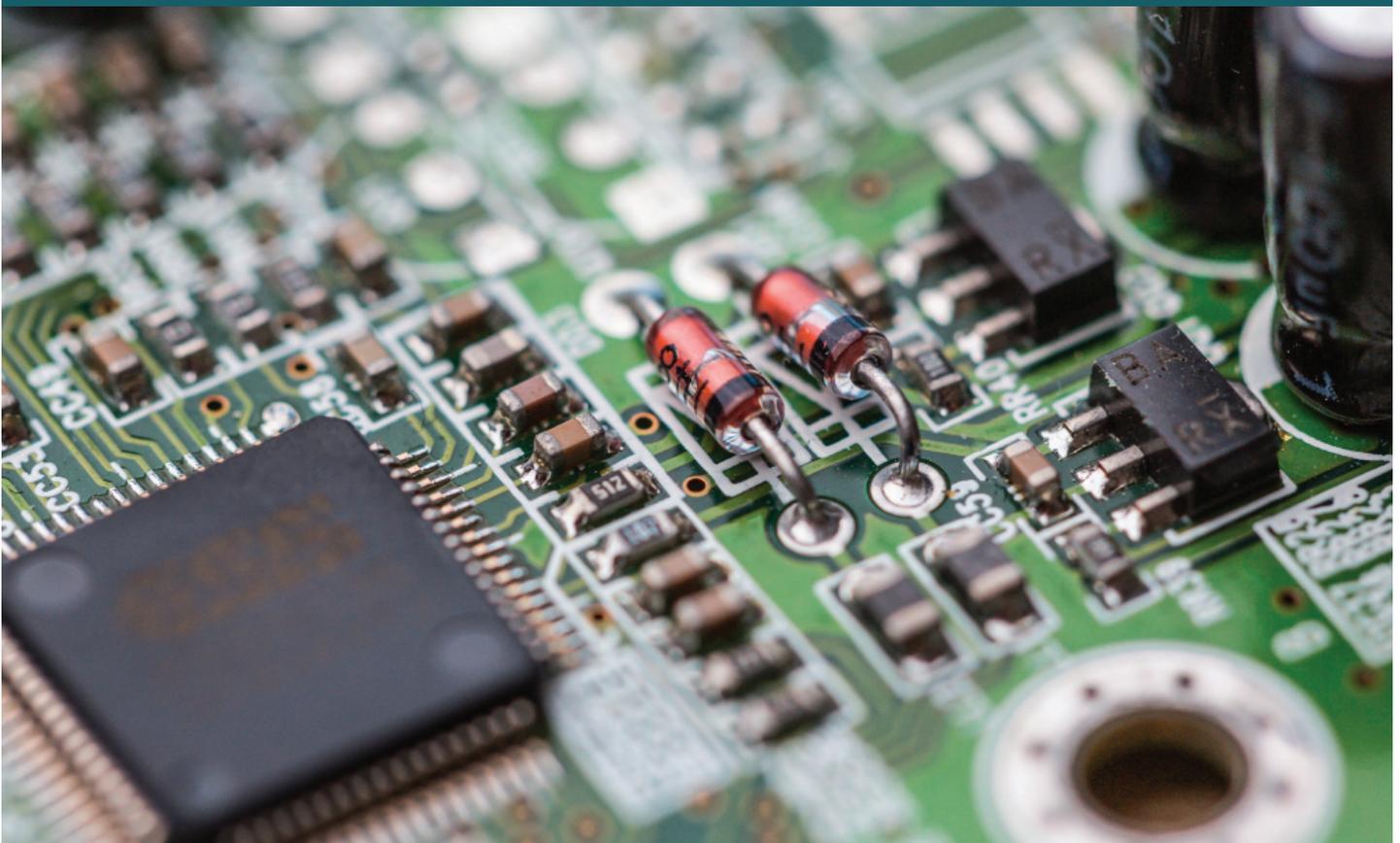


# POWERING UP SASKATOON'S TECH SECTOR

SASKATOON REGIONAL ECONOMIC DEVELOPMENT AUTHORITY  
JULY 2017





## **Saskatoon Regional Economic Development Authority (SREDA)**

SREDA is an independent non-profit economic development organization whose mandate is to help grow the local economy by providing economic information and analysis to aid in business planning, attracting new businesses, helping local companies grow, supporting entrepreneurs, coordinating regional economic development planning and marketing the Saskatoon Region.

