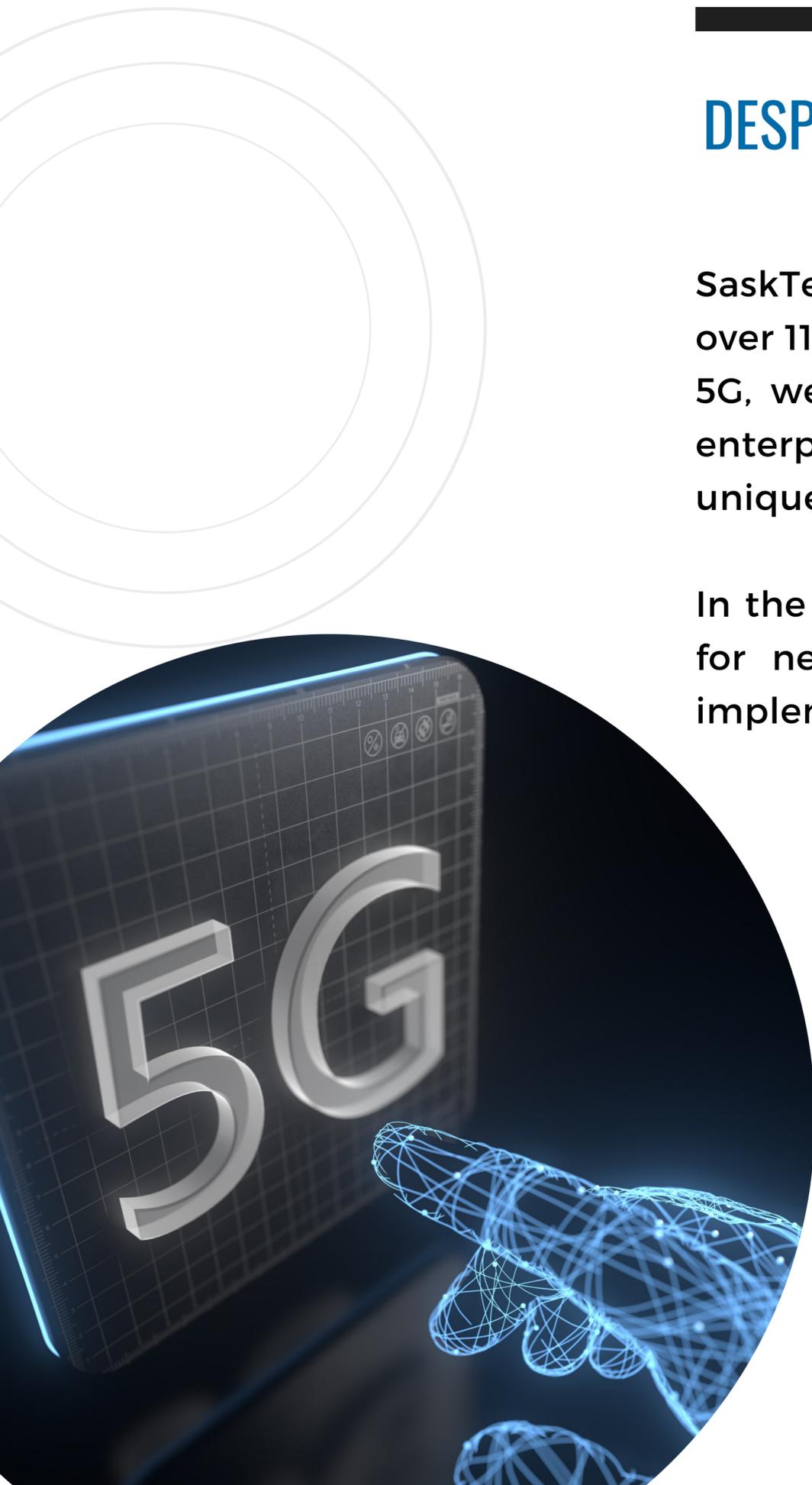


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## DESPITE PANDEMIC, 5G IMPACT ON BUSINESS AND CONSUMERS GROWS MORE SIGNIFICANT THAN EVER

SaskTel has been the incumbent carrier in the province of Saskatchewan for over 110 years and continues to grow our market in Canada. In anticipation of 5G, we have adapted known-use cases for 4G in consumer, business, and enterprise markets and are able to apply that planning and expertise to the unique needs of our clients.

In the midst of a global pandemic, telecoms providing professional services for network planning must consider how this crisis has impacted the implementation of 5G worldwide.



## FILLING THE INFRASTRUCTURE GAPS WITH 5G

While experts around the globe are working steadfastly towards Covid-19 solutions, the need for 5G and its impact on businesses and consumers continues to grow. Plans for the roll out of 5G technology amid the pandemic continue and disruptions to those plans appear to be minimal; in some cases telecoms have accelerated deployment. In Canada, as in other countries, spectrum auctions have been delayed based on an uncertainty of the market due to Covid-19. However some deployments which were delayed in the first few months of 2020 have since forged ahead.

The need for communications and reliable networks has always been considered essential and has been heightened since the beginning of the pandemic as we see need for additional capacity growing at an unprecedented pace. As board meetings, university classes, and music lessons, among other activities, have moved into our homes and onto our kitchen tables, demand for the network into residences continues to grow.

