First Nations Labour Market Preliminary Study: Indigenous Engagement and Leadership in the Technology and Innovation Sectors

Final Report: Phase I

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The views and opinions expressed in this report are those of its author(s) and not the official policy or position of the Government of British Columbia.

Canada BRITISH COLUMBIA

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Foreword

The First Nations Technology Council acknowledges that it is fortunate to live and work upon the unceded territories of the xʷməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and Sḵ̓ilwətaʔ/Selilwitulh (Tsleil-Waututh) peoples.

The Technology Council is pleased to lead a culturally-grounded and holistic exploration of challenges and barriers that have prevented Indigenous peoples from fully participating in B.C.'s technology and innovation sector. Through our Indigenous Research Methodology, we have contextualized personal narratives, preliminary labour market data, and future research themes within a broader theory of change that will not only ensure Indigenous peoples are competitive in B.C.'s technology sector but also leading and growing local digital economies. Access to the tools of social and economic realms in our increasingly connected world, is a basic human right. Achieving equality of Access is an important and tangible form of Truth and Reconciliation in this country and the commitments of the Province of British Columbia, Canada and the sector therein.

We are grateful to all those who contributed to this report and recommendations, particularly the Indigenous communities throughout the province who shared their experiences and ideas through roundtable discussions, interviews, breakout activities and survey feedback. Data collected during this project comply with the principles of OCAP which are ownership, control, access and possession. The Technology Council would also like to thank the BC Assembly of First Nations, Union of BC Indian Chiefs, First Nations Summit and the First Nations Leadership Council for supporting and endorsing this important body of work. We would also like to acknowledge the project's Advisory Council members and our partners at the Ministry of Advanced Education, Skills & Training for funding this project.

Denise Williams
Chief Executive Officer
First Nations Technology Council

Executive Summary

The aim of this project was to understand challenges and barriers that have prevented Indigenous peoples from participating via meaningful employment and leadership in the technology sector in BC. Through our Phase 1 engagements and consultations with Indigenous communities across the eight (8) economic regions of BC, this study identifies some central challenges faced by Indigenous peoples on this pathway, while it also uncovers key opportunities and priorities that must be leveraged to enhance digital employment and leadership. These priorities are two-fold: first, they are directly linked to sourcing solutions for integrating Indigenous people into the tech sector, with the aim of providing meaningful employment while filling the labour gap that currently exists in the province's technology sector; and second, they highlight opportunities for the digital skills training and employment pathways that can advance Indigenous self-determination, and build sustainable local digital economies.

We have categorized the key challenges and priorities into the following themes:

1. **Access and quality of connectivity infrastructure**
2. **Unique Community Needs and Capacities**
3. **Digital Proficiency and Attitudes Towards Skill Attainment**
4. **Industry mentorship and partnership**

As an Indigenous-led LMP, we are following the considerations laid out in the June 2018 *Indigenous Labour Market Information Project Summary Report* (Prepared by Arrive Consulting and Roundtable Consulting for the Labour Market Information Office, BC Ministry of Advanced Education, Skills and Training) by collecting labour market information that addresses the needs of Indigenous peoples. Due to the introductory nature (and therefore small sample size of primary research available to be gathered) of Phase 1 engagement efforts, further exploration of these themes at the regional and community level is needed to deepen our understanding of potential problems and hurdles to technology engagement, along with opportunities. This research to be completed under a Phase 2 initiative will include a deep dive into both the demand for tech talent across regions in BC where Indigenous live and are employed; as well as an in-depth analysis of both the quantity and quality of supply coming from Indigenous sources to fill this demand. Only when this is completed can we begin to understand the core roots of the problem and craft actionable recommendations for change that focus on increasing Indigenous representation in the technology sector and supporting Indigenous self-determination in the digital age.

Moreover, in response to the widened scope of key issues raised by Indigenous peoples, these themes also support the foundational elements of an *Indigenous Digital Adancement Framework* (to be authored by the Technology Council). This is a first of its kind strategic framework for all Indigenous peoples in B.C. to benefit from a collaborative approach aimed at achieving equitable, affordable and sustainable access to digital and connected technologies, and utilizing technology to advance employment and economic prosperity. Once designed and implemented, the Indigenous Digital Strategy will expedite the critical investment necessary to achieve digital equity in the province.

In order for future recommendations to be measurable and successful over time, performance indicators must be set. As part of the *Indigenous Digital Adoption Framework* we are designing an *Indigenous Digital Adoption Index* (IDAI) to measure the advancement of adoption and engagement of digital and connected

technologies among Indigenous communities. The draft parameters of the IDAI were validated through Phase 1 engagements with community leaders in areas such as information technology, community planning and special projects; however, the data, insights and findings to be collected during Phase 2 research will be critical to solidifying and accurately informing the IDAI. Primary data (both quantitative and qualitative) will be considered in the development of the IDAI in order to provide an unprecedented, comprehensive analysis of the current levels of Indigenous engagement with technologies and in the technology sector. Phase 2 will also include an analysis of future opportunities and a 'go-forward' plan to advance and align technologies with the priorities of Indigenous Nations. Only once this is complete can we begin to truly plan for a diverse and inclusive digital future for BC and Canada.

Introduction

For hundreds of years, Indigenous peoples[1] in Canada have fought legislation and systemic discrimination meant to dismantle sovereign governance systems, traditional economies and cultural identities. Colonial policies that forced Indigenous people off their traditional territories and onto economically challenged Indian reserves contributed to Indigenous people not fully participating in the industrial revolution, resulting in socio-economic gaps and challenges that still exist today. As British Columbia and Canada strive to become global leaders in the digital and technological revolution in an era of reconciliation, we have the great opportunity to move forward collectively in addressing these barriers and opening up new possibilities where the sky truly is the limit in what we can achieve together.

In 2015, the Truth and Reconciliation Commission of Canada called upon the corporate sector to adopt the *UN Declaration on the Rights of Indigenous Peoples* as a reconciliation framework, and to ensure that Indigenous peoples have equitable access to jobs, training and educational opportunities.[2] In order to understand and align both supply and demand side forces, there exists a need to better understand the current digital landscape in Indigenous communities in B.C., and identify opportunities to fully enable Indigenous representation, leadership, and innovation in the province's digital economy. Efforts to date at exploring diversity and inclusion as integral to sector hiring and retention (e.g. *BCTechTalent 2016 Report*) have largely focused upon a broad categorization of underrepresented groups, which does not fully reflect Indigenous peoples' unique position and history in the country and does not provide the specificity or nuance that is needed for action or change.

Therefore, this Sector Labour Market Partnership (SLMP) was undertaken in an effort to understand the barriers that Indigenous communities in BC face when it comes to engaging with, and finding meaningful employment in the provincial economy – and in particular, the technology sector. With the objective of increasing Indigenous representation in the B.C. technology sector, this first phase of this partnership provides an initial glimpse at challenges and obstacles that Indigenous communities face on this journey ("the problem"). At the same time, this report establishes a groundwork for future research that will continue to investigate initial findings at a deeper level, with the ultimate goal of accelerating key digital skill

[1] https://www.rcaanc-cirnac.gc.ca/eng/1100100013785/1529102490303
[2] http://www.trc.ca/websites/trcinstitution/File/2015/Findings/Calls_to_Action_English2.pdf

development among Indigenous communities, and increasing Indigenous representation in one of BC's technology and innovation sectors.

Employing more than 100,000 people across more than 10, 000 companies, BC's technology sector contributes nearly $15 Billion annually to the provincial economy.[3] Compare this to one of the province's most well-known and established sectors, Forestry, which in 2017 generated an output less than one-third that of the technology sector[4]. From an occupational perspective, the tech sector also employs more people than forestry, mining, oil and gas combined, while offering an average salary that is 85% higher than the B.C. average[5]. Clearly, BC's technology sector is substantial, not only outpacing the growth of many individual sectors, but ultimately changing the nature of our very economy as a province and as a country. With this comes economic progress, increased productivity, and high-quality job opportunities.

However, with this growth, BC, like many jurisdictions in Canada and around the world, is facing a talent crunch. In 2016, a labour market forecast completed by ICTC and BC Tech found that BC's technology sector will face a shortage of digitally-skilled talent totaling up to 30,500 by 2021[6] - that's more than 30,000 high-quality jobs left on the table due to insufficient talent supply. Moreover, when analyzing supply streams needed to fill this gap, the report found that approximately 30% of supply will need to come from local resources. In addition to new grads and skilled immigrants, BC's tech sector will need to boost the representation of groups traditionally underrepresented in the tech sector, like Indigenous peoples. Simultaneously, Indigenous peoples have to be equipped with the skills required to capitalize on this need. This will require an acute acceleration of tech training and skill development among Indigenous peoples, which currently represent less than 1% of the entire B.C. tech sector[7] along with a long-term campaign targeted at increasing and sustaining this development; as Indigenous peoples nationally represented slightly less than 1.5% of all ICT jobs in 2016[8], this figure showing minimal growth over the last 10 years.

This initial engagement found that Indigenous communities were optimistic about opportunities that technology can bring for them and their communities, and overwhelmingly, were interested in gaining the necessary digital skills to meaningfully participate in this new economy. Indigenous communities have a lot to offer the innovation sectors, and can contribute significantly to the province's goal of becoming a leader in the global digital economy. Indigenous communities bring with them a rich culture, strong community values, and mindsets that are crucial to innovation; though often face unique challenges. These include poor connectivity, uncertainty regarding opportunities or how to obtain them, as well as barriers related to mental health or socio-economic conditions that can impede the process of economic participation. These challenges will be addressed with further detail in the report.

[3] https://wearebctech.com/2017-2018-year-in-review/
[4] Idem.
[5] https://news.gov.bc.ca/factsheets/bc-stats-report-profile-of-the-british-columbia-technology-sector-2017-edition-1
[6] https://www.workbc.ca/getmedia/8d38ac6f-82d4-4db1-b0bf-ac0f77d78af5/2016_TechTalentBC_Report.pdf.aspx
[7] https://www.workbc.ca/getmedia/8d38ac6f-82d4-4db1-b0bf-ac0f77d78af5/2016_TechTalentBC_Report.pdf.aspx
[8] https://www.ictc-ctic.ca/wp-content/uploads/2017/06/Indigenous_Supply_ICTC_FINAL_ENG.pdf

However, despite some obstacles, Indigenous communities tended to view opportunities in the technology sector as a key element to spurring economic growth and enhancing leadership prospects in their communities. With the right training and mentorship, Indigenous peoples can not only help to fill the technology talent gap in BC, but they can accelerate the productivity of our new digital reality that requires diversity in thought and idea exchange to fully thrive.

Part I: Background

Bringing the Fastest-Growing Demographic and Sector Together

In a 2018 report by ICTC, it was highlighted that in Canada, employment of technology professionals outpaced employment of other occupations by a rate of 6:1 – this is the most substantial growth of digital talent we have witnessed over the last 15 years[9]. And with key developments like 5G, AI, Blockchain and other transformational technologies increasingly impacting and re-shaping our entire economy, the need for talent with critical digital skills is a key priority for Canada and BC.

While this progress promises advances and key innovations that will reshape our economy, according to the 2016 *TechTalent BC Report*, this growth also comes with concerns, leaving BC with a talent crunch that threatens to leave tens of thousands of unfilled jobs on the table. Current availability of skilled talent in the province only able to fill roughly one-third of in-demand roles over the coming years, and this means that the province must focus on not only attracting high-skilled talent from traditional supply streams, but also on ensuring that local supply sources such as Indigenous people are equipped with the skills they need to be successful and contribute to our increasingly digital world.

Focusing on Indigenous Engagement in Tech is the Smart Thing to Do

According to the 2016 National Household Survey (NHS), Indigenous peoples represent nearly 5% of the Canadian population and are the fastest-growing demographic in Canada, outpacing growth seen across any other demographic. In fact, in only 10 years, the Indigenous population in Canada has grown by more than 40% - that's nearly four times the growth rate seen across the non-Indigenous population[10]. Additionally, with one in six Indigenous peoples in Canada residing in British Columbia, the province is afforded a unique opportunity to capitalize on this growth.

Moreover, the median age of Indigenous peoples in Canada is significantly lower than that of the general population (32 compared to 41 for the general population[11]), with about 41% of the Indigenous population under the age of 25 – compare this to the general population where this demographic represents approximately 18% of the whole. While age itself is not a determinant of success in the tech sector, current

[9] https://www.ictc-ctic.ca/wp-content/uploads/2018/01/ICTC-Report_The-Digital-Talent-Dividend-FINAL-ENGLISH-1.30.18.pdf
[10] National Household Survey 2016 – Aboriginal Peoples
[11] Idem.

trends showcase the relatively "young" nature of the sector. In 2016, nearly 60% of Canada's tech workers were under 45 years old[12]. This age gap is even further highlighted when we analyze the median age of employees at some of the biggest global powerhouses for tech. For example, in the spring of 2016, the average age among more than 15 top tech companies including Facebook, LinkedIn, Amazon, IBM and others was 32[13]. As the B.C. technology sector seeks to meet its labour force demands with skilled local talent, it is clear that Indigenous peoples can not only play a critical role, but offer a unique opportunity.

However, this means that there is a need to better conceptualize and grasp the current digital landscape within Indigenous communities in BC. This includes an understanding of not only technology use within the communities, but also an understanding of digital opportunities and skill needs, levels of training obtained, perceptions of the impact of technology on Indigenous communities, and others. With this insight we can begin to shape pathways that seek to fully enable Indigenous representation, leadership, and innovation in the province's digital economy.

Some efforts to date have been taken in the space of exploring diversity and inclusion as integral to sector hiring and retention [14]. One key example includes the 2017 HR Tech report *Diversity and Inclusion in the B.C. Tech Sector*, which called specifically on technology companies to increase reconciliation commitments, and highlight opportunities with Indigenous peoples. In fact, one of the recommendations of this report was to implement a sector-wide Reconciliation Action Plan,[15] showcasing a willingness in BC's tech ecosystem advance these goals. However, while important, efforts undertaken to date – including the above – have largely focused on broad categorizations of underrepresented groups, or where Indigenous peoples were uniquely focused on, the analysis was completed at a national level. An in-depth analysis of digital challenges and needs of Indigenous peoples in BC is critical to providing the granularities and nuances required to accelerate change and digital adoption among communities that participate in one of the nation's fastest-growing technology sectors.

[12] https://brookfieldinstitute.ca/wp-content/uploads/FINAL-Tech-Workers-ONLINE.pdf
[13] https://www.statista.com/statistics/653789/average-age-of-tech-company-employees/
[14] Examples include: BC Tech Talent 2016 Report, Digital Economy Talent Supply: Indigenous Peoples of Canada; and the Diversity Dividend, among others.
[15] https://www.workbc.ca/getmedia/87e29b7a-e12e-4c64-a900-daa401ec9018/Technology_BCTech-Assoc-Diversity-and-Inclusion-Report_Nov-2017.pdf.aspx

Part II: Project Vision

Purpose & Methodology

"There's no reason why the next big tech start-up can't come from an Indigenous community. There's no reason why the next Elon Musk couldn't be an Indigenous entrepreneur."

– Jeff Ward, Founder of Animikii Indigenous Technology

Project Purpose

Throughout this SLMP initiative, the First Nations Technology Council seeks to understand barriers, challenges, attitudes, as well as opportunities that Indigenous peoples face and possess in the province's technology sector. In so doing, the goal is to understand digital needs and perceptions, as well as elevate Indigenous innovators within the technology sector. These findings will go towards the eventual identification of a series of recommendations and strategies to guide and accelerate Indigenous participation and leadership within the province's fastest growing sector. Combined, these findings will also inform the foundational pillars of the *Indigenous Digital Advancement Framewirk* that will be essential to expediting action on challenges such as connectivity infrastructure investment, digital awareness, and others across the province.