SREDA is funded by the City of Saskatoon, Regional Partners and over 100 other members and partners. With their support, SREDA helps grow the local economy and create jobs and prosperity for the Saskatoon Region. This is done by providing programs and services focused around six pillars:

1. Business Attraction
2. Business Expansion
3. Entrepreneurship
4. Economic Forecasting and Analysis
5. Marketing Saskatoon & Region
6. Regional Economic Development and Planning

## Powering Up Saskatoon's Tech Sector

Technology is one of the most rapidly progressing aspects of our modern world. Over the past decade, substantial advances have been made in areas such as automation and artificial intelligence. With each new advancement technology becomes a bigger part of all our lives; no matter who you are or what you do, technology has an impact. As a result, the technology industry is booming and predicted to experience continued growth into the future. This evolving industry presents an opportunity for communities like Saskatoon to expand their economic concentration and develop a larger and more diverse technology sector. Based on estimates from the Brookfield Institute, it would appear that Saskatoon's technology sector consists of over 65 businesses. Given that the technology sector can be notoriously difficult to define, these figures are based on broad definitions.

**When most people think “Canada”, what comes to mind? Beer? Probably. Maple syrup? Most likely. Hockey? Definitely. But tech? Not so much.**

This report also canvasses how bolstering Saskatoon's technology sector would benefit our local economy through industry diversification, sustainable sector growth, and job creation, while also benefitting our community by attracting talented professionals and the knowledge they possess. The local technology sector is beginning to take shape, but impediments to establishing a successful technology firm persist. As a result, improvements need to be made in Saskatoon's talent acquisition, capital funding infrastructure, and business scale up support. As we enter the digital age, it is clear that technology based industries are here to stay, and the earlier Saskatoon can grow its emerging technology sector, the better off its long-term growth will be.



It may surprise people to know that in 2015 Canada's technology industry was directly responsible for \$117B, or 7.1% of Canada's real GDP.<sup>1</sup> Despite often flying under the radar, the tech industry is a large contributor to the Canadian economy. Comprised of 71,000 companies, it represents 6.1% of all Canadian businesses.<sup>2</sup> These companies in turn employ 864,000 Canadians, which represents 5.6% of the workforce.<sup>3</sup> As the tech sector is the fastest growing industry on the TSX, these numbers are likely only to increase with time.<sup>4</sup> Organizations such as the National Research Council of Canada, the Business Development Bank of Canada, and Futurpreneur Canada are helping to make that growth possible, by providing financing, mentoring, and logistical assistance to businesses in need. Canada may not be known for its tech sector, but its tech sector is certainly poised to make itself known.

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In Saskatchewan, where the natural resources sector has defined the economy, the tech sector could be brighter. The technology industry in the province, while growing, has yet to fully blossom. We estimate it accounts for about 2.5% of all Saskatchewan businesses, and 1.3% of provincial employment.<sup>5</sup> However, the tech sector does present an opportunity to diversify the economy that, as a resource-reliant province, Saskatchewan can ill afford to pass up. Diversification helps to mitigate risk by expanding the range of economic outputs produced, therefore reducing reliance on any one sector. Saskatchewan's development interests would be best served by seizing this opportunity. Luckily, there

are a number of organizations that are here to help Saskatchewan's entrepreneurs. Provincial organizations such as SREDA's Square One program, Saskatchewan Capital Network, Women Entrepreneurs of Saskatchewan, the Clarence Campeau Development Fund, the Saskatchewan Indian Equity Foundation, PFM, and the Wilson Center all assist local businesses in their growth and development. The province also recently launched Co.Labs, Saskatchewan's first technology incubator.

Like Saskatchewan, Saskatoon could also benefit from growing its technology industry in the city. There are just over 8,000 tech professionals currently employed, across approximately 65 businesses.<sup>6</sup> While these figures provide a baseline estimate, they also highlight some of the difficulties in trying to define what constitutes a 'technology' sector business. Because there is no "technology sector" North American Industry Classification System (NAICS) code, quantifying the technology sector can be a challenge due to a lack of unifying definition. The figures cited thus far are based on an article<sup>7</sup> that used a three step process: technology occupations were identified using Employment and Social Development Canada's occupation descriptions, the proportion of tech occupations were then cross-referenced against each industry, and then those industries with a proportion of tech employment that exceeded 15% (or three times the national average)