” Telecoms have generally done a very good job of meeting network demand through aggressive fiber to the home infrastructure builds or augmenting DSL technologies, however there are always geographical areas that continue to be underserved due to several factors.

**Building a business case for reaching areas where infrastructure is difficult to establish due to distance, terrain, and small population may be more feasible with a solid and professional 5G strategy.**



This SaskTel International publication will discuss:

- 1** **Shifting Market Demands**  
In the current pandemic reality, business and enterprise markets have become more significant.
- 2** **Business Continuity & Disaster Recovery**  
5G can be used for redundant connections in LAN, MAN, and WAN.
- 3** **Network Planning and Design**  
Significant cost savings can be achieved with a holistic approach where different accesses are anticipated in the planning and design phases.
- 4** **A Trusted Partner**  
SaskTel International works with service providers to provide strategic consulting and insights into developing network solutions



## SHIFTING DEMAND TO BUSINESS MARKET SEGMENT

Over the years, cellular service has largely been focused on consumers. In the current pandemic reality however, business and enterprise markets have become more significant.

- 5G architecture has become necessary to facilitate business-as-usual within the 'new normal' of working from home and the requirement for reliable access to company networks.
- 5G connection speeds will provide what was previously only achievable by traditional fiber network accesses, enabling opportunity for business and enterprise digital functionality in more remote locations.
- Even in core areas where fiber infrastructure exists, businesses may consider a fixed 5G connection rather than spending capital to build an access to an adjacent fiber network.



## BUSINESS CONTINUITY AND DISASTER RECOVERY

5G in a fixed access architecture will also prove to be an excellent strategy to provide resiliency to business and enterprise networks. As an augmentation to existing fiber, copper, or even wireless networks, 5G can be used for redundant connections in local area networks (LAN), metropolitan area networks (MAN), and wide area networks (WAN).

Wherever there is a requirement for highly available service levels, a 5G architecture should be considered. With the additional capacity, speed, and low latency nature of 5G, the traditional expectation of a slower and delayed failover to a redundant link is no longer the case. Enterprises and institutions can expect an architecture that provides a business-as-usual experience in the event a 5G backup is invoked.



## NETWORK PLANNING AND DESIGN CONSIDERATIONS

Traditionally, telecoms approach each network architecture on its own where the core to access matches the services provided and is unique to enterprise fiber access, passive optical access, or wireless access.

Significant cost savings can be achieved with a holistic approach where all three of these accesses are anticipated in the planning and design phases. When the placement of 5G towers is considered during the planning of a passive optical network (PON) for fiber to the premises (FTTX), minor improvements to the PON design can effectively provide the backhaul core for the 5G architecture rather than designing each network separately.

By beginning this planning with the customer in mind, a SaskTel International guiding principle, and by simplifying our business process, we are able to ultimately exceed customers' expectations by increasing efficiencies and providing exceptional quality to consumers.



## 4G and 5G Design considerations

Network plans could also consider current 4G infrastructure and the enhancements that can be achieved starting with 4G Long-Term Evolution (LTE), and progressing with 4G LTE-Advanced (LTE-A) and 4G LTE-A Pro. SaskTel's experience with the initial deployment of 5G showed that coverage can be spotty and limited due to the nature of the 5G millimeter wave technology.

However, 5G networks will continue to evolve over the next 10 years and speeds will continue to increase as larger bandwidth at the 3500 Mhz and 3800 Mhz spectrum bands is auctioned and becomes available. A well-equipped 4G network with a progression of enhancements may be a viable interim strategy in an overall 5G plan.

An experienced partner will assess network infrastructure to determine where your business can leverage existing infrastructure, where infrastructure could be replaced, and where infrastructure could be eliminated. Upfront network planning and the re-evaluation of network plans necessary due to Covid-19 will guide your business on the path to success with a strategic timeline and a plan to maximize investments, making the transition to 5G as cost-effective as possible.



## YOUR TRUSTED PARTNER

SaskTel International, in partnership with SaskTel, works with CSPs to provide strategic consulting and insights into developing network solutions. With over a century of experience, SaskTel leverages its subsidiary companies to provide professional services to companies around the globe. If your business is looking for a trusted and experienced partner to develop a plan towards 5G architecture, SaskTel International can help. We will work with your business to provide a customized roadmap with strategies to develop your own 5G network.

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**SaskTel International wishes a quick resolution and return to a safe and prosperous life post Covid-19 for you and your business with 5G playing a significant role in it.**



## LET'S WORK TOGETHER

Alongside our customers, SI provides strategic planning from concept through deployment working through their business lifecycle to provide advice, prepare ideas, develop a plan, design a solution, implement the solution, monitor operations, and optimize processes. This translates into an ability to understand the unique challenges of our customers and leverage over a century of insight, expertise, experience, and lessons-learned from someone who has been there before.

For more information on how SaskTel International can help your business achieve its strategic network goals **e-mail [info@sasktelinternational.com](mailto:info@sasktelinternational.com) or visit our website at [www.sasktelinternational.com](http://www.sasktelinternational.com).**