Phase I Methodology and Approach

As an Indigenous-led LMP initiative, considerable care and attention has been given to ensuring that the methodology and approach of our Phase 1 engagement was culturally-grounded, holistic and reflective of the values of Indigenous communities across the province. Each event was opened with a traditional prayer/welcoming and a cultural performance from a member or group from the local First Nation. This was undertaken as an acknowledgment of the territories visited under the roundtable meetings, and to serve as a reminder that the work of Indigenous innovation must be grounded in traditional protocols and practices.

The conclusions in this engagement report are based on a combination of secondary and primary research. Secondary research included an analysis of relevant national and provincial datasets to shape a background for this study. Data sources used included the Statistics Canada Labour Force Survey (LFS), and National Household Survey (NHS), as well as BC Stats. The findings from several relevant reports were also utilized throughout a comprehensive literature review. The primary research portion of this study however, formed the crux of findings. The primary research tools used in this study are: 1) An advisory committee comprised of 7 members from Indigenous organizations, industry, government, research organizations, and non-profits; 2) 8 regional roundtables attended by Indigenous community leaders, members from the technology sector, youth, and other relevant stakeholders; 3) a survey, distributed at the regional sessions. This survey

was used to capture relevant data points on skills levels, interest in digital skills training, interest in specific career paths and digital skills, access to technology, connectivity infrastructure, community capacity, and community needs among other topics. Details of these tools and the research methodology, including a descriptive accounting of advisory committee participants, regional roundtable sessions, and the survey are available in *Appendix I – Indigenous Research Methodology, Appendex II – Project Methodology Details* and *Appendix III – Survey Questions*.

Indigenous Research Methodology

The engagements and breakout activities were grounded in the principles of Indigenous research methodology. As an Indigenous-led, community-driven initiative, the Technology Council recognized the need to ground its provincial engagement in a research methodology that was responsive and respectful of Indigenous communities.

An extensive environmental scan of 35 leading sources (with an emphasis placed upon the OCAP framework administered by the First Nations Information Governance Centre) led to the development of a methodology tailored to the needs of the Technology Council operating within the context of the technology sector. This methodology guides all aspects of the LMP, and will continue to evolve based upon feedback from community members over the course of the subsequent phases of the LMP.

The guiding principles of the methodology used in this engagement study are:

- Respect
- Control
- Community Focus
- Participation/Collaboration
- Partnership
- Sharing
- Social Return

For more details on the Indigenous Research Methodology (IRM), please refer to *Appendix I – Indigenous Research Methodology*.

Part III: Phase 1 Engagement

Key Findings and Themes

Throughout the engagement activities, the Technology Council encountered several key insights and points feedback related to the engagement and perceptions of Indigenous communities with technology. However, while several topics from healthcare to language concerns were broached, the Council focused on insights specifically related to barriers, challenges and opportunities as they tied to Indigenous participation and leadership in the digital economy. While these are only initial findings, this preliminary research has identified the following themes key themes in relation to Indigenous engagement, participation, and leadership in the technology and innovation sectors.

Theme 1: Indigenous peoples in B.C. face inequitable and unsustainable access to connectivity infrastructure.

- **Key Finding 1A)** Indigenous communities lack reliable internet connectivity. This was a particular challenge for individuals living on-reserve vs. off-reserve.
- **Key Finding 1B)** Many Indigenous communities are interested in exploring ISP ownership or control models to spur education and training opportunities related to digital technology. This in turn, can help bolster local economic development.

Theme 2: Indigenous peoples have unique needs when it comes to engaging and participating in the technology sector.

- **Key Finding 2A)** Awareness and knowledge of pathways and opportunities, particulately for those with no previous digital training, prevents Indigenous peoples from participating in the technology sector.
- **Key Finding 2B)** Some Indigenous peoples, particularly Indigenous women, are not always able or willing to leave their community to access training or employment opportunities.
- **Key Finding 2C)** Some Indigenous communities possess unique barriers or lack certain capacities required to utilize technology in a way that serves community priorities.

Theme 3: Indigenous communities are interested in digital skills training and are optimistic about the potential of employment in the technology sector.

- **Key Finding 3A)** Across regions in BC, Indigenous communities expressed high interest in digital skills training.
- **Key Finding 3B)** The majority of Indigenous communities felt optimistic about their ability to succeed in a tech-based career.

Theme 4: Indigenous peoples are seeking mentorship and partnership from the technology sector to advance tech engagement and help communities gain important digital skills.

- **Key Finding 4A)** Indigenous communities want to nurture tech talent, but experience financial and social uncertainties.
- **Key Finding 4B)** A willingness from technology companies to partner with Indigenous communities leads to mutual benefit and success.
- **Key Finding 4C)** Indigenous communities see technology as a tool to advance self-determination, however worry about the availability of local talent to fulfill project and community needs.

THEME 1: INDIGENOUS PEOPLES IN BC FACE INEQUITABLE AND UNSUSTAINABLE ACCESS TO CONNECTIVITY INFRASTRUCTURE.

While the technology sector in BC continues to scale rapidly, bringing with it a demand for local talent, Indigenous communities in the province continue to face inequitable, and unsustainable access to connectivity infrastructure. Network BC estimates that only 25% of Indigenous communities in the province meet the current broadband definition of 50 mbps download speed and 10 mbps upload speed. This basic service, recently deemed a human right by the United Nations[16], is a key barrier preventing Indigenous peoples from accessing training and employment opportunities.

This issue is being recognized in other LMP's. In the 2017 *Talent Strategy Development* report developed by the Vancouver Economic Commission, one of the recommendations included improving connectivity and subsidizing hardware in Indigenous communities in order to maximize the domestic workforce and remove barriers to entry[17]. It is clear that bridging what is becoming known as the "digital divide" will be key to ensuring that Indigenous peoples are not left out when it comes to capitalizing on the opportunities afforded by the technology and innovation sectors.

Key Finding 1A) Indigenous communities lack the reliable internet connectivity. This was a particular challenge for individuals living on-reserve vs. off-reserve.

Across a number of regions in B.C., unreliable internet connectivity is a common challenge, acting to prevent communities from reaching their full economic potential. For Indigenous peoples, the lack of reliable internet is a key concern. Without reliable internet infrastructure, Indigenous communities face hurdles to access training and resources, employment, and even entrepreneurship opportunities in the digital economy. These are challenges with varying degrees of severity for Indigenous communities, depending on region.

i. Regional Differences: Internet Reliability

Across all regions, some key concerns were noted in relation to internet reliability – that is, even when internet infrastructure was generally rated favorably, nearly all regions had expressed experiencing lag, download speeds, and bandwidth at some point or another that was below the provincial or national standard. Of course, these differences were more pronounced in some regions vs. others.

In the Chilliwack region for example, 70% of breakout activity participants asserted that "internet speed and access" is a challenge that is holding them back from job opportunities in the technology sector, or related to technology. This finding can be relayed to the results of the LMP survey for this region, where nearly half (44%) of respondents rated their internet quality as just "average" with only a small portion rating it "good" or "excellent". Similarly, in the North Vancouver region, 50% of breakout activity participants agreed that "poor service connection", used to communicate and deliver services and resources

[16] https://www.article19.org/data/files/Internet_Statement_Adopted.pdf
[17] http://www.vancouvereconomic.com/wp-content/uploads/2017/07/LMP-Phase-3-Report-March-2017-Vancouver-Economic-Commission-EMAIL.pdf

was a challenge holding them back from accessing opportunities. While further research is needed to determine the root problem communities face in relation when lacking reliable connectivity frameworks, it is clear that an unstable or internet connection can build barriers in our digital age.

When consulted on one important determinant of internet quality (bandwidth) the regional sessions found that 39% of participants agreed that "low bandwidth" is a challenge hindering proper and efficient administration and territory stewardship in their nation.

Patrika McEvoy, an elected councillor of the Old Massett Village Council, thought internet in the city of Prince Rupert was slow. Then she moved back home to Old Massett, Haida Gwaii. *"My kids are all on tablets and they like to watch Youtube and Netflix. So, what I do most times is download Netflix videos for them to watch offline. [I] was downloading a video and it took me four days [to do so]. I kind of had a meltdown, went to the internet service provider and [told them] 'my internet doesn't work.' And they [responded], 'nope, that's how it works."*

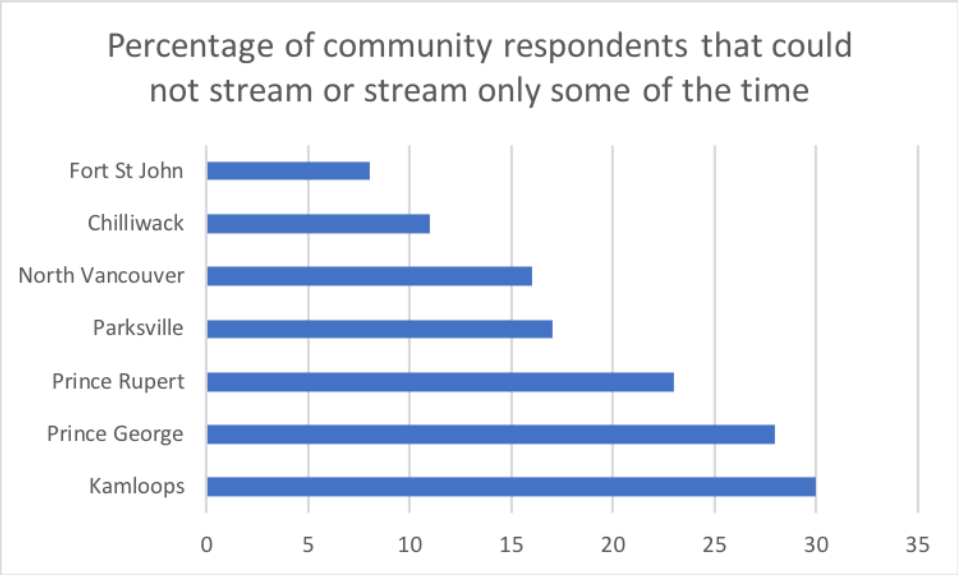
In a similar example, the Squamish Nation has six buildings in North Vancouver and one in the Squamish Valley. All are serviced by one data service connection in North Vancouver, Devan Williams, Client Intake Admin Coordinator at Squamish Nation Employment and Training, noted. Being in a more remote area than North Vancouver, Williams states that the building in the Valley is consistency slow and loses connection for a full day, at least once a month. *"For example, on Monday I was not able to access my phone or my computers [due to poor internet connection], so I was not able to communicate with my clients or my team. And when clients were coming in for support or to receive resources, I wasn't able to access it,"* Compare this to other more remote areas of the province like Prince George, where survey respondents were more likely to rate the internet as "poor".

Poor or inconsistent internet connectivity is a significant problem not just when it comes to engaging with the digital world and gaining access to opportunities, but for education as well. Williams noted that there was interest among Squamish members to receive digital skills training, and in particular, 37% of breakout activity participants in the North Vancouver region specifically stated that "online training" was a priority. However, for online training to take place effectively, internet connectivity – both good quality and reliable – is key. Williams stated that the community did not have enough bandwidth nor enough computers to host training locally, which means that these resources would need to be primarily accessed at home by participants. In most such cases, this means that home internet quality would need to be good enough to stream video content, which is not always possible. A review or survey results finds that more than 20% of all respondents across regions noted that they were either not able to stream video at home, or were only able to do so some of the time.

Sam Hall is the IT Manager for the Council of the Haida Nation. He describes the network on island as pretty "hodge podge." *"The hardware is outdated,"* he notes, with *"speeds ranging from 300mbps on a good day to 1mbps on a bad day […] And while not being able to stream Netflix is inconvenient, unreliable connectivity has a major negative impact on the day to day functions of the Haida Nation."*

Hall goes on to explain that *"Some of [the] offices in Old Massett suffer the most. We keep growing as an organization so we keep hiring more and more staff […] we're putting them in these offices that already*

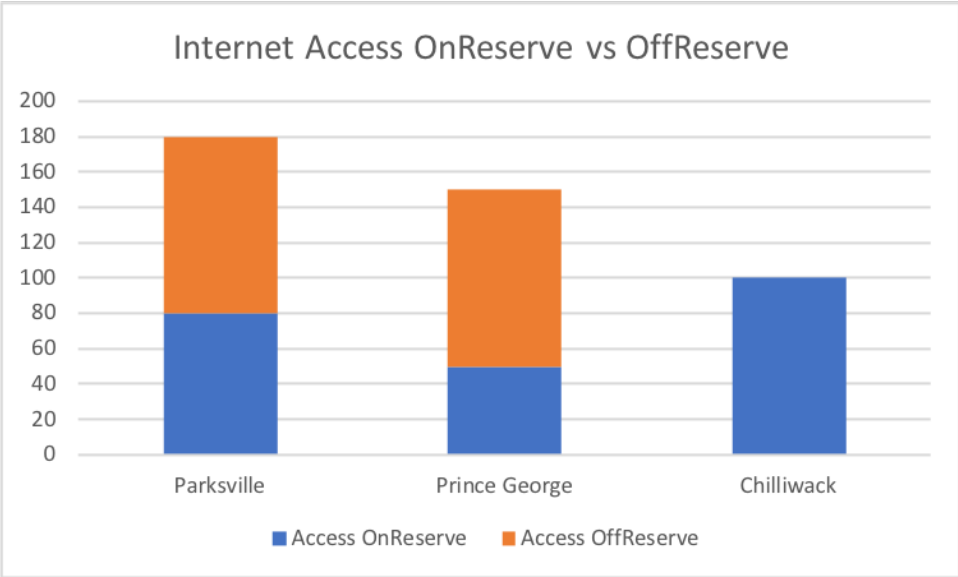
have pretty limited capacity, [which means] you get 10-15 people with a 2mbps connection. It's really hard. Often a lot of them will travel the 100kms to our main office in Skidegate to be able to do their work; to upload onto our website, to download a dataset. [Having an unreliable internet connection] really slows things down in terms of the work we can do and the speed with which we can put things out."

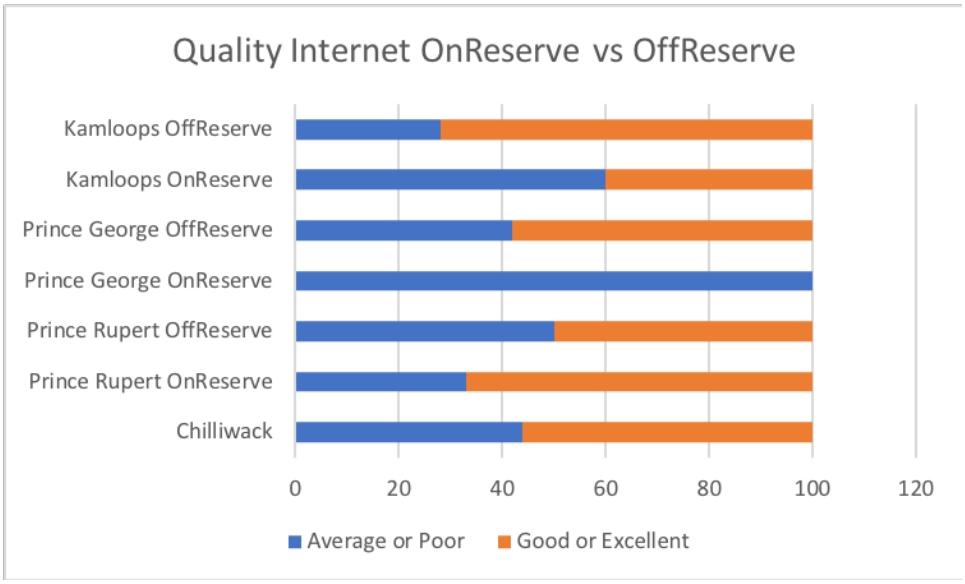


While circumstances may vary somewhat across regions, many stories were recanted across the province which support the notion of unreliable connectivity infrastructure among Indigenous communities. Sometimes it was in relation to downloading a video and having it take over four days – like McAvoy's experience – other times it was about not being able to access GIS mapping data; and at times it was even in relation to unplanned outages with no indication of when the service would be restored. These are important experiences that need to be shared in order to begin to understand the challenges that Indigenous communities face when attempting to access reliable internet infrastructure, and as a result, engage meaningfully with the digital economy and the economic opportunities it presents.

ii. Key Distinction - On vs. off-reserve internet access:

While access to at-home internet varied across regions, this challenge was most pressing for respondents who lived on-reserve. Here, only half of survey respondents [living on-reserve] stated having internet access at home. While further research is required to specify the reasons for lack of home internet – e.g. choosing not to have it because of preference, cost, credit problems, etc. – finding the root cause of this distinction is important, as notable variances are evident. For example, compare discrepancies in Parksville or Prince George where 100% of off-reserve Indigenous respondents stated having internet access at home in both locations, compared to only 80% and 50% of on-reserve respondents, respectively. In Chilliwack, home internet access appeared to be accessible on-reserve (with all respondents stating that they had internet access at home), however, about half (44%) of survey respondents described their internet access as only "average".