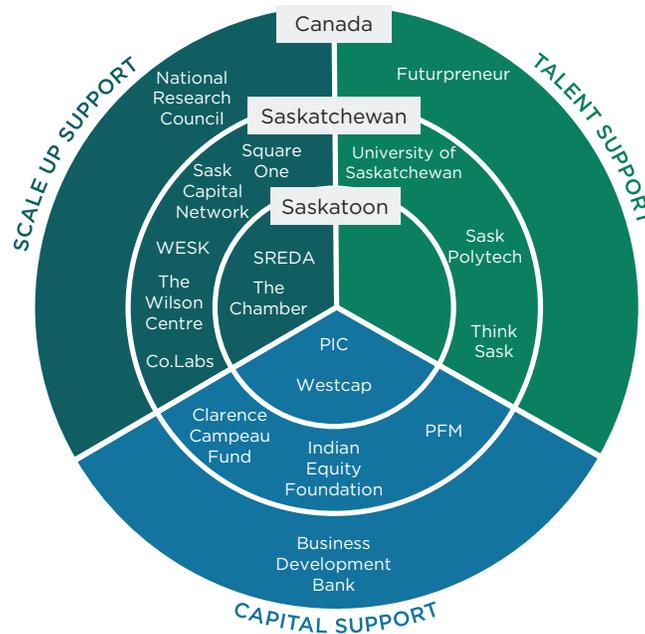
<sup>1,2,3,5,6,7</sup> Brookfield Institute: The State of Canada's Tech Sector, 2016.

<sup>4</sup> Mentor Works: Technology Industry is Canada's Fastest Growing Economic Sector.

<sup>8</sup> Includes all industries in Statistics Canada's custom aggregation of the ICT sector, plus other industries that play a critical role in Canada's tech sector, including aerospace manufacturing, scientific research and development (R&D) and pharmaceutical and chemical manufacturing.

where considered members of the tech sector.<sup>8</sup> This report hopes to refine the understanding of Saskatoon’s technology sector, and modify the current, broad definitions to focus on product development and innovation as opposed to technology-based service industries. By consulting with industry stakeholders and canvassing firms which fit our definition of the technology sector, a more accurate picture of Saskatoon’s technology environment can be determined.

**FIGURE 1: THE NEXUS OF LOCAL, PROVINCIAL, AND NATIONAL SUPPORT ORGANIZATIONS**



Some local firms that fit within our definition, such as Solido, Vendasta, and 7Shifts, have had considerable success in recent years. Solido, an electronic design automation company that provides unique software to chip manufacturers, has added Apple to its impressive client base. Vendasta, an online platform that provides digital solutions, is on track to reach \$300M in revenue by the end of 2017. 7Shifts, a software company, has created a scheduling app that is used by

**In order to foster the growth of a robust technology sector within Saskatchewan, development needs to occur in talent acquisition, capital funding, and scale-up support.**

over 3,500 restaurants worldwide. But while there are success stories, many other Saskatoon tech firms are facing difficulties. The University of Saskatchewan and Saskatchewan Polytechnic both offer tech training, yet business owners still struggle to find talent. Westcap and PIC Investment Group both offer private equity and venture capital financing, yet entrepreneurs still struggle to obtain funds. The Saskatoon Regional Economic Development Authority (SREDA) and the Chamber of Commerce both work to facilitate business development, yet businesses still struggle to progress past the start-up phase. It is evident that there are resources available, but they simply aren’t sufficient. In order for Saskatoon to power up its tech sector, there is much work that needs to be done.

## Talent: Because this isn't amateur hour

Human capital is one of the technology sector's most valuable resources. Many technology firms face difficulties in finding suitably trained and talented people to advance their growth.<sup>9</sup> Increasing technology talent in Saskatoon's workforce can be accomplished by emphasizing technology in our education system and importing existing talent. Our workforce can be equipped for a technology focused future through the alignment of technology-based education and employment requirements. During the K-12 years, digital education and the promotion of tech-based clubs and community organizations can encourage technology-focused learning and engagement among young people. The development of more technology-based co-op programs and apprenticeships can help students gain vital, hands-on skills and establish the technology sector as a viable alternative to more 'traditional' employment routes.

