BUILDING A MORE RESILIENT, COMPETITIVE AND SUSTAINABLE ECONOMY IN BC THROUGH SCIENCE AND TECHNOLOGY ADOPTION

Shift to the Digital Economy

The current pandemic is accelerating a global shift to a digital economy. Firms in traditional industries that adopt digital technologies will be much more competitive and sustainable in this economy and better positioned to handle future shocks, including future pandemics. Over the past few years, rapid expansion in access to mobile technologies and developments in areas such as sensors, big data and artificial intelligence have increased the many ways that digital technology innovations can improve resilience.

Science and technology is already supporting the recovery process in BC by enabling people to work and purchase remotely – and safely. Artificial intelligence – particularly machine and deep learning – is doing heavy lifting on data science questions ranging from economic recovery modelling to identifying viable antibodies for vaccine production. Technologies such as 3D printing have helped with rapid prototyping and production of face shields. And numerous tech platforms supply brick-and-mortar businesses with diverse options for delivery and fulfillment.

Pre-pandemic, science and technology from BC's tech firms had already been permeating the traditional sectors of the economy. Examples are found in every sector, such as forestry with highly advanced tools and sawmills; mining with advanced sensors and vision; transportation utilizing clean energy; retail by leveraging high-tech design; regenerative medicine and personalized healthcare; mobile financial services, etc.

The Mining Association of BC recently stated in an op-ed that "innovation and technology are key to mining's success. The sector now employs artificial intelligence, big data, and electrification — in collaboration with B.C.'s clean tech and digital sectors — to conserve more, waste less, and reduce our environmental footprint"[1].

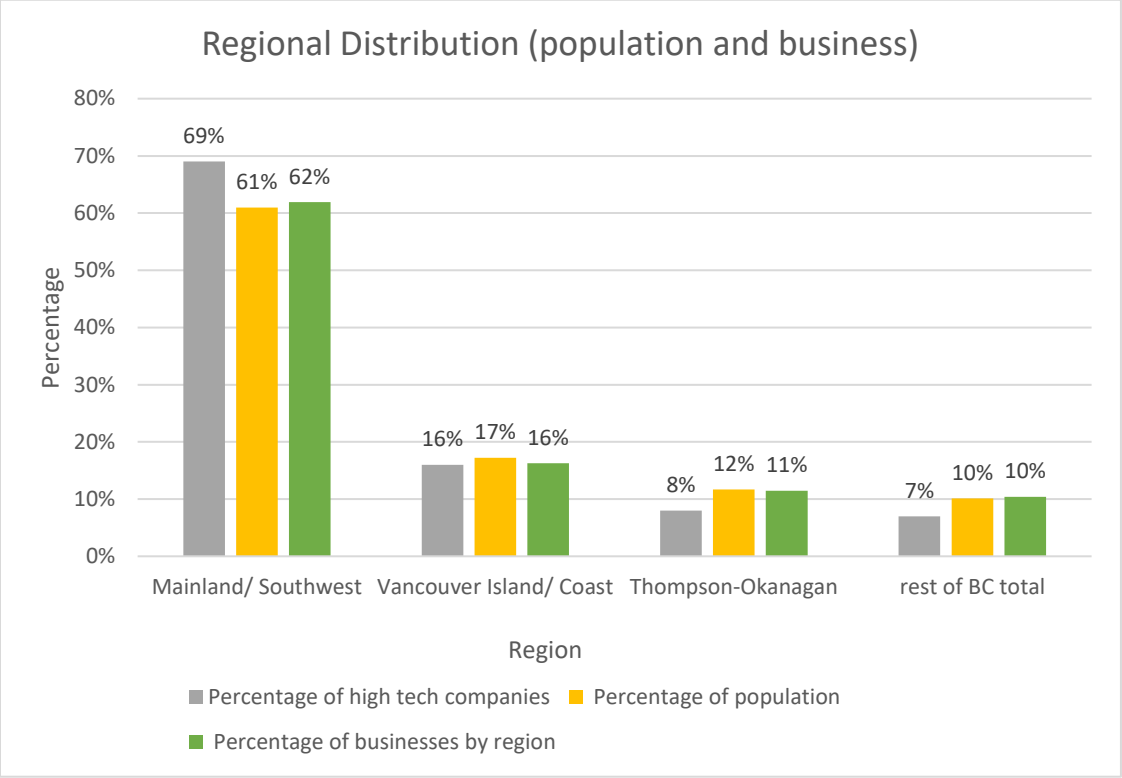
A May 2020 report[2] by BC Stats on BC's high-tech occupations found that:

- Sixty percent of workers with high technology occupations work in industries outside of the high technology sector.
- Employment across BC's high technology occupations outside the high-tech sector grew by 9.5% between 2011 and 2016.

[1] http://vancouversun.com/opinion/michael-goehring-mining-offers-british-columbians-a-significant-opportunity-to-help-our-economy-grow-and-recover-from-covid-19

[2] https://www2.gov.bc.ca/assets/gov/data/statistics/business-industry-trade/industry/tech_occupations.pdf

Importantly, as the graph below highlights, the high-tech sector is fairly evenly distributed across BC relative to percentage of population in each region and relative to all businesses in each region. Although the Mainland/ Southwest region has much more tech activity in terms of numbers, each region has tech companies roughly proportionate to the size of its population.



It's clear that BC won't be returning to the same world pre-COVID-19. By 2022, over 60% of global GDP will be digitized. An estimated 70% of new value created in the economy over the next decade will be based on digitally enabled platforms[3]. There is an opportunity to help shape the future of BC and the international competitiveness of all its sectors by supporting science and technology adoption across the economy and throughout the province – and BC's science and tech firms are positioned and ready to help.

<u>Ensuring BC's Resilience and Competitiveness in the Digital Economy</u>

The Emerging Economy Taskforce's (EETF) recent report[4] states that "to bolster competitiveness of SMEs and non-profit organizations, opportunities to encourage the adoption and integration of the best available technology across all BC's industries should be created". The EETF called on the BC government to "**explore leading-edge approaches to**

[3] *Shaping the Future of Digital Economy and New Value Creation*, World Economic Forum
[4] https://www2.gov.bc.ca/gov/content/governments/about-the-bc-government/emerging-economy-task-force

accelerate the diffusion and adoption of technology, bringing together government, industry, academia and non-profit organizations in a collaborative effort".

The BC Business Council recently published a report[5] that states "in an era when technological change is refashioning business models and operations across the economy, **the province should be looking to support the take-up and diffusion within the business sector of the digital and other information and communications technologies that increasingly are driving growth in all innovative, high-wage economies**. It is particularly important to incentivize faster technology adoption in core industries like manufacturing, natural resources, transportation, tourism, retail/wholesale trade and construction as one element of a larger strategy to fuel the productivity growth on which workers' wages ultimately depend".

The national Chamber of Commerce also recently issued a report[6] that states "the pandemic will change how we live, how we work and how we use technology. A crisis of this scale will undoubtedly alter consumer preferences and workplace norms. Canadians have suddenly been forced to work remotely, conducting virtual meetings and adopting online shopping and e-learning on a massive scale. An increasingly digital economy will require major investments in sophisticated networks, cybersecurity and electronics. It will also force businesses to adopt new technologies and business models to interact with customers, clients and employees". The report made several recommendations, including a call for the **introduction of "programs, funding and incentives for technology adoption in businesses of all sizes and across all sectors to improve Canadian productivity**".

While the BC government provides some support for science and technology adoption more can be done. In the words of the EETF, "BC must build on its strengths in the technology sector and invest further in innovation, as well as **facilitate the widespread adoption of innovation and technology across all sectors of the economy in order to improve overall business productivity, increase incomes and enable workers to thrive**. Economies with strong home-grown technology and innovation industries have higher rates of technology adoption and capture more of the economic benefit than economies that rely on importing technology from elsewhere".

[5] https://vancouversun.com/opinion/greg-davignon-and-jock-finlayson-the-province-should-commit-to-becoming-a-top-tier-jurisdiction-for-new-investment
[6] https://www.canadianbusinessresiliencenetwork.ca/resources/recovery/