In the Prince Rupert region, 31% of breakout activity participants agree that *"[unreliable] internet service (outages, not enough bandwidth) to make entrepreneurship less viable"* and is a challenge that holds back economic development and entrepreneurship in their nation. For Prince Rupert, the differences between internet reliability on vs. off-reserve was also significant in the survey, with on-reserve communities facing the brunt of this challenge. In Prince Rupert, 33% of survey respondents rated their internet connection as "poor", whereas 50% of off-reserve respondents characterized their internet as "good" and "excellent".

While more research is required to uncover some of the key reasons behind these results, preliminary investigations in Phase 1 have highlighted important distinctions between internet quality and reliability on vs. off-reserve. Internet quality should be improved across the board among Indigenous communities to ensure that they are equipped with the tools they need to succeed in our increasingly digital and interconnected world; however, the urgency of doing this for on-reserve communities is clear.

Key Finding 1B) Many Indigenous communities are interested in exploring ISP ownership or control models to spur education and training opportunities related to digital technology. This in turn, can help bolster local economic development.

During the breakout activities, many respondents across regions agreed that a community-based model to digital services was key to future digital engagement and economic development. For example, in the Chilliwack region, 50% of breakout activity participants stated that "building our own ISP in community" is a priority that is needed to sustain education and training opportunities in tech. This is something that was viewed as essential to growing future jobs and business opportunities.

Darren Edgar is the deputy chief of the Kitasoo Band. Edgar sees the issue of connectivity infrastructure as a challenge facing his remote community, but also as a business opportunity. *"Technology is the wave that's come. If we don't do anything it's going to leave us behind. So we've got to get more involved and I think that's what's happening… This is an opportunity to have a First Nations technology company whether it's through telecommunications or what have you, there are so many opportunities coming."*

Exploring options for ISP ownership was seen as a method by which to increase efficiencies and access to information for communities. More than half (55%) of Parksville session attendees noted that there is *"no band membership database that can be utilized by each department – like Education, Social development, and others."* This presents an important challenge not only impacting the department's ability to be efficient and effective, but one that also holds the community back from accessing information from their band.

This lack of centralization or organization in community data was echoed during the Fort Saint John regional sessions as well. Here, 47% of breakout activity participants agreed that they had *"no system and [no] committed data [platform helping all groups] see sharing the big picture."* In fact, it was noted that as a result of this lack of organization with data, it often led to *"so much activity in the territory, [with everyone] always playing catch up"*. This was viewed as an immense barrier, ultimately hindering band administration and territory stewardship in their nation. Having control or oversight into these systems would help create efficiencies and spur improved data practices. ISP ownership can be one pathway by which to achieve this.

THEME 2: INDIGENOUS PEOPLES HAVE UNIQUE NEEDS WHEN IT COMES TO ENTERING THE TECHNOLOGY SECTOR.

Key Finding 2A) Awareness and knowledge of pathways for opportunities, particularly for those with no previous digital training, prevents Indigenous peoples from participating in the technology sector.

Reid Skelton-Morvin is from the Tsimshian and Nisga'a Nations and is the co-founder of Northern Online Results, a digital marketing agency based in Prince Rupert. Skelton-Morvin points out that a lack of awareness of the opportunities presented by technology, and the skills to take advantage of those opportunities, is preventing Indigenous peoples from participating in the technology sector.

"Some of the challenges that I see that hold back economic development and entrepreneurship is access to a lot of the tech, the trends and the strategies. I know the north is fairly behind when it comes to a lot of this modern technology and ways and forms of communication. We found that it's a service that's needed. However, it's challenging for us to scale up here because we don't have many individuals who are trained or experienced… This kind of stuff being brought to the north is super beneficial and it can really kick off the economy."

This distinction between digital technology use and understanding of digital opportunities and skillsets required for those opportunities is key – being that the two do not necessarily go hand-in-hand. Overwhelmingly, based on survey responses, use of digital technology – particularly via access to a smartphone – was high. Many respondents noted having access to a smartphone, with data, and tending to use their phone on a daily basis, often for the purpose of email, social media, and texting. This is no difference than overall trends seen in Canada, where the smartphone is the second most-utilized internet enabled device in a home, and is primarily used for online shopping, social media and web-based applications such as Netflix, and Apple Music[18]. However, where digital use was common across regions, awareness of digital occupations and skill needs were not.

i. Regional differences: digital awareness & knowledge

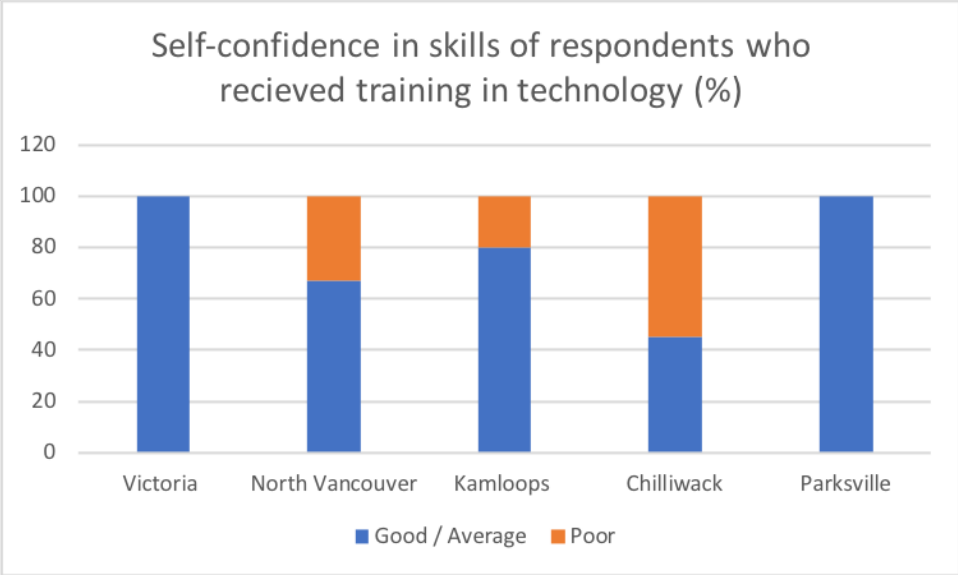
The Victoria area was a clear outlier in this initial research. Here, only 10% of respondents noted having had digital skills training (compared to half of more in other regions). While that portion of the population rated their skills as "good", there is a need to further dig into the reasons for this selection in Victoria. This way, we can begin to understand whether there are significant factors contributing to the inability of communities in this region to gain access to training or awareness. Otherwise, some digital training had been completed by a significant number of respondents from each region, despite nuances that exist between the regions and the levels of confidence that respondents reported having as a result of their training.

In the North Vancouver, Kamloops, Chilliwack and Parksville regions, a larger number (nearly half) of survey respondents noted having already gained some digital skill training – the type of training, whether

[18] https://cira.ca/factbook/canada%E2%80%99s-internet-factbook-2018

online, in-class, self-taught, and under which platforms was not specified. However, of those who had completed some training already, confidence levels of digital skills tended to be higher.

What we do see more of in Parksville, Prince George and Fort Saint John are instances of people *with* previous digital skills training rating their skills as "average" or "poor" vs. "good" or "excellent". In Parksville, more than half of respondents who had received training still rated their skills as "average", despite that training, where in other regions no respondents who had received training rated their skills below "good". In Prince George and Fort Saint John more than 30% of respondents with some digital background ranked their skills as "average". In Prince George and in Fort Saint John 20% even ranked their skills as "poor" despite the training. More research is required to understand the cause of these perceptions, however they may signify a need to improve the quality of institutions offering digital skills training in these regions.



Key Finding 2B) Some Indigenous peoples, particularly Indigenous women, are not always able or willing to leave their community to access training or employment opportunities.

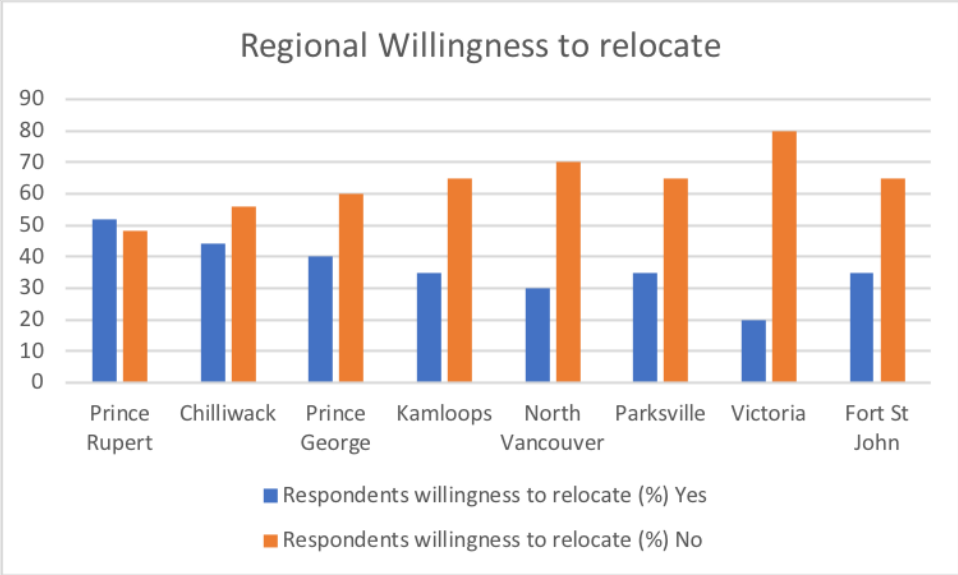
Overall, our preliminary studies found that across regions, approximately one-third of Indigenous respondents are willing to relocate for training, or employment opportunities in digital technology. Naturally, the willingness to relocate differed across communities, however among those who answered that they were not willing to relocate, many stated that they were reluctant to leave their community and families. The majority of respondents overall (nearly 40%) were unsure of their willingness to relocate, citing that it would depend on the circumstance and the opportunity at hand.

There are several possibilities for not being able or willing to relocate, including financial, personal, familial and cultural. Randy Orr, the band manager of the Halfway River First Nation, shares some insight into the challenges some of the members of his small reserve in northeastern BC face when moving to a larger urban centre. *"When I say 175 (community members), it's a close knit community. Basically, everybody is living*

off of everybody else's pocket. So when they go to the big city to do the training, they get terrified of being alone and give up. Even though they might be succeeding academically, they're not succeeding socially," Orr says.

i. Regional and gender differences: ability and willingness to relocate

While we see distinctions related to ability and willingness to relocate across regions, we also see a clear distinction of willingness to relocate when we compare male to female perspectives on this subject. Overall, nearly 60% of men were willing to relocate with another 26% open to the option depending on the opportunity. An analysis of female perspectives on the subject paints a very different picture. Here, slightly more than one quarter of women were willing to relocate, with another 47% open to the option depending on the opportunity. At only one quarter of women willing to relocate, that's less than half the figure of men, across all regions.



Respondents in Prince Rupert, Chilliwack, and Prince George appeared to be the most categorically open to relocation for digital skills training or employment opportunities. Here, 52%, 44%, and 40% of respondents said they would relocate for opportunities. Compare this to other regions like Kamloops, North Vancouver, Parksville, Victoria and Fort Saint John where only 35% or fewer of respondents were willing to do so. The lowest rate of willingness to relocate was found North Vancouver and Victoria – the communities closest to the largest urban and technology centres in BC. In North Vancouver, only 30% of respondents said they would relocate and in Victoria, only 20% showed a willingness to do so. Further research is required to understand the reasons behind these initial findings.

ii. Indigenous women's cultural responsibilities may be a factor

While the survey found that overall, women were much more uncertain about relocation than men – with only 25% of women keen to relocate if necessary, vs. 60% of men – regional differences were also found within this distinction. While more research is required to understand any specific reasons for this resistance

or uncertainty, we know that cultural and familial responsibilities are major factors that need to be explored more deeply.

In the regions where relocation was most favorably viewed (Chilliwack, Prince George, and Prince Rupert), women were still less inclined to answer "yes" to relocation than men. In Chilliwack for example, only one quarter of women said they would be willing to relocate, compared to half of men. In Prince George and Prince Rupert similarly, only 18% and 37% of women said they would relocate, compared to 77% and 62% of men.

When we look at the regions less likely to consider relocation, we find that the increased uncertainty is primarily resultant of some men in these regions being less willing to relocate – whereas willingness of women to do so is still tended to range between the between 10% (lowest) to 50% (highest). In Kamloops, roughly 28% of women noted being open to relocation, vs. 67% of men. In Parksville, North Vancouver, and Fort Saint John, 31%, 25%, and 10% of women said they would relocate, respectively; compared to roughly half of men. Victoria, again, presented an interesting finding in this space, where none of the women surveyed said they would consider relocating, whereas half of men would. More research into the reasons of these responses in Victoria would help to shed light on specific circumstances – if any – influencing the resistance to relocation in this region.

Key Finding 2C) Some Indigenous communities possess unique barriers or lack certain capacities required to utilize technology in a way that serves community priorities.

There are many considerations and challenges that are important to note and take into consideration when studying and developing pathways to training, skill development and employment across Indigenous communities. Some of these considerations include the oftentimes closer connection to culture and history that Indigenous communities possess in comparison to the rest of the Canadian population. For this reason, it is crucial that any research or actions taken on this subject include this aspect. For example, any training programs developed must be rooted in Indigenous culture, with Indigenous role models, community champions, and mentors playing a leading role[19].

At the same time as the specific culture and historical circumstances need to be taken into account for training or development, specific barriers or challenges that Indigenous communities often face on the pathway to skill or economic development must be acknowledged.

i. Mental Health Considerations

Sandy Morrison, a 23-year-old from the Witset First Nation, participated in breakout activities in Prince Rupert. Morrison is a full-time student of the University and College Preparation Program (UCEP) in Witset, where he is upgrading his high school credits and starting to explore post-secondary courses. In his view, there are many barriers preventing Indigenous youth from even *thinking* about accessing digital skills training or working towards a career in tech.

[19] https://www.ictc-ctic.ca/wp-content/uploads/2017/06/Indigenous_Supply_ICTC_FINAL_ENG.pdf

Specifically, he mentions the mental health and poverty challenges that are hard to overcome, particularly for those living on-reserve. "*There's not a lot of hope"* he says *"Depending on the reserve, it can be very run down […and] there's not a lot of access to information,"* There are key historical events that have created catastrophic impacts for not only Indigenous communities in BC, but across Canada. It is well-documented that higher rates of depression, abuse and even suicide attempts are found among adults who have a parent or grandparent that attended a residential school[20]. This is just one example of a reality that highlights the necessity of considering unique needs of Indigenous communities.