In addition to career learning opportunities, marketing the Saskatoon region as a successful location to establish a career in technology will help attract existing talent from other areas. Other Canadian provinces have higher concentrations of technology sector employment, with Ontario currently employing roughly 6.4% of its workforce in the technology sector.<sup>10</sup> These locations also have more skilled and diverse workforces that Saskatchewan firms could benefit from. The corresponding talent from these areas can be harnessed by promoting the Saskatoon region as a potential supercluster for technology employment. The provincial government initiative, ThinkSask, has started the process by encouraging people to invest, do business, live, and work in Saskatchewan. Efforts need to be focused on people aged 25-45 years, who make up over 79% of the existing national technology workforce<sup>11</sup>, as well as on women, who have long been under-represented in technology sector employment and represent an area of un-tapped potential.<sup>12</sup>

While additional talent will certainly contribute to the development of Saskatoon's technology sector, general community well-being will also evolve through the establishment of a stronger technology workforce. Community benefits are apparent in the demographic data for technology sector employees, indicating that, on average, they earn \$12,000 more annually relative to non-technology sector employees.<sup>13</sup> Attracting and developing technology talent will also enhance our communities through the knowledge channeled by highly-skilled technology sector employees, 50.7% of whom have university degrees.<sup>14</sup>

<sup>9</sup> Tech Nation focus: How Manchester's tech scene shapes up in 2017; Forging the Future: 6 Catalysts for UK Digital Tech Growth and Innovation; Accelerate Okanogan: Economic Impact of the Okanogan Tech Sector: 2015 Edition.

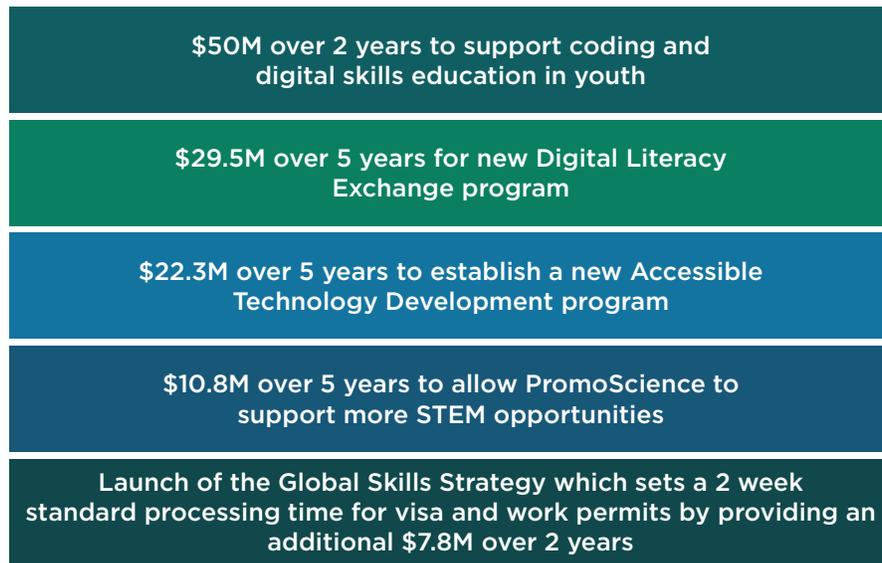
<sup>10, 11</sup> Brookfield Institute: The State of Canada's Tech Sector, 2016.

<sup>12</sup> U.S. Equal Employment Opportunity Commission: Diversity in High Tech.

<sup>13, 14</sup> Brookfield Institute: The State of Canada's Tech Sector, 2016.



**FIGURE 2: HIGHLIGHTS FROM THE 2017 FEDERAL BUDGET**



## **Capital Funding: Because the smart money's on tech**

Developing capital funding programs is another way to help nurture the technology sector within Saskatchewan. By expanding funding programs and access to financial support, Saskatoon can become a leading region for the establishment of technology-based startups. Technology sector companies spend the largest amount on investment in 'business enterprise research and development', meaning that any capital funding would be recouped through technology-related investment within the city and province.<sup>15</sup>

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Many technology start-ups rely on "angel investors" to fund their technology firms in early stages of development. Currently, Saskatchewan is one of the few Canadian jurisdictions that does not offer an angel investor tax credit. The development of such a tax credit program would encourage investing in local technology startups and help to provide technology firms with the capital they need. The creation of stronger venture capital networks can also help growing technology firms obtain the equity required when their business is small and more risk sensitive. Connecting local technology firms with external capital networks could also be beneficial by allowing the tech firms to acquire more funding and business development mentorship. Additionally, government procurement requirements focused on sourcing technology from Saskatchewan-based firms can help provide the enabling environment to grow startup technology companies into established businesses.

<sup>15</sup> Brookfield Institute: The State of Canada's Tech Sector, 2016.

Tax credits targeted at technology-based businesses can help technology firms retain their income for a sustainable future. Currently, the City of Saskatoon offers a property tax abatement for business development activities, which can help offset operating costs for new technology firms. The Government of Saskatchewan has introduced the Saskatchewan Commercial Innovation Incentive in the 2017-2018 budget, which is a 'patent box' style initiative to reduce the provincial corporate income tax rate for eligible corporations to 6% for 10 years on income earned from the commercialization of qualifying intellectual property. Additionally, SR&ED tax credits have proven invaluable to companies that innovate. However, these tax credit programs need to be improved to further grow the population of local technology firms. Saskatchewan currently offers tax reductions and tax credits for manufacturing and processing, and by expanding these tax incentives to technology firms, our economy would attract more technology-based business and achieve greater economic diversification.

## Scale-up: Because size matters

Scaling up operations presents another challenge for technology sector companies, and requires improvement in order to develop local startups into stable firms in the long run. While over 84% of technology sector companies are profitable, the majority of technology companies in Canada employ less than 4 people.<sup>16</sup> Canada is essentially tied with the USA for per capita production of startup companies, but many Canadian companies lack adequate support to grow and achieve global competitiveness.<sup>17</sup> By scaling up technology sector firms, benefits such as higher paying positions, increased stability, more investment, and greater 'mass' to support research, can be realized.

**The majority of technology companies in Canada are small firms employing less than 4 people.**

Saskatoon and the province can assist technology companies in scaling up by implementing training programs for technology sector upper-management and executives. Technology sector employers cite an absence of learning programs for technology business management as an impediment to operations scale up. Training can take place in universities or through more informal settings in conferences and workshops. These avenues for management development can help to foster communication

networks among technology sector leaders, and provide knowledge support within the technology community. The discourse created through tech-based learning networks can result in knowledge spill-over, fueling more rapid innovation and technological development.<sup>18</sup>

Operation scale-up can also be achieved through the use of research grants and development funds to catalyze technology business expansion in our local economy. Currently, the federal government offers funding programs like the Industrial Research Assistance Program (IRAP), which provides grants to fund research and development.

<sup>16</sup> Brookfield Institute: The State of Canada's Tech Sector, 2016.

<sup>17</sup> Mentor Works: Technology Industry is Canada's Fastest Growing Economic Sector.

<sup>18</sup> Mentor Works: Technology Industry is Canada's Fastest Growing Economic Sector.

By building on these programs and implementing unique, technology-targeted research grants and PhD fellowship funding, Saskatoon can help its local startups evolve into stable and established corporations. The creation of public sector innovation centres could also prove valuable, by taking the ideas and needs of public sector organizations and forming partnerships with local tech companies to develop a solution together.

**FIGURE 3: WHAT SASKATOON CAN DO TO HELP TECH SECTOR GROWTH**

<b>SCALE UP</b>	<ul style="list-style-type: none"> <li>• Training programs for tech management</li> <li>• Research grants &amp; development funds</li> <li>• Strengthen tech learning networks</li> </ul>
<b>TALENT</b>	<ul style="list-style-type: none"> <li>• Emphasize tech in schools</li> <li>• Marketing the Saskatoon tech sector</li> <li>• Tech co-op programs, apprenticeships</li> </ul>
<b>CAPITAL FUNDING</b>	<ul style="list-style-type: none"> <li>• Angel investor tax credits</li> <li>• Stronger venture capital networks</li> <li>• Tax credits for tech businesses</li> </ul>

### **About Saskatoon Regional Economic Development Authority (SREDA)**

As a non-profit economic development organization, SREDA’s mandate is to help grow the local economy by providing economic information and analysis to aid in business planning, attracting new businesses, helping local companies grow, supporting entrepreneurs (Square One), coordinating regional economic development planning and marketing the Saskatoon region. A corollary to this mandate is to support the diversification of the Saskatoon region by promoting the technology industry and the corresponding economic benefits provided. Through the support and informational services provided by SREDA and Square One, we hope to see the local technology sector prosper and develop into a key pillar of our local economy.