Morrison goes further to highlight the significance of these circumstances. He says that combining these systemic barriers with a lack of the right skills or education can significantly influence the willingness or comfort of learn something new. In cases like these, suddenly, making a big decision to enter into a training program or move away for a career opportunity can be very frightening and overwhelming. Morrison reinforces this notion through his own experience. "*It's very intimidating."* He notes. *"I'm basically starting from [scratch]. other than surfing the internet, [I don't know] anything about digital technologies."*

Mental health is an important aspect to consider and acknowledge on the pathway to skill development among Indigenous communities. Morrison has taken action to ensure his own mental health by establishing a circle of support in his community and school. This has been a significant influencer to building his confidence in his academic and professional ability, while simultaneously making him more aware of potential opportunities.

ii. Other Barriers – Socio-economic considerations

Other barriers identified in this initial research tended to be more socio-economic in nature, or simply related to fear or lack of comfort with the potential negative side effects of technology. General barriers were presented more as aversions to technology due to the perception of certain negative impacts that it may have. Common themes found when it came to negative perceptions of technology included: the belief that older generations may be "left behind" with digital progress; social isolation – including cyberbullying – that may result from increased technology use; loss of community and culture; loss of face-to-face social interaction; and isolation or ostracization of people without the digital skills needed to "keep up".

Related to specific socio-economic conditions, one key barrier that arose more frequently than others was the possession of a driver's licence – something that would usually be needed to travel for training or work, where public transit is not readily available or reliable. This was found to be less of a barrier in Chilliwack, North Vancouver and Fort Saint John, where the majority of respondents noted having a Class 5 driver's licence. In these regions, 100%, 85% and 83% reported having a licence. Compare this to Parksville, Kamloops, Prince George, Prince Rupert, or Victoria where only 65%, 60%, 58%, 48% and 33% reported having a driver's licence, respectively.

Access to childcare did not appear to be a significant barrier, with most respondents across all regions stating that they either did not require childcare or had options for it, if required. The only regions where some respondents noted problems with childcare – either in relation to lack of availability or affordability

[20] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4622632/

– were Kamloops, Prince George and Prince Rupert. In Kamloops, 5% in total of respondents noted that they required childcare, but that the childcare facility in their region was full; with another 5% noting that a childcare facility was available but they could not afford it. In Prince George, the problem was entirely focused on availability, where 10% of respondents said the childcare facility in their community was full. In Prince Rupert, the problem identified was slightly different, where 8% of respondents stated there was no childcare facility available in their community at all.

More research is required to understand the reasons for regions that had a low attainment of driver's licences, and while not a high priority for most, investigating options for childcare – whether that means having more facilities, or subsidizing fees – would be helpful in encouraging more women to attain tech training. Lastly, understanding the reasons behind negative perceptions of technology is important, and further research is required to do so, along with understand the weight that these perceptions may place on openness to careers or training opportunities in the field.

THEME 3: INDIGENOUS COMMUNITIES ARE INTERESTED IN DIGITAL SKILLS TRAINING AND ARE OPTIMISTIC ABOUT THE POTENTIAL OF EMPLOYMENT IN THE TECHNOLOGY SECTOR.

Key Finding 3A) Across regions in BC, Indigenous communities expressed high interest in digital skills training.

It was identified through survey results that 68% of Indigenous respondents are interested in digital skills training, and 44% are very interested in entrepreneurship. While interest in digital skill training was highest among youth aged 15-19 (nearly 90% showing interest), it also tended to be high across all age brackets in all regions. The lowest rate of interest was seen among youth aged 20-29 (56% interested). Understanding why certain ages or demographics have less or more interest in training than others is important, and will require additional research to uncover. This initial high rate of interest seen across ages and demographics paints a promising picture, highlighting potential future opportunities.

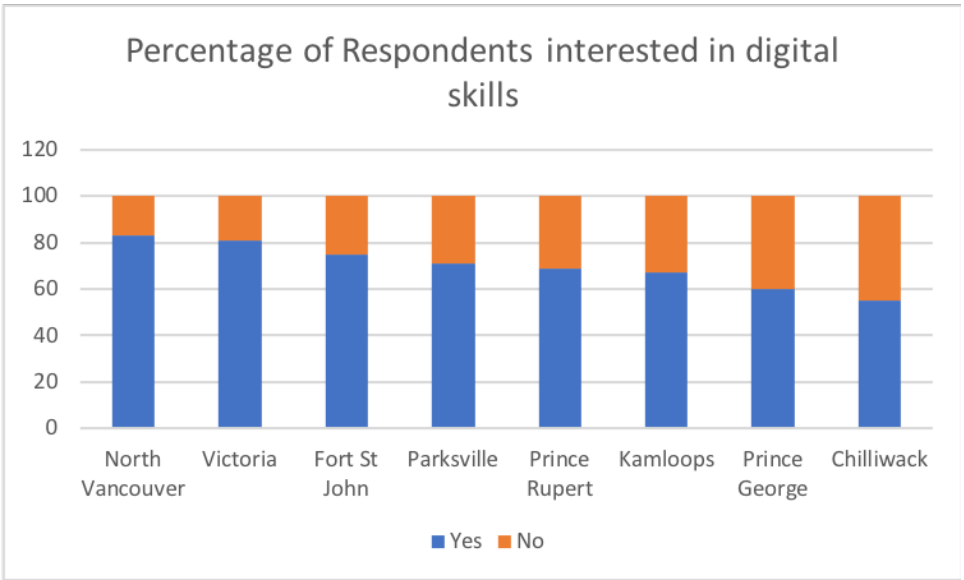
Sandy Morrison, the 23-year-old from the Witset First Nation reinforces his excitement for the opportunities that digital training can offer. After listening to the First Nations Technology Council's presentation and discussing career options such as web development, digital marketing, network setup and support, software testing, GIS/GPS mapping and administrative professional, Morrison stated, *"I don't think I've been this excited to go out and learn skills like this before."*

Sandy Morrison's story tells us that Indigenous youth must be made aware of the career opportunities in technology and have community supports in place to nurture their confidence. With his support systems in place, Morrison asserted that he now feels ready to enter the First Nations Technology Council's training programs and explore which path in the technology sector is right for him. *"The Foundations [in Innovation and Technology] training will be a great start"* says Morrison *"just [getting] an overview of everything and then seeing what I can do. [I think] digital technology is going to be very huge – having those skills in [my] back pocket will be very useful."*

i. Digital Skills: Regional Differences

Overall, communities expressed high interest in digital skills, but there are some variances among the specific regions. The highest level of interest in digital skills training was found in North Vancouver and Victoria, where over 83% and 81% of respondents selected that they were interested. In these two regions, the highest levels of interest were found in digital media and software development. In North Vancouver, nearly half of respondents selected digital media as the skillset they were most interested in gaining. This is not altogether surprising considering North Vancouver's proximity to Vancouver, which is one of the top digital media, gaming and FX hubs in the world[21].

[21] http://www.vancouvereconomic.com/focus/digital-entertainment-interactive/



The regions showing less but still a promising interest level were Fort Saint John and Parksville where 75%, and 71% were interested, respectively; and the regions with the lowest interest were Prince Rupert, Kamloops, Prince George, and Chilliwack where 69%, 67%, 60% and 55% were interested in digital skills training. Most of the time, where interest was not shown outright, respondents stated that they would need more information or details on the type and reason of the training before making a chance – meaning that they did not rule it out completely, but were not yet sure of the benefit. Chilliwack, Kamloops, Prince George, and Fort Saint John were the only regions where any respondents said that they were categorically *not* interested in the digital skills training. In Chilliwack, the region with the lowest interest in training overall, nearly 45% of respondents were unsure of which area of digital skills they were interested in or would be relevant to them. More research will be required to find out why interest in or knowledge of digital technology and skills is higher or lower in certain regions than others.

Key Finding 3B) The majority of Indigenous communities felt optimistic about their ability to succeed in a tech-based career.

Overall, Indigenous communities across regions appeared not only to be generally interested in digital skill attainment, but were often confident in their ability to succeed in a digital career. When asked about their levels of confidence in succeeding in a tech-based career, the majority of responses were “very confident” or “somewhat confident”. More research is needed to determine if this feeling is based on current skillsets or the future ability to learn in-demand digital skills; however, the initial finding itself paints a positive picture of the open attitude required to capitalize on opportunities for digital adoption.

Generally-speaking, nearly all communities expressed a significant level of confidence to succeed in a career in technology; however, some regional variance was noted. The most significant rates of high confidence were found in North Vancouver and Victoria, where 67% and 50% of respondents stated that they were "very confident" in their ability to succeed in a tech-based career. A look at other regions reveals much lower rates of respondents asserting that they felt "very confident" in their ability to succeed in such a role. In Chilliwack, Kamloops, Prince George and Fort Saint John, only 55%, 38%, 35%, and 33% of respondents selected themselves to be "very confident" in this ability. This number drops even further in Prince Rupert and Parksville, where only 27% and 24% found this categorization representative of their confidence level. These are interesting findings that should be dug into via a deeper analysis of regional differences. Doing so will highlight key differences that impact confidence levels.

For those who expressed a lower level of confidence in relation to their ability to succeed in a digital career, the most common solutions to help boost their confidence were tech training (both local and remote, as well as formal and informal) and mentorship.

THEME 4: INDIGENOUS PEOPLES ARE SEEKING MENTORSHIP AND PARTNERSHIP FROM THE TECHNOLOGY SECTOR TO ADVANCE TECH ENGAGEMENT AND HELP COMMUNITIES GAIN IMPORTANT DIGITAL SKILLS.

Key Finding 4A) Indigenous communities want to nurture tech talent, but experience financial and social uncertainties.

While some Indigenous peoples are willing to relocate for training or career opportunities, two of the biggest barriers to relocation (which can support economic success), are still: reluctance to leave family and community, and the financial burden of moving and training.

i. Financial Burdens

"Costs of education in tech are exorbitant. We have a youth who is going to Camosun College and his first semester alone costs five thousand dollars. He is in the graphics and digital production program […] and we hosted a successful fundraiser to keep him on his feet, but the costs are too high." explains Charlotte Charlie, a youth worker with the Songhees Nation in Victoria.

Charlie attended the Technology Council's engagement session in Victoria. Her youth group have a land stewardship program where they digitize maps of traditional food systems in the ocean and on land. Her 17-year-old son Phoenix taught himself how to use QGIS, a free and open-source geospatial mapping software to map sacred sites. Phoenix was also tutored by microbiologists at the University of Victoria to study eel grass and clam restoration for the Songhees lands department.

The example of Charlie's son highlights one area of access to technology and training that is becoming increasingly popular – opensource software and online courses. However, while this is an option, it requires a stable internet connection, and is currently still viewed by employers as more of a way to stay up to date with technology and continually learn, rather than an alternative to a post-secondary education.

Moreover, even though short-duration training (or "bootcamp"-style courses) are becoming increasingly popular as a means of quickly upskilling for in-demand tech jobs, the costs of these programs can be extremely prohibitive. For example, Lighthouse Labs has a well-recognized intensive web development program which has proven to yield high rates of employment success upon graduation. However, while the program quality is excellent, the cost is nearly $10,000 for a 3-month program[22]. Other examples include Calgary's EvolveU, providing a full stack developer bootcamp. Full stack developers are one of the most in-demand jobs in Canada at this time, the EvolveU bootcamp runs for 6 months program to train for this job. However, similar to Lighthouse Labs, the cost of this program is upwards of $13,000[23]. These high costs can present a significant barrier to entry for many, including Indigenous communities.

[22] https://lighthouselabs.ca/web-bootcamp
[23] https://www.evolveu.ca/program/

ii. Fear of "brain drain"

Highlighting the example of her son using digital technology to create and support an economic opportunity for her community, Charlie elaborates on this further, stating that she believes it's important for her son to access training, but doesn't agree with *"coming in, sourcing out talent, and moving on."* In short, she feels that talent such as her son need to obtain the training required to become future leaders for their communities. Charlie notes the opportunity that tech training can offer to advance the sovereignty of their nations, but fears the possibility of Indigenous youth receiving this training and then going to *"work for a tech company in Vancouver".*

The fear that Charlie has about talent leaving the community for opportunities in urban centres is part of a phenomenon that is commonly referred to as "brain drain." This concept, unfortunately, is nothing new to BC. Previously, fears of brain drain were present with young tech graduates going to work in Silicon Valley; now the brain drain fear has arisen as a response to the high cost of living in Vancouver, sending talent to other more affordable centres like Montreal or Ottawa[24]. However, while for Indigenous communities the fear may be less rooted in talent leaving the province altogether, it is still persistent when it comes to the possibility of talent leaving their communities and losing touch with their family and culture. This fear is connected to some of the perceived negative impacts of technology that survey respondents articulated. In particular, some survey respondents felt that increased use of technology would lead to a loss of in-person communication and a loss of connection with the community and culture.

The brain drain is something that Animikii Indigenous Technology founder Jeff Ward is trying to combat. His company operates out of the Songhees Innovation Centre, a co-working space in Songhees that Ward started to spur economic development and entrepreneurship in the community. *"People are happiest and most successful where their family systems are, where their root systems are. So, we are enabling [people] to stay in their community and make an impact there,"* Ward states. Ward sees immense value in coupling the idea of tech training with community engagement. This is so much so that Ward and his staff volunteer their time with Charlie's youth group to provide mentorship on different technology projects. He recognizes the need for talent to contribute to the growth of the nation: however, he also understands the social impact of increasing Indigenous representation in the tech sector.

At the same time, Ward highlights the importance of tech skill development regardless of outcome. *"Not everybody will go get a career in tech and then go back to their community. If many do, that's amazing. And it will happen. But if others choose just to go get a career in tech and make an amazing life working for Amazon.com in downtown Vancouver, Seattle or Silicon Valley there's still benefits to that. That will impact community. This person will be seen as a role model. As a leader. As a trailblazer."* Here, Ward states that even if digitally-skilled youth eventually physically leave their communities, that does not prevent them from being leaders for their communities.

[24] https://www.cbc.ca/news/canada/british-columbia/vancouver-s-brain-drain-young-professionals-leaving-over-high-cost-of-housing-1.4976682

Key Finding 4B) A willingness from technology companies to partner with Indigenous communities leads to mutual benefit and success.

Total Support Solutions (TSS) CEO Chris Gillpen has worked with 20 Indigenous communities throughout Vancouver Island providing IT support for band offices, schools, health centres and emergency services. His company currently employs three Indigenous staff out of 26 and TSS has formed joint-venture partnerships with three Indigenous communities throughout the province that has opened up new markets for the company, while providing training opportunities for community members. His business model is to provide remote IT support via phone and online chat but also to train and hire locally, so that Indigenous people can become the point of contact for the company on the ground.

"As great as having remote support is, sometimes you need somebody on the ground to actually flip the switch or whatever it is. But [at the same time, you need local people] also to be on our team to support other clients as well. They don't necessarily have to support their local community exclusively, […] they can also work to support other communities and clients that Total Support has."

Gilpen has also implemented flexible HR policies that give his employees agency over where they work. He recognizes that, *"for so many of our Indigenous staff, they want to be close to their families. They want to be a part of their community. They don't want to be in a situation where they have to decide between their career and their culture. And we try as best as humanly possible to allow them to be both people at once."*

Helping to make that possibility a reality, TSS has business partnerships with the Naut'sa mawt Tribal Council, Treaty 8 Tribal Council and the Metlakatla First Nation. The nature of the joint-ventures allow TSS and the Nations to compete for IT contracts together while also raising capacity not just of the membership, but of the nation's leadership and staff. Key stills built in the process include drafting contracts, ensuring quality of service, and understanding how to look for the right infrastructure from an IT perspective, something that creates more tech agency for the nation.

Gilpen expresses the vast potential that these business partnerships can have for Indigenous communities. "*[Eventually] you can start to say things like, 'you can absolutely put a tower here and you can rent the space. P.S. we aren't just going to rent you the space, we need you to save one of the levels of that tower free for future use of ours.'"* Gilpen states. *"So, they build the towers but you get to hang your gear off of it as well. Once you start to think about those things you realize there is an inordinate amount of opportunities in your local communities."*

That said, despite his initial successes working in Indigenous communities, Gilpen knows that employing three Indigenous peoples out of 26 is not a significant enough representation, even if it is much higher than the average across the sector. Increasing Indigenous representation in the sector and seeing more partnerships between communities and tech companies will be key. This will come from a combination of technology companies becoming more educated about Indigenous peoples, their skills and their fit for in-demand jobs; and Indigenous people themselves highlighting the many attributes and skills that they possess to the advantage of businesses.

Gilpen summarizes this golden opportunity for collaboration, stating, "*I look at some of the communities around and that they have […]training through FNTC: […]when that's put together in a package that shows there's support from the Nation giving a company access to a new market that they never had access to before – they'd be crazy not to engage with a First Nation."*

Key Finding 4C) Indigenous communities see technology as a tool to advance self-determination, however worry about the availability of local talent to fulfill project and community needs..

An interesting reflection about community capacity was raised during a roundtable discussion at the Prince Rupert engagement session. Bess Leeson, a Community Projects Coordinator at Tribal Resources Investment Corporation (TRICORP), spoke to the crowd and observed that, *"My dad had taught my nephew how to fish. We passed those things down generationally. Technology is not one that we do. We don't pass that down generationally."*

She went on to discuss a problem in her home community of Kitkatla where a telehealth program exists to connect patients on the reserve with doctors in Vancouver. While well intentioned, Leeson explained that the program does not work. *"We don't know what it is."* She highlights. *"Do they not know how to use the program or is it access to the program that's the problem?"*

Regional sessions found similar capacity challenges in other regions. Garry Oker is an elected councilor of the Doig River First Nation in the northeast region of the province. He is seen as a cultural leader and knowledge keeper who also holds the technology portfolio for his community. Oker attended the Technology Council's engagement session in Fort St. John and spoke to some of his community's biggest challenges when it comes to utilizing and adopting technology. In his view, much of this is tied to managing the general sense of overwhelm at the governance level.

"We are constantly immersed with government and industry who have different technologies and resources to be able to plan out there […] projects that they want to do. For us, it's instead just a process of trying to catch up. That's our biggest thing, to make sure we can harness the young people to be part of our community development," Oker says.

Oker lists off a number of community initiatives that require capacity building and the adoption of technology such as language and culture preservation, along with revitalization through virtual reality and territory stewardship. As a response to this, Oker sees these companies responding to referrals through drones and GIS/GPS mapping. He emphasizes, *"We definitely are looking at training our young people to bring in those technology tools. The biggest challenge is just the multitude of it."*

At the regional sessions, the First Nations Technology Council heard firsthand from Oker, Leeson and others around the province that technology underpins community challenges and priorities across a wide spectrum of issues. This spans from health services delivery, to governance, to language and even culture programs. However, many rural and remote nations lack the local capacity to access and take advantage of these technologies; and as a result, are unable to maximize the efficiency and effectiveness of their community programs and projects. Understanding this, it is clear that developing pathways for Indigenous

communities to gain access to in-demand skills is key. This can not only grow their own personal skillsets, but help their communities develop and thrive.

Part IV: Next Steps/Recommendations

Phase 1 engagement successfully validated the Technology Council's Indigenous Research Methodology while highlighting important themes regarding engagement of Indigenous peoples in BC with the technology sector and digital skill development. However, while these findings are interesting and timely, small sample sizes and limited response rates mean that more research is required to uncover the deeper meanings, influencing factors, and trends behind these preliminary findings. Additionally, in tandem with a deeper dive into the needs and capabilities of Indigenous communities across regions, concentrated research must also be completed on industry demand. Understanding the employment of skill needs of not just the technology sector in these regions, but the changing skill needs of traditional sectors – such as mining – which are big employers of Indigenous communities, is essential.

Based on this dual need, the First Nations Technology Council strongly recommends the deployment of a "Phase 2" study deploying targeted primary research to capture these deep, timely, and relevant data and findings. Tactics to be utilized include undertaking a comprehensive review of in-community capacity, access to connectivity infrastructure, community priorities underpinned by technology, opportunities for industry partnership, along with industry demand. With the approval of a Phase 2 project, the Technology Council will attempt to highlight these needs and more by deploying the following activities.

Recommendation 1: Conduct a province-wide survey targeting all 203 First Nations communities in B.C. to determine community and regional barriers to technology sector labour market participation, identifying recommendations and interventions to address concerns raised in Key Finding 2A and 2B. The recommendations will inform a full Indigenous Labour Market Strategy aimed at increasing Indigenous participation and leadership in the technology sector, including key "Calls to Action" for industry and all levels of government.

Recommendation 2: Create a province-wide Indigenous community and learner database to help identify digital skills needs of each Indigenous community and match with training and employment opportunities presented by institutes and industry, capitalizing on Key Finding 4B.

Recommendation 3: Conduct a province-wide community assessment of all 203 First Nations using the Indigenous Digital Adoption Index (IDAI) to create a benchmark study assessing First Nations community connectivity and infrastructure to provide expedited recommendations that address Key Finding 1A, and other digital readiness indicators contributing to full participation in the technology sector to address Key Finding 2C and 4C.

Appendix 1 – Indigenous Research Methodology

Co-Creating the Digital Domain:
The First Nations Technology Council's Indigenous Research Methodology (IRM)

Draft 1 – December 2017

Introduction
When undertaken in the spirit of co-creation, respect and mutual benefit, research can play a transformative role within our communities. As we continue to work towards the realization of true self determination and nation-to-nation relationships, actionable data driven by the needs and voices of our communities is invaluable. This type of knowledge will support informed decision making and help foster a prosperous and sustainable future for all Indigenous peoples across the province.

Historically, research has been conducted "on or about" rather than "for and with" Indigenous peoples, diminishing the value of the knowledge held by our communities. How our communities have been approached, how research has been conducted and how findings and insights are presented and utilized have produced a power imbalance in regards to the research process. In this era of reconciliation, we must critically examine these longstanding practices and approaches in order to reimagine research as a tool of empowerment. We must aim to generate insights in accordance with the needs of our communities, elevating their voices and deepening relationships through the entire process and long after formal objectives have been met.

As an Indigenous-led organization, the development of this Indigenous Research Methodology (IRM) will guide us in all occasions and spaces in which knowledge and ideas are shared. We are working to embed our IRM's core principles across all of our programming, and will expect the same of project partners moving forward.

By decolonizing research, we are able to generate deeper insights tailored to the unique needs of our communities, enabling transformative change. This document will play a key role within all of our ongoing conversations on reconciliation, inspiring further conversations on empowering our communities through research.

Background
Research methodologies are often steeped in colonial values and need to be decolonized in order to fully hear and accurately represent the perspectives of Indigenous peoples. In compiling this IRM, the Technology Council conducted a comprehensive environmental scan of established and emerging Indigenous-led approaches to research. It focused on methods that rethink longstanding models, and tailoring lessons learned for the areas of focus of our programming. A list of sources consulted through the development of this IRM is included within the Appendix of this document.

Core Principles
There are 7 Core Principles that make up this methodology and that are being enacted across all domains of the Technology Council. These are: **Respect, Control, Community-Focus, Collaboration, Partnership, Sharing, Social Return.**

Respect
All research will be undertaken with the utmost respect and adherence to Indigenous values and protocols. Indigenous knowledge will be emphasized in the research, and all research undertaken must contribute in some way to recovering culture and traditions of Indigenous peoples. All efforts will be made to protect the rights, knowledge and traditions of Indigenous peoples.

Control
Research will allow for a redistribution of power and control into the hands of Indigenous peoples. Participants will have control over the process and results of the research and will be able to review, edit and veto results. A clear identification of control of the research results will be undertaken before any research, and will identify any royalties, publication credits or overall ownership. In addition, all contributions will be acknowledged and the rights, interests and sensitivities of Indigenous cultures will be protected.

All data collection and management will be undertaken with adherence to OCAP (Ownership, Control, Access, Possession), a First Nations-designed approach to research administered by the First Nations Information Governance Center. This detailed framework ensures responsibility and accountability to the research participants and a clarity of how information will be used and protected.

Community-Focus/Context
Recognizing the diversity and uniqueness of voices across our communities, the research will aim to categorize findings in a manner that demonstrates this diversity. In addition, the methodology will also be tailored to specific Nations and protocols. Research will also be undertaken with the utmost respect for the context and culture within which it is being undertaken – this means prioritizing Indigenous ways of knowing and respecting the protocol of the communities in which we co-create, learn and share.

Participation/Collaboration
Indigenous peoples will be involved in every step of the research process from design to reporting, including research terms, method and process. Early engagement will ensure that our communities feel invested in the process and able to voice any concerns or feedback that may emerge throughout the process. Prior and informed consent as well as ongoing consent and updates will ensure the research respects this participation throughout. Inclusion will be respectful and comprehensive and will allow for engagement in a manner that is determined and agreed upon by all. In cases of disagreement, a thorough negotiation process will be undertaken to ensure the needs of Indigenous peoples are being appropriately considered in the decision-making process.

Partnership
Relationships within the study will be based on trusting, respectful, ethical and mutually beneficial partnerships. Indigenous peoples will be the authors and leaders of the research and this will help establish a relationship of independence rather than dependence upon non-Indigenous people. In addition, the researcher will acknowledge their impact on the study and on the interpretation of data and will make every attempt to remove bias and acknowledge and minimize their impact on the data.

Sharing
In addition to the design and execution of the research in partnership with Indigenous communities, a practice of sharing will be incorporated throughout the process. The importance of sharing is applicable throughout the engagement process:

- sharing and negotiating research goals & objectives in a clear, concise and appropriate way at the start of the project
- sharing continual updates and monitoring of the research
- sharing outputs and results in a format that is accessible and understandable to all stakeholders

Social Return
Research shall be undertaken with an explicit goal of strengthening community, and making a positive and meaningful contribution to Indigenous needs, goals and aspirations. In particular, research will be undertaken understanding the responsibility to future generations and the relevance of findings for these generations. Research shall also be undertaken in a mutually beneficial and reciprocal matter where a fair return is provided for research outputs, and an investment in the community's skills and abilities is made by the research team.

Methods
The goal of the Indigenous research methodology is to gain a holistic understanding of realities faced by Indigenous peoples, and in particular to bring silent voices to life. The Technology Council will always incorporate techniques that ensure power and voice is appropriately and respectfully placed in the hands of our communities:

- Research tools and techniques will be open, direct and transparent, and qualitative and quantitative methods will be used to ensure we obtain a well-rounded and comprehensive understanding of current dynamics and emerging opportunities.
- Engagements will be of a dynamic nature that is responsive to local needs and priorities and as such, methods and engagements will be tailored to each specific Nation and the appropriate protocols of the region.
- Engagements will respect different language capabilities and learning styles, and where needed, a translator will be leveraged.

The research will utilize a mixed-method framework that incorporates various engagement methods, including the following approaches:

Community-Based Participatory Research (CBPR)
"CBPR is a form of collaborative research that prioritizes the needs of a community. Other forms of such approaches include those labeled as participatory action research, community-based research, participatory evaluation, collaborative inquiry, and participatory research. Although distinctions exist between each of these frameworks, these terms have been used interchangeably with the underlying goal of collaboration, research equality, and community control."[25]

Quantitative & Qualitative Surveys
Surveys are a set of questions developed by a researcher and answered by the research participants. In a mixed methods approach, both quantitative and qualitative data is sought through the surveys. In an Indigenous Research Methodology efforts are made to diminish the power imbalance between the researcher and research participants, and a co-creation of survey questions or follow-up questions is undertaken.[26]

Storytelling
Storytelling is a qualitative research method, in which participants describe their answers orally to questions. In this method, the relationship and co-creation between the researcher and participant or a group of participants is also considered and the impact of the researcher on the data is recognized.[27]

Talking Circles
Talking Circles are an Indigenous method of making decisions and conducting group process. [28] The Circle is seen as a " mutually-supportive group convened for a specific purpose. It is a gathering held literally in circular form […]. It is a mechanism of self-empowerment in which

[25] Dawson, A., Toombs, E., & Mushquash, C. (2017). Indigenous Research Methods: A Systematic Review. International Indigenous Policy Journal, 8(02). doi:10.18584/iipj.2017.8.2.5

[26] Dawson, A., Toombs, E., & Mushquash, C. (2017). Indigenous Research Methods: A Systematic Review. International Indigenous Policy Journal, 8(02). doi:10.18584/iipj.2017.8.2.5

[27] Dyll-Myklebust, L. (2014). Development narratives: The value of multiple voices and ontologies in Kalahari research. Critical Arts, 28(3), 521–538. doi: https://doi.org/10.1080/02560046.2014.929214

[28] Haozous, E. A., Eschiti, V., Lauderdale, J., Hill, C., & Amos, C. (2010). Talking circle for Comanche women's breast health. Journal of Transcultural Nursing, 21(4), 377–385. doi: https://doi.org/10.1177/1043659609360847

leadership rotates, responsibility is shared, and the group relies on Spirit to hold and focus energy."[29]

Autoethnography
Autoethnography can be thought of as a form of storytelling in which autobiography (stories about ourselves) and ethnography (stories about cultures) are combined. This collaborative approach can facilitate connection between two groups.[30]

Yarning
Yarning is "a conversational process that involves the sharing of stories and the development of knowledge. It prioritizes indigenous ways of communicating, in that it is culturally prescribed, cooperative, and respectful".[31]

Song & Proverb Capture
Song & proverb capture is a mixed method approach to capturing information from groups that rely heavily on storytelling and artistic expression as forms of learning, sharing and communicating. Key messages, morals or histories are extracted collaboratively by the researcher and research participants to create a holistic understanding of the data.[32]

Storyboarding
Storyboarding is the process of mapping out and visually representing a journey or experience of an individual or group. It can either tell the story of how the individual/group got to the state that they are currently at, or a forward looking story of where they are headed. Much as in Indigenous storytelling, there often isn't a clear beginning or end, but a chosen moment at which to enter the story and begin telling it to the listener.

Vision Boarding
Vision boarding is a collaborative or individual process of mapping out an ideal future state or vision. It can be done in a tactile/visual manner using collage or drawings, or can be formulated

[29] (Calling the Circle, by Christina Baldwin) Calling the Circle: the First and Future Culture, by Christina Baldwin, Swan*Raven & Co, 1994

[30] Lashua, B., & Fox, K. (2006). Rec needs a new rhythm cuz rap is where we're livin'. Leisure Sciences, 28(3), 267–283. doi: https://doi.org/10.1080/01490400600598129

[31] Walker, M., Fredericks, B., Mills, K., & Anderson, D. (2014). "Yarning" as a method for communitybased health research with Indigenous women: The Indigenous Women's Wellness Research Program. Health Care for Women International, 1–11. doi: https://doi.org/10.1080/07399332.2013.815754

[32] Chilisa, B., & Tsheko, G. N. (2014). Mixed methods in Indigenous research: Building relationships for sustainable intervention outcomes. Journal of Mixed Methods Research, 8(3), 222–233. doi: https://doi.org/10.1177/1558689814527878

using words or sentences that capture the vision or ideal state that is being strived for. It is a process that should inspire and energize a group or individual and should capture the vision in a concise or easily recognizable manner.

Focus Groups
Focus Groups are small groups carefully selected and curated to represent a diversity of perspectives, or a targeted perspective or demographic. Interviews or other qualitative research methodologies are used within these groups to gather input, opinions or beliefs with regards to a particular idea, project, product, etc.

Photovoice
Photovoice is one of several qualitative methods utilized in CBPR. It is a participatory method that involves community participants using photography, and stories about their photographs, to identify and represent issues of importance to them.[33]

Human-Centered Design
Human-centered design is a creative approach to problem solving that starts with the people being designing for and ends with new solutions that are tailor made to suit their needs. Human-centered design is founded upon building a deep empathy with the people being designing for; generating an abundance of ideas; building a variety of prototypes; sharing what has been made with the people being designing for; and eventually putting innovative new solutions out in the world.[34]

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In the case where conventional research methods are used, efforts will be made to decolonize/'Indigenize' these methods in order to ensure they are culturally sensitive.

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[34] IDEO.org http://www.designkit.org/human-centered-design

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Appendix 2 – Project Methodology Details

Regional Roundtables: In September and October 2018, the Technology Council hosted 8 roundtable gatherings across each of the province's seven economic regions[35]. These meetings engaged a total of 177 individuals and 50 Indigenous communities represented by leadership and/or staff. Preliminary qualitative data was collected through breakout activities. Audio recordings of roundtables conversations were kept, as well as 23 one-on-one recorded interviews.

LMP Survey: In an effort to gather some preliminary quantitative data on key issues related to digital engagement, a short survey was deployed tackling topics like views towards technology, technology use, perception of digital opportunities, and others. The survey received a total of 123 responses.

Advisory Council: An Advisory Council was formed for Phase 1 of this initiative which included representation from provincial First Nations leadership, the provincial government and industry. The following are the members of the Advisory council:

- Robert Phillips - *First Nations Summit*
- Kukpi7 Judy Wilson - *Union of BC Indian Chiefs*
- Jaime Sanchez - *BC Assembly of First Nations*
- Bill Tam – *Digital Technology Supercluster*
- Jeff Ward – *Animikii Indigenous Technology*
- Sandra Saric – *Information and Communication Technology Council (ICTC)*
- Yavhel Velazquez – *Ministry of Advanced Education & Skills Training*

The Advisory Council provided valuable guidance, feedback, input and advice into the structure of regional sessions. It also advised in the creation of the Indigenous research methodology, reviewed key findings, and identified relevant individuals and organizations for the project and advocating for the initiative amongst potential partners.

The LMP Advisory Council has provided a wealth of guidance and support to the Technology Council for this initiative, particularly in regard to the structure and design of its community engagement framework. 3 Advisory Council meetings were hosted during Phase 1. As we move into Phase 2, the Advisory Council as the scope of the work will expand to reflect new goals, initiatives and frameworks.

i. Roundtable Details

Overall, approximately 55 per cent of participants self-selected as having some form of post-secondary education. Additionally, while many of the participants were band and organization staff, participants represented a cross-section of demographics including staff from Indigenous organizations and community groups, elected and hereditary leaders, entrepreneurs, elders, employment and training staff, I.T. managers and youth interested in exploring a career in technology.

[35] Communities visited: Chilliwack, Fort St. John, Kamloops, North Vancouver, Parksville, Prince George, Prince Rupert, Victoria.

To ensure inclusion of Indigenous peoples from rural and remote communities as well as people with lower incomes, the Technology Council provided a travel subsidy that was administered through an application process. Interested applicants were asked to fill out a short online application form to identify why they wanted to attend the engagement session, along with their role in the community.

ii. Survey Details

In *Phase 1* of this LMP, the Technology Council developed and strengthened the foundational components of its research methodology and community engagement framework, obtained the support of provincial Indigenous leadership, and began engagement with Indigenous communities at the regional level across the province. This was done to identify community technology champions for *Phase 2* and to co-create the foundational elements of the *Indigenous Digital Strategy*.

Through these efforts, the Technology Council is strengthening the development of its employer and community surveys for *Phase 2* based on community feedback, and recruited Indigenous peoples into the training programs offered by the Technology Council. In the process, the Technology Council has deepened its understanding of the ongoing efforts, challenges and opportunities for increasing Indigenous participation and leadership within the technology sector.

The questions designed in our Phase 1 survey included the following categories:

- Basic demographics
- Connectivity
- Digital use
- Digital skills
- Common barriers
- Impacts of technology

A preliminary survey was released to gather discovery data to inform future research themes. It was intentionally designed as a draft to illicit regional session participant feedback that will be used in the development of both employer and community surveys in Phase 2. The community survey in Phase 2 will collect a sample from all economic zones and will attempt to get as representative as possible a sample of all 203 Indigenous communities in B.C.

iii. Breakout Activity Details

The scope of our breakout activity was much broader and was designed to form the foundational elements of the Indigenous Digital Strategy. The breakout activity was broken up into two parts; Part One provided participants the opportunity to respond to a series of question prompts, Part Two was to identify regional technology-based priorities based on responses to the question prompts. The purpose of the breakout activity was to identify regional technology-related challenges, successes and priorities of Indigenous peoples in each of the following areas:

- Economic Development/ Entrepreneurship/ Jobs

- Education and Training
- Governance (Band Administration and Territory Stewardship)
- Infrastructure
- Language and Culture
- Health Services Delivery

Each of the above areas were further defined into the following categories; challenges, successes and priorities at both the individual level and the nation level, with the exception of the Infrastructure area which just had nation-level questions. Participants wrote their responses down on paper and posted the paper in the appropriate category for each area. It was not mandatory for participants to respond to all questions. This part one breakout activity period lasted between 30 – 90 minutes depending on group size and composition. Participants were encouraged to rotate areas every 10 minutes, although moving was not mandatory.

The question prompts were as followed:

Economic Development/ Entrepreneurship/ Jobs

	Challenges	Successes	Priorities
Nation level	What are the technology challenges your nation is facing that holds back economic development and entrepreneurship?	How has technology been used to grow economic development and entrepreneurship in your nation?	What technology is needed in your nation right now to grow jobs and business opportunities for members?
Individual level	What are the technology challenges that you are facing that hold you back from job opportunities?	How has technology helped you or someone you know succeed in a job or business?	What do you need to prepare for the job opportunities in the tech sector?

Education & Training

	Challenges	Successes	Priorities
Nation level	What are the technology challenges your nation is facing that holds back education program development?	How has technology been used to support education programming in your nation successfully?	What technology is needed in your nation right now to improve education programming and training opportunities for members?

Individual level	What are the technology challenges that you are facing that hold you back from educational opportunities?	How has technology helped you or someone you know succeed in school?	What would be helpful to you to prepare for the education and training opportunities in the tech sector?

Language and Culture

	Challenges	Successes	Priorities
Nation level	What are the technology challenges your nation is facing that hinders language and culture preservation and development?	How has technology been used to advance language and culture programming in your nation?	What technology would assist your nation right now to advance language and culture programming?
Individual level	What are the technology challenges that you are facing that hold you back from learning your language or culture?	How has technology helped you or someone you know connect or succeed in language or culture?	What technology would assist you to learn your language or connect to your culture, if any?

Health Services Delivery

	Challenges	Successes	Priorities
Nation level	What are the technology challenges your nation is facing that hinders health service delivery?	How has technology been used to improve health service delivery in your nation?	What technology is needed in your nation right now to improve health service delivery for members?
Individual level	What are the technology challenges that you are facing that hold you back from accessing health care?	How has technology helped you or someone you know access health care?	What technology would assist you right now to improve your access to health care?

Governance (Band Administration and Territory Stewardship)

	Challenges	Successes	Priorities
Nation level	What are the technology challenges your nation is	How has technology been used to improve band	What technology is needed in your nation right now to

	facing that hinders band administration or territory stewardship?	administration or territory stewardship in your nation?	improve band administration or territory stewardship?
Individual level	What are the technology challenges that hinders you from accessing information from your band?	How has technology assisted you with accessing information from your band?	What technology would assist you in accessing information from your band?

Following the first part of the breakout activity period, participants were then given a set of stickers. They were asked to identify one response/ idea per each challenge, success and priority at each area that resonated with them the most and place one sticker on that piece of paper. The stickers represented finite resources and through this process, regional technology-based priorities in each of the above areas were identified.

Appendix 3 – Survey Questions

Sovereign Digital Future Gatherings Survey

Confidentiality and Participation Consent form

Your participation is voluntary and **your responses will be kept confidential**, unless otherwise agreed to, excluding reporting to our project funders.

Thank you for agreeing to take part in the First Nations Technology Council's survey. This survey follows the principles of **OCAP**: Ownership, Control, Access and Possession, sanctioned by the First Nations Information Governance Committee, Assembly of First Nations.

The purpose of this survey is to gain a baseline understanding of digital skill level and access to digital technology for Indigenous people in B.C. This information will inform a) actionable recommendations that will lead to increased Indigenous inclusion and participation in the B.C. technology and innovation sector, and b) will inform the development of the B.C. Indigenous Digital Strategy, shaping our sovereign digital future.

At the end of this survey, we will ask you what you thought of the questions that we have asked in this survey. This feedback on the survey is to inform our research methodology for future research in Indigenous communities across B.C.

You have the right to ask questions about this research and have those questions answered before, during or after this research. You may refuse to take part in this study at any time and you have the right to not answer any single question. You also have the right to access your answers at any point in the future, and to receive a copy of our project final report upon its completion.

Please note that in our questions, we have used similar terms that were identified during pre-event phone calls to our communities.

Your signature below indicates that you have agreed to volunteer as a participant in this study and that you have read and understood the information provided above

Signature:

Date:

Basic info/Demographics

What is your name?

First: Last:

How do you identify?: (Please check one)

□ Man	60.98%
□ Woman	37.40%
□ Two-Spirit	0.81%
□ Non-Binary	0.81%
□ Other	0.00%

Are you: (Please check one)

□ Status First Nations	87.80%
□ Non-Status First Nations	7.32%
□ Métis	4.07%
□ Inuit	0.00%
□ Non-Status/ Métis	0.81%

If you are First Nations, please identify:

Band: Nation (if different from Band):

Do you live on-reserve?

□ Yes	46.34%
□ No	50.41%
□ Non-Response	3.25%

Address: City/Town/Village: Postal Code:

What is your age? (Please check one)

□ 15-19	5.69%
□ 20-29	19.51%
□ 30-44	31.71%
□ 45-54	22.76%
□ 55-66	14.63%
□ 67 and over	5.69%

Connectivity

Do you have internet access at home? (Please check one)

□ Yes	94.31%
□ No	5.69%
□ Non-Response	

If yes, how would you describe your home internet? (Please check one)

□ Poor	5.69%
□ Average	35.77%
□ Good	29.27%
□ Excellent	22.76%
□ Non-Response	6.50%

Do you have internet access at work? (Please check one)

□Yes	82.11%
□ No	10.57%
□ Non-Response	7.32%

If yes, how would you describe your work internet? (Please check one)

□ Poor	7.92%
□ Average	37.62%
□ Good	27.72%
□ Excellent	26.73%

Do you have a smartphone? (Please check one)

□ Yes	91.06%
□ No	8.94%

If yes, do you have a data plan? (Please check one)

□ Yes	83.93%
□ No	9.82%
□ Sometimes	5.36%
□ Non-Response	0.89%

Is there cell service where you currently live? (Please check one)

□ Yes	93.50%
□ No	5.69%
□ Non-Response	0.81%

If yes, how would you describe your cell service? (Please check one)

□ Poor	12.17%
□ Average	32.17%
□ Good	38.26%
□ Excellent	17.39%

Digital Use

Please check all that apply:

Do you own…

□ A computer	43.09%
□ Laptop	17.89%
□ Tablet	54.47%
□ None	12.20%

If none, do you have regular access to a computer, laptop or tablet?

□ Yes	46.67%
□ No	46.67%
□ Not applicable	6.67%

What are your top two preferred communication tools? (*We acknowledge you may use more than two; we wish to learn of your preferred communication tools*. Please check two only)

□ Email	67.48%
□ Social media	56.91%
□ Texting	67.48%
□ Skype	4.07%
□ I pick up the phone	22.76%
□ I don't talk to anyone using these tools	0.00%

Who do you communicate with most on social media? (Please check one per line)

	Never	Rarely	Fairly often	Nearly always	Non-Response
Family	2.44%	13.01%	35.77%	47.97%	0.81%
Close friends	2.44%	13.82%	32.52%	47.15%	4.07%
Friends	2.44%	19.51%	39.84%	34.15%	4.07%
Co-workers	17.07%	35.77%	21.95%	17.07%	8.13%
Strangers	42.28%	39.02%	3.25%	4.07%	11.38%

Are you able to stream videos at home? (Please check one only)

□ Yes	76.42%
□ No	6.50%
□ Sometimes	16.26%
□ Non-Response	0.81%

How often do you play video games? (Please check one only)

□ Very often	15.45%
□ Often	10.57%

☐ Sometimes	29.27%
☐ Never	44.72%

Do you spend your spare time on the following activities? (Please check all that apply)

☐ Coding	10.57%
☐ Building or repairing computers	13.82%
☐ Other tech-based activities	42.28%
☐ Non-Response	30.89%

Digital Skills

Are you currently employed? (Please check one only)

☐ Yes	73.17%
☐ No	26.02%
☐ Non-Response	0.81%

If yes, are you currently employed in a tech-based job? (For example, jobs that involve technology equipment manufacturing and servicing; computer and software service and design; wireless and cable communication service, etc).
(Please check one only)

☐ Yes	44.44%
☐ No	54.44%
☐ Non-Response	1.11%

Have you completed any digital skills training? (Please check one only)

☐ Yes	40.65%
☐ No	52.85%
☐ Non-Response	6.50%

If yes, please indicate the skills you acquired:

- SQL server, Agile, Cael, C#
- Microsoft Word
- A+ Basic computer repair, Network and internet support
- Programming, Server administration, networking, software testing.

- Computer Mapping
- Microsoft Office 2016, JP Edwards, Intralink
- Software development and computer
- graphic design, action.., web design
- Audio Engineering Degree, Digital Art and Design Diploma, Currently Design Degree.
- A+ preparation, CompTIA, IST test PASS, CB co Certified network associate, Advances GIS.
- GIS
- Finance software, Microsoft office.
- some training, microsoft programs, ipad use.
- Built my own computer, courses in A+, Networking
- Computing science diploma
- Using equipment
- film Production degree, Telecommunication (fibre installation)
- Office, windows
- Basic computer knowledge, microsoft office, intro to computer programming
- Mapping
- how to mount class/on line
- Office Skills, lol.
- Worked as a tech support for e-commerce company.
- School Technology
- Basic training to create proper slideshows, layouts, outlines, with microsoft office.
- Office suit, Networking level 1 and 2.
- MS Office
- Basic computer skills
- HTML, Css, Php, MYSQL, Adobe (photoshop dreamweaver)
- BA business / Marketing
- Software programs only (Excel, Word, Access)
- Office
- Basic Computer skills
- Windows 7
- PC repair, coding training with microsoft word and other applications
- Social Media strategies and web design
- computer skills
- Digital Marketing training certificate
- BCIT - into to GIS HO2 - Haida owned and operated
- computer science strata
- Social media marketing and Communications
- Use adobe suite: word processing: currently taking an online course: Digital Story telling
- At microsoft office specialist, CSS, etc
- Refurbish old computers, install, hardware and software
- Mandatory computer science courses @ UNBC for my program.
- Arms (Automated Resource Management System
- Computer Fundamentals. Medi aIT Coord - Network Assistant. Hands on learning
- CIS through CNC
- CIS Diploma - College of New Caledonia
- Networking, hardware, software, web design
- data base entry
- communications
- Laserriche Software and research and info training (in-progress)

If yes, please indicated any certificates you acquired:

- SQL, Agile
- Admin Assistant
- A+ Certificate, Diploma in network and internet support
- GIS Technician
- BCIT Diploma, computer systems Tech
- Design in motion graphics certificate
- Audio Engineering Degree, Digital Art and Design Diploma, Currently Design Degree.
- information technology certificate, advanced GIS.
- GIS, Administrativ assistant
- Sage 50 premium, acepac sage, excel, power point, email.
- BCS bachelor computing science
- Zero.
- RRU distributed facilitation and learning for Indigenous communities
- Accounting office certificate
- Word and Excel
- IBDE/Selkirk College, Essentials web design and technology
- Undergraduate degree
- Don't recall the name but it was a Microsoft operations 5 day course
- CompaTia A+
- Executive certificates in entrepreneurship and social media strategies and web design
- Business Tech
- Online, Website updating
- Haida owned and operated Peter B Gustavsen certificate in business
- Free Course – no certification
- Business administration certificate Degree in General Business and marketing
- Strata Computer Fundamentals
- Business admin certificate, Ic3 certification
- diploma in business administration/ computer information systems
- Business Management
- Bachelor of design
- In-progress

Do people ask you for help with technical issues? (Please check one only)

☐ Yes	55.28%
☐ No	11.38%
☐ Sometimes	32.52%
☐ Non-Response	0.81%

What is your highest grade level completed? (Please check one only)

☐ Grade 8-9	4.07%
☐ Grade 10-11	8.13%
☐ Grade 12	15.45%
☐ GED	1.63%
☐ Some post-secondary	14.63%

☐ Post-secondary certificate or degree	55.28%
☐ Non-Response	0.81%

On a scale of 1-5 where 1 is no interest and 5 is very interested, please indicate your interest in the following career areas: (Please check one per line only)

	Non-Response	1	2	3	4	5
Web Development	2%	15%	15%	17%	22%	29%
Communications and Digital Marketing	4%	9%	12%	20%	20%	35%
Network Technician	6%	23%	18%	15%	15%	23%
Software Tester	5%	31%	17%	18%	15%	14%
Administrative Professional	6%	19%	13%	16%	19%	27%
Microsoft Certified Professional	6%	20%	19%	19%	10%	26%
GIS/GPS Mapping	4%	22%	15%	16%	19%	24%
Digital Media (graphic design, video production, virtual reality)	4%	11%	6%	19%	16%	44%
Entrepreneurship	2%	15%	8%	17%	15%	43%
Help Desk Technician	7%	34%	17%	15%	12%	15%
Technology Leadership	4%	17%	13%	20%	17%	29%

Are you interested in digital skills training? (Please check one only)

☐ Yes	68.29%
☐ No	4.07%
☐ I'm not sure	27.64%

If you are interested in digital skills training, which areas are you interested?

- For my son and myself

- Server Admin, Network admin, VR
- Entrepreneurship, currently incubating a social enterprise business concept that centres on a network platform with website/ mobile app and marketing focus. would lover to find an appropriate business mentor.
- Web development, communications and digital marketing, digital media.
- Network Technician (for upgrading) and web development.
- Virtual reality development
- All of the above
- Mapping
- Graphic Design, Marketing
- Web Development, communications and digital marketing, admin, professional, Microsoft certified, digital media and entrepreneurship.
- Modern software development (mobile app), enterprise architecture (TOGAF).
- Ruby on rails, digital media
- Digital Media
- Network Administration.
- See above, something to do with music/ photography
- Web Development, Communication and Digital Marketing and network technician
- Network technician
- Internet administration, GIS/GPS Mapping, web development
- Networking, VOIP, Microsoft office, Fixing/ trouble shooting computers.
- work
- Web Development, communications and digital organization.
- certificates
- Certificates
- Not sure yet. Communication and digital marketing maybe software testing
- GIS/GPS
- Web development, Digital media, GIS Mapping.
- Pictures
- Mapping
- Digital marketing and administrative professional
- Digital Media
- I enjoy being helpful, generally I look towards support positions.
- unsure
- Digital media, Marketing and entrepreneurship
- Learning to teach youth digital skills
- Communicaitons, social media, would like to be assessed to see how my work department could improve digitally. I am near retirement, so will have more free time to connect electronically.
- Admin professional network technician maybe help desk technician
- Technology Leadership
- Coding/ Network/ Microsoft? Marketing ... basically all areas
- Further web dev, ie. Python, Rubyon rails
- Beginner Modules to present to community
- Video/ Language / First nations writing.
- All, Im an education coordinator and I am trying got build interest in this field in my community. I love databases myself.
- All
- "Communications and digital marketing
    - Network setup and support
    - GIS
- -Coding
- Cultural Translation

- Always good to learn more about software, microsoft office excel specifically.
- Administrative Professional, Tech leadership
- Always good to learn more about software, Microsoft office excel specifically.
- Network technician
- web Development
- Communication and Digital Marketing
- All!!!
- Digital Marketing, web development, user experience/ user interface dev. tech leadership
- Digital media, computer technician, software testing, and web dev.
- Not sure
- Anything that could help with strengthening the Haida language.
- programming in: python, html, C+, C++.
- All areas, the 6 topics I would like to get more involved in.
- basic capacity skills, building data and reports, websites.
- Web development coding, GIS/ GPS, communications
- unsure at this time
- web development, network technician
- Marketing and communications software development
- Depends on what it is
- any and all
- web, graphic
- ?
- I would like to know more about it all.
- MS Certificate Professional
- Interactive culture identity workshop
- Network and Infrastructure
- Web development and digital marketing
- Communications and Digital Marketing. Digital Media
- web development, digital media
- Communications and digital marketing
- communicaitons
- Digital Marketing, Social Media, Podcasting
- would need more info

How would you describe your computer skills? (Please check one only)

☐ Poor	8.94%
☐ Average	33.33%
☐ Good	39.02%
☐ Excellent	18.70%

Are you familiar with open source development? (Please check one only)

☐ Yes	35.77%
☐ No	57.72%
☐ Non-Response	6.50%

How confident do you feel that you could succeed in a career in digital technology? (Please check one only)

□ Very confident	35.77%
□ Somewhat confident	47.15%
□ Not confident	13.01%
□ Non-Response	4.07%

If not confident or somewhat confident, what would help you become more confident?

- NA
- More training
- Training
- Skill set training and development, or business partner w the skills I dont have.
- Specific training
- Education Awareness
- Certificates would like degree. Focused in all areas not one specialty.
- Intense training
- Im not sure
- Having basic knowledge of technology
- More information on the program
- Training> Information
- far behind
- More training
- how to ..
- More training/ need one on one I'm a hands on learner
- training
- more knowledge of the careers, skills required/ used daily, opportunities, trends.
- More training refresher courses
- more training
- Training
- More experience with computer techs working on that now
- Training, I am not sure if I want to follow the full training to go into a career.
- More knowledge, talent development
- Having someone teach me as simple as possible
- Mentorship and one to one support new skills not looking for new career.
- Local or remote training
- More interest, I am fairly tech savy enough so would only be interested for peers and youth in my community
- Application Training
- Learning more.
- "More Training - Education
- Learning more
- Training
- Professional training
- training to get the necessary skills, and experience
- Simple guidance
- I've never explored this corner

- Training and experience
- Training brought to Haida Gwaii!
- knowledge
- learning how to navigate better on a computer
- always training to keep current
- training
- More training and mentorship
- more training and hands on experience
- more access to help
- If I was trained and certified, then it would be a heck ya :)
- If I learn about it then I would be confident
- Practice and Training
- College certification or more self teaching
- More Training
- updated skills
- exposure or experience

Which of the following words best describes technology to you? (Please check one only)

□Life-changing	26.02%
□ Useful	47.97%
□ Interesting	21.14%
□ Knows no bounds / inhibitions/ limits	26.02%
□ Non-Response	4.07%
□ Other: _____	0.81%

Common Barriers

Are you willing to relocate for training or a career opportunity in digital technology? (Please check one only)

□ Yes	36.59%
□ No	20.33%
□ Maybe	39.02%
□ Non-Response	4.07%

If no or maybe, what would prevent you from relocating for a training or career opportunity?

- Family, Cost.
- My current job, my wifes current job.
- Family, job, money
- NA
- Relocating means uprooting my kids from everything they know and love.
- Timing of life and career
- high rental costs, travel.
- Staying close to family and home

- Have Four kids, single mom, funds to move.
- family, wife and children
- Interior, prefer Okanagan. Vancouver or Victoria has too high cost of living.
- Cost rental off reserve
- Family/ Funds
- Family health issues
- Family, resources
- Caring for grandkids
- My present Job Position
- I love my work at TRU and BCIT as a councillor and access to sweatlodge
- I do have full time job
- Already have a tech job, It Manager
- Already have a tech job, IT Manager
- My daughter
- My current job would prevent me from relocating for training. However, I would be open to relocating for a career opportunity.
- Family, home
- Single father with 2 children
- Family
- It would only be ok with me if the relocation is still anywhere close to Victoria
- local (on island) temporary
- my kids
- Non response
- Have a small child moving becomes complicated
- Family
- Near retirement age. want to learn new skills to support others.
- responsibilities, location of relocating
- Already in my career interest
- My toddler, and leaving family support network
- Large family, husband not working, sole income earner.
- Family, Home, Work , etc.
- Family obligations
- Moving to Vancouver or any other big city does not appeal to me in the least.
- My children and boyfriend
- Children
- My Family.
- Family, job, childcare
- My family
- Wont leave my family or home
- Place to stay
- Current employment
- Family, costs
- (short term/ In waves)
- Not being 100% on choosing this as my career path
- depends on how serious I get after some digging in the subject
- Maybe
- Cost of living - Leaving family or friends
- Income
- Not wanting to eave My home community. Classes / training could be done through video conferencing
- I would leave to train but home is home <3
- Friends and family: current employment
- Stay with family, access to cultural practices and ceremonies, traditional role in community

- this is my home. would rather be here to boost my community
- Too old to relocate and reestablish. I have my family roots in PG.
- Family - home source
- Current Job
- Kitten (12 weeks old)
- I just dont want tot take the chance of not finding a job.
- travel anxiety
- Family and Supports current Employment
- Family

Do you have a valid class 5 driver's license? (Please check one only)

☐ Yes	61.79%
☐ No	36.59%
☐ Non-Response	1.63%

Do you have access to an insured vehicle? (Please check one only)

☐ Yes	82.11%
☐ No	14.63%
☐ Non-Response	3.25%

Do you require childcare?

☐ I have reliable childcare.	0.00%
☐ I have unreliable childcare	2.44%
☐ There is childcare available in my community, but I cannot afford it.	1.63%
☐ There is childcare available in my community, but all the spots are filled.	3.25%
☐ There is no childcare available in my community.	3.25%
☐ No, I do not require childcare.	76.42%

Impacts of Technology

What negative impacts of technology have you observed in your community, if any?

- None so far
- Older generations get left behind as technology advances. my bands community only just received cell phone service last week.
- Training
- Lack of high speed internet, no cell service.

- Social isolation, poor sleep habits, increased bullying, distraction, addiction.
- No community - No structure. No internet access, no computers.
- Reliable internet
- Lack of access, abuse of porn, lack of funds, lack of knowledge, abuse of bullying.
- The poor cannot afford internet and often dont have a computer, or smart phone.
- lack of resources, services, awareness, connectivity.
- Information "overload", knowing what information is real and when to step away/take a break.
- Bullying in social media
- training for individuals. Lateral violence in comment sections.
- Other community, not upgrading due to expense in past.
- Rotten facebook drama
- Reduction of face to face communication and interaction amongst youth. cyber bully on social networks has negative impact
- Bullying, slander
- Slow internet
- Poor connections, Lack of knowledge
- children and family use of social media and online applications so much that they dont spend time with family.
- communication, up to date equipment usage, access.
- training
- server crashed, phones not working. everyone on their phones, ipads, etc. all the time especially youth.
- Lateral violence
- Gaming
- Lack of
- Procrastination, too much distraction
- Poor understanding of internet safety for youth using snap chat, musically.
- Poor understanding of internet safety for youth using snap chat, musically
- It can be restrictive if people don't have computer skills. For example, many companies require online applications for employment. If people dont have the basic computer skills or confidence, they may be excluded from a potential employment opportunity they would otherwise be eligible for.
- Lateral violence online, social media addiction.
- Cellphones in the classroom/ I work in a highschool.
- Can be . a big distraction from studies
- Not every family/ member has access or equal access. many need tech training or computer studies.
- Physical Contact, speaking one on on
- Games and Kids access
- not enough resources and guidance
- addiction, safety issues, 24/7 gaming.
- Mind numbing media, non interactive information
- There is not as much face to face communication
- Disconnection with my youth. video games.
- Addiction to games. passive, lack of exercise and natural energy.
- None at the time
- "_Lack of training for tools - obsessive gaming or social shaming/ blaming"
- "_social media negativity -less face to face meetings"
- "_ Lateral violence
- _ Too much time on technology and less communication with family"
- Unaware of benefits, unwilling to learn
- Addiction
- When grandkids come over, too busy playing games, hardly any interaction.
- Disconnected from social life.
- "Lack of connection to one another_ when people become isolated in real life.

- Fighting online, bullying
- Lateral violence and gossip
- Addiction to social media
- Some community members not being able to operate a computer and a lot of training requires technology use.
- "*- Slow internet – complications with wifi
- Not enough people are willing to learn about computers some do not participate long enough. Limited training time when time is needed.
- "Some community members not being able to operate a computer, and a lot of training requires technology use.
- FaceBook- All their dirty laundry.
- Social media seems to drive people into depression. the seeks to be a level of dissatisfaction with the ever changing nature of tech. Seems to drive people away from tech.
- Less face to face communication
- Missing Indigenous women, dark web
- Lack of knowledge in technology
- cyber bullying, potential predators, access to potentially harmful info, (can be solved proactively with awareness)
- Many children and youth in general grow up with too much of a dependance on technology
- Over using social medias
- Laziness, face to face relationships shrinking, connections are mostly shallow.
- Some people dont know how to use a computer and it hinders them from applying for jobs online
- Non communication
- Empty-headedness, lessening social skills
- Children growing up wih technology become addicted. need structured supervision and introduce learning tools
- No participation in community events
- Not where we can be and its being used wrong instead of being used for space and science, the money is used for war.
- Funding improvemnets needed but no funds to improve tech
- very poor internet
- Fake news, and inter-fighting between friends, family, and communities. It divides us.
- On to how remote Haida gwaii is, we have limited cellular access and limited wifi some still have dial up and prices are ridiculous
- younger generation live on FB. Family gatherings dwindle
- people who stare their cell phones
- youth tethered to mobile devices : social media spreading conflict and negativity, larger disconnect between youth and traditional practices
- Too much time spent of FB - people need more real people contact
- More youth are face to face with a cell or tablet not the people
- Lots of gossip and conflict
- Social media stress? Health risks obsession
- youth being addicted to gaming
- not sure
- Not sure
- No one talks anymore - everyone in group on facebook.
- Lack of access to internet or high speed internet
- Misinformation being delivered
- Children not being active enough
- Kids are glued to screens
- people rarely see each other in person
- A distraction

- body language with voice is understood. texting/ messaging, not thoroughly get meaning
- Limited or no skills
- Less activity> health, less socializing/ networking - weekend connections between people / family members
- personal, Face to face interaction, has declined
- streaming services bog connectivity down

What positive impacts of technology have you observed in your community, if any?

- Language Apps, First Nations language and tech. Gateway to info.
- Youth are learning more about the outside world
- great communication info.
- family connectivity through social networking.
- Helps our people for successful jobs
- research, skype meetings bring people together distance education, educational games
- Elders using smart phones wanting to learn on computers.
- Education opportunities. Safety.
- Keeps you connected. Business support. safety. social.
- If you can afford it, technology leads to knowledge, increased communication and connectiveness, and greater ability to job search.
- online learning has increased employment and training opportunities.
- access to information, research, knowledge. More methods of communication (eg. web, chat, video, etc.)
- Voices not being suppressed
- "increase in communication and audience interaction.
- Upgrade to fibre. (Air Fibre)
- Communication tool for band level activities, meetings, workshops, gatherings, etc.
- "communication increased, internally and externally.
- collaboration of projects, internal.
- better decision making . "
- Helps get important news out
- More members are using the internet
- More connection
- data management, correspondence.
- None
- No
- more research on internet/ family, school, free courses on internet.
- Communicaitons improved
- talking circles, support for clients who live in other parts of the world
- enhanced communication: long distance call via skype, conference calls. education: access to computers, tablets.
- ability to keep in touch, online programs for k12 so they dont have to travel 203 hours everyday
- ability to keep in touch, online programs for k12 so they dont have to travel 2-3 hours everyday.
- Communication
- Easier and quicker access to information, easier and free to learn (eg. moocs) easier to stay connected to family and community, ability to reconnect/ connect to culture (eg. learn language).
- accessibility
- information sooner, Indian country got smaller.
- google classroom

- can push and support language in new ways. youth can immediately grasp concepts and practical aspects of newly developed technology.
- Job search, Quick connection with community
- I feel we re at the beginning stages. wifi in band hall computers have recently been given to youth centre
- Communications improved.
- stronger communication, better access to information, creates opportunity to learn from home (sometimes or your own time)
- We are connected to those our of the community

- Watching our youth get excited about learning
- faster communication connections
- community engagement/ communication
- _access to outside world and technologies
- "_Easier to get information to community
    - health care system
    - education "
- "Connecting online with family adn friends away from home.
    - marketing / promotion better."
- Homeschoolers, teens dont have to leave home for school.
- Communication
- Some youth understand tech difficulties and access videos.
- "Collaboration, and new economy.
- Connection to one another. I know right!! :) where there would otherwise be zero connection better means to communicate with members who do not live in our community.
- Speaking to family members that live far away.
- Access to internet
- Information management system
- Helps get work done faster than it would have 10-20 years ago
- communication via social media
- Community is faster. Notices and newsletters are very helpful
- Helps get work done faster than it would have, say 10-20 years ago.
- "- Any type of information available
    - easier for doing assignment; finding ect. about nations/cultural beliefs. "
- Ongoing connection, no matter how far you move.
- Quality of life connection with the world, better outcome for individuals in regards to jobs, education and access to further opportunities.
- getting information faster
- your training! :)
- Connectivity, access to knowledge and languages etc., learning new skills, making networking more accessible.
- By the sounds of it many new jobs/ careers are becoming available through technology.
- Being able to connect with people all over the world
- Organization, opportunities reach out further, education more accessible
- quick communication, more productive, efficient
- Education Awareness
- interconnected
- preservation of language, Mapping, assisting with rights and title, education.
- reaching large groups fast
- It is life changing. Side note I'd like to go to BCIT
- bringing new and improved ways to complete tasks, more efficient
- good training classes
- NA

- Allows access to research and connects people
- Improvement of communication between small communities
- Learning instantly for anything you need to know. google example Facetime with family across the miles
- connected, communicaitons
- greater communication between members and between band and members, greater emergency response through spreading of important news, greater access to training and educational opportunities, greater access to health through video-conference.
- My community mainly my family are highly immersed in technology.
- N/A
- Ability to have access to knowledge on the web
- Technology makes things easier and more efficient
- its the way of the new world
- ability to research and communicate
- Access to resources on line and training access to live stream zoom cerf calls.
- access to online learning tools
- Lack of skills
- the overall ability to obtain access citizens when or if required.
- Positive information being delivered
- Access to network outside of community
- Everything is faster with the assistance of a computer
- the city is modernized
- information access
- texting and messaging everyone available or will get your message? when available faster than phoning or email.
- resume development
- Connections to the world - broader perspectives developed. Sharing of information/ ideas / skills. culture and language preservation/ teaching. preservation of histories/ genealogies.
- Language learning
- were connected (be it poorly)

I am interested in learning how technology can improve my quality of life including but not limited to: (Please check all that apply)

□ Language and culture	74.80%
□ Education	76.42%
□ Health Care	46.34%
□ Business and Economic Development	66.67%
□ Community development	69.92%
□ Governance	50.41%
□ Other _____	0.00%

Where did you learn about this survey? (Please check all that apply)

☐ Sovereign Digital Future Prince George	20.33%
☐ Sovereign Digital Future Prince Rupert	18.70%
☐ Sovereign Digital Future Victoria	8.13%
☐ Sovereign Digital Future Parksville	13.82%
☐ Sovereign Digital Future Fort St. John	9.76%
☐ Sovereign Digital Future Cranbrook	0.00%
☐ Sovereign Digital Future Kamloops	17.07%
☐ Sovereign Digital Future North Vancouver	4.88%
☐ Sovereign Digital Future Chilliwack	7.32%
☐ Social Media	4.88%
☐ Community source_____	4.07%
☐ Other _____	1.63%

If Other, please specify:

- supervisor
- My friend
- Family

Our Team would like to hear from you. Please use the space below to share your opinion on the type of questions we have asked in this survey, or if there are other questions you think would be valuable to ask. We want to ensure that you and your communities have the opportunity to inform your digital strategy.

- FNTC is a good way for helping our people walk with technology and information using the web and programs its very useful.
- Is FNTC doing community internet services?
- All good, thx u4 holding this event, need more of these.
- I would like to see some access lab centres in the remote areas of BC.
- "Maybe ask if people answer no to home computer and internet if they access: libraries, employment centres, other places that have computers for use.
- As an employment councillor , computer skills are one of the canada wide an essential skills. It is still a gap/skill that needs filling, especially with lower economic status, but even with people who have access to internet and technology. "
- Great Questions
- Very excited for the future of FNTC and would liek to be part of it.
- Does your community(Band) have current up to date internet access? Is your community remote?
- Questions are on point
- Good questions. FN need a good assessment of their history, needs current systems, future plans for development.
- Working on team building
- No question/comments at this time. I thank for to Kamloops. I just like to learn as much as I can.
- I think the questions were straight forward and relevant. Easy to understand. well organized. laid out well.
- Drones, underwater tech.
- Awesome workshop for professionals. It would be great to have a separate program for youth.

- I think all the questions are good.
- Well I have been thinking about starting my own food truck business. I would call it Lorelei's Bread Box
- I havent come across anything that I would add. thank you for letting me fill this out. :)
- How do you get started in bringing technology to the community and staying up to date with..
- I look forward to seeing and being apart of the coming growth in the technical fields closer to my community.
- Reluctant learners in our community. how can we encourage them? I believed that I wouldnt want to know all of the areas you will be presenting. I was focused on language. our community could benefit from these workshop ideas.
- Some of question repeat themselves
- I wold like a copy of the questions asked in order to share with band administration an to further reflect upon.
- Questions were the point. short and sweet.
- "I am interested to see my community become more advanced in technological advantages.
    - to use tech positively rather than negativity. "
- Networking is an important tool for all First Nations. Sharing experiences and hearing the success or not is always helpful. FN tech is central to all communities futures in becoming more involved in tech.
- Everything seemed just fine
- I am open to learning what you have to offer.
- All Covered. Didnt leave anything out. :)
- Might be good to ask what type of community one live in, Ie. remote, small town, city. Unless you are going to put this all in data base and Cross reference answers and map it :) Also why am I interested in technology.
- Loved everything that was presented.
- Good Opportunity to create technology driven
- type of question were fine. However I had to ask other participants what some words meant ie) stream videos.
- I am not part of any loca band. I ran an ISP in Dawson Creek that has been serving rural communities for 25 years. I am not sure why partnerships have not been developed between us and other communities. Especially given that we are a non-profit. There are also different models for delivering services, that maybe better than subscription models.
- Maybe include a section about generational understanding
- Great Presentation.
- The questions were very valuable, it definitely paints a picture of whats needed and how the tech council can fulfill those needs.
- This course opened my eyes to many new potential career paths. Although I'm not sure on what career I'll pursue this opened my eyes on many new jobs in the "technology" field.
- I appreciate how some of the questions asked how the internet situation is on a reservation, not just presuming we have the same connection.
- Need space for contact info, phone number, email.
- How can FNTC work with old Massett village to offer training opportunities in Haida Gwaii ?
- This survey is directed toward individuals. I am participating on behalf of my organization. My answers would be different from an organization point of view.
- Great time in this workshop!
- How do I go about finding help to further my tech skills so I can possibly take back to my community and share to better improve our water quality?
- "It would be nice to see more questions to get feedback on current situations people and communities are in at the moment. which band are you with? what is working? what isnt? today.
- Great seminar_ Thank you <3"
- "regarding youth: it was mentioned that our youth can tend to be shy or unaware of events going on. With technology, our youth have used it to not have as much face to face contact, what about broadcasting your gatherings, or seminars to gain more youth. Only bad thing about tech is it has taken

away some need of interacting in person and much more comfortable hiding behind their screens.

- How to access affordable wifi in remote an or knowledge of what to purchase to obtain the bosters? equipment in outlying areas.
- it would be useful to differentiate between personal and professional digital usage. Note, gender note. would be useful to identify partnership or networking opportunities within communities, regional, or provincial organizations. See how the pillars relate to each-other, what are the priorities.
- I missed day 1 - but I noted was that there seems to be a lack of training in tech at the community level.
- Keep up the good work!
- All the questions were good. I am grateful to be part of this event. Thank you so much for this opportunity. I'm a bit stuck on what I'd like to do for a career and this is a very good inspiration. I wold love to be a part of this for my career. <3 :)
- This is a positive direction to take technology training to first nations communities and people. We need more indigenous trade technicians. It seems theres is a gap in the work place no usable indigenous workers in the local computer industry. Although I have encourage clients to send resumes and one is getting hired, i'm aware of.
- Nations or bands should also include how governance structure would best represent you and reflect who you are.
- To provide genealogy databases. First Nations to have the infrastructure to ensure proper data being captured for genealogy and traditional land use; natural resource stewardship.
- Very well thought out questions, I think they covered all areas pertaining to the issue at hand.
- Excellent work. Glad I came :) Looking forward to watching you succeed!
- This was aa valuable workshop. the technology council is doing a good thing.
- I prefer work/ study online options. Does the FNTC have accommodations available, should the training take us to Vancouver? I loved the virtual reality experience
- Very interested in upgrading technical skills/ knowledge in the area of communications and design. But I work full-time in PG need classes/ workshops in the region or online. Surprised there was no Communications round table> while this is a thread throughout the all the after topics there are serious issues within this in itself.
- Very interested in the continued development of this initiative.

Thank you for your input. We appreciate it!

If you have any questions, comments or concerns please contact us:

First Nations Technology Council

Phone: 604-921-9939 Fax: 604-921-9979

Toll Free: 1-888-921-9939 Email: gathering@technologycouncil.ca

Appendix 4 – Community Engagement and Project Governance

i. Engagement Strategy

Drawing upon the IRM, the Technology Council established a draft engagement strategy for this project, including an overview of the types of engagement that will take place over the course of LMP Phase I and identified risks and contingencies for the initiative. This community engagement strategy will be updated based upon key learnings from the hosting of the northern regional engagement sessions.

ii. Project Governance

Together, the following governance structures ensure that community engagement efforts remain responsive and respectful to Indigenous communities in B.C.

iii. Organizational Leadership

The Technology Council is under the direction of CEO Denise Williams, who receives guidance from the organization's Board of Directors. Members of the Board are appointed by the three provincial First Nations leadership organizations of the First Nations Leadership Council (BC Assembly of First Nations, First Nations Summit and the Union of BC Indian Chiefs). The Technology Council provides regular updates to provincial First Nations leadership at the annual summits and gatherings (which typically take place 3 times per year).

iv. Community Engagement Details

Community Engagement
Dates: September 11-12, 2018
Region: Cariboo
Location: Prince George

Total participants engaged: 31	Total travel subsidies: 1
Pre-registered on Eventbrite: 44	Travel subsidy costs: $609.80

FNTC Staff:	**First Nations represented by staff:**	**Community Organizations:**
• Denise Williams • Gary Patsey • Trevor Jang • Adrienne Larocque	• Lheidli T'enneh First Nation • Tsilhqot'in National Government • Takla First Nation • Mcleod Lake Indian Band	• Prince George Nechako Aboriginal Employment and Training Association • Northern Health • New Relationship Trust

	• Carrier Sekani Tribal Council	• Prince George Native Friendship Centre • B.C. Assembly of First Nations • Aboriginal Business Development Centre

Dates: September 18-19, 2018
Region: Northcoast and Nechako
Location: Prince Rupert

Total participants engaged: 35	Total travel subsidies: 9
Pre-registered on Eventbrite: 31	Travel subsidy costs: $3894.05

FNTC Staff:	**First Nations represented by staff:**	**Community Organizations:**	**Industry:**
• Maggie Patsey • Gary Patsey • Trevor Jang • Adrienne Larocque	• Council of the Haida Nation • Metlakatla First Nation • Nisga'a Lisims Government • Gitxaala Nation • Lax Kw'alaams Business Development	• Tribal Resources Investment Corporation • Prince Rupert Friendship House • Nisga'a Employment, Skills and Training • Terrace Nisga'a Local • Kyah Wiget Education Society	• Northern Online Results

Dates: September 24-25, 2018
Region: Vancouver Island/ Coast
Location: Victoria

Total participants engaged: 18	Total travel subsidies: 0
Pre-registered on Eventbrite: 42	Travel subsidy costs: $0

FNTC Staff in attendance:	**First Nations represented by staff:**	**Community Organizations:**	**Industry:**

• Maggie Patsey • Gary Patsey • Trevor Jang • Adrienne Larocque	• Songhees Nation • Tseycum Nation	• University of Victoria	• Total Support Solutions • Animikii Indigenous Technology

Dates: September 27-28, 2018
Region: Vancouver Island/ Coast
Location: Parksville

Total participants engaged: 24	Total travel subsidies: 3
Pre-registered on Eventbrite: 27	Travel subsidy costs: $1576.16

FNTC Staff in attendance:	**First Nations represented by staff:**	**Industry:**
• Denise Williams • Maggie Patsey • Gary Patsey • Trevor Jang • Adrienne Larocque	• Kitasoo Band • Nanoose Nation • Tseshaht First Nation • Komox First Nation • Stzuminus First Nation • Hupacasath First Nation • Te'mexw Treaty Association	• Evolution Business Media Group • Perceptable Innovations • ChinookX

Dates: October 2-3, 2018
Region: Northeast
Location: Fort St. John

Total participants engaged: 19	Total travel subsidies: 7
Pre-registered on Eventbrite: 21	Travel subsidy costs: $

FNTC Staff in attendance:	**First Nations represented by staff:**	**Industry:**
• Maggie Patsey • Gary Patsey • Trevor Jang • Adrienne Larocque	• Treaty 8 Tribal Association • Doig River First Nation • Fort Nelson First Nation • Prophet River First Nation • Saulteau First Nation	• Fort St. John Friendship Centre • Northern Lights College • Obair Economic Society

	• West Moberly First Nation	

Dates: October 16-17, 2018
Region: Thompson-Okanagan
Location: Kamloops

Total participants engaged: 24	Total travel subsidies: 8
Pre-registered on Eventbrite: 33	Travel subsidy costs: $

FNTC Staff in attendance:	**First Nations represented by staff:**	**Industry:**
• Maggie Patsey • Gary Patsey • Adrienne Larocque	• Adams Lake Band • Bonaparte Indian Band • Cook's Ferry Indian Band • Coldwater Indian Band • Neskonlith • Nooaitch Band • Nuxalk Nation • Oregon Jack Creek Band • Lilooet • Little Shushwap Lake Band • Lower Nicola Band • Lytton First Nation • Simpcw Band • T'it'qet Band • Tk'emlúps Band	• Raven Tales • Thompson Rivers University • BC Hydro • Aboriginal Training & Employment Centre

Dates: October 25, 2018
Region: Mainland/ Southwest
Location: North Vancouver

Total participants engaged: 11	Total travel subsidies: 0
Pre-registered on Eventbrite: 29	Travel subsidy costs: $0

FNTC Staff in attendance:	**First Nations represented by staff:**	**Industry:**

• Trevor Jang • Gary Patsey • Maggie Patsey • Adrienne Larocque • Denise Williams	• Squamish • Musqueam • Tsleil-Waututh • Tsawwassen First Nation • Semiahmoo • Skatin First Nation	• Justice Institute of British Columbia • First Peoples Cultural Council • Telus • Coastal Resource Mapping • Blockchain Canada

Dates: October 29-30, 2018
Region: Mainland/ Southwest
Location: Chilliwack

Total participants engaged: 15	Total travel subsidies: 2
Pre-registered on Eventbrite: 16	Travel subsidy costs: $

FNTC Staff in attendance:	**First Nations represented by staff:**	**Industry:**
• Gary Patsey • Maggie Patsey • Adrienne Larocque	• Xa'xtsa (Douglas) First Nation • Stsailes Chehalis Indian Band • Lilooet • Nlaka'pamux Nation Tribal Council • Sto:lo Tribal Council • Cheam First Nation	• Blockchain for Reconciliation

Total Phase One Engagements:

Total engagement events:	8
Total participants engaged:	177
Total Indigenous communities engaged:	50