

What We Heard

FINAL





A QATALYST FOR POSITIVE CHANGE

Who We Are

Qatalyst is a new name and a new operating model for a firm with a long operating history. Under our former name, FWCO Management Consultants, we have been providing management consulting services to public, non-profit and private sector clients across Canada for more than 30 years.

Qatalyst is recognized as one of the leading public sector consulting firms in Canada. We have created an extensive network of over 150 associates located across Canada and internationally. Our mission is to deliver leading-edge consulting services in a rapidly changing world. Better teams, better systems, and better technology will drive better results for our clients.

We have undertaken nearly 1,000 assignments for businesses, government, non-profits, and regional and Indigenous organizations with a particular focus on strategy, economic development, public policy, performance measurement and evaluation, organizational development and reviews, and service delivery model development.

210-314 West Cordova St. Vancouver, BC V6B 1E8 | Tel: 778.379.5590 | Toll-free: 844.584.9343
hello@qatalyst.ca

CONTENTS

- 1. Introduction** **1**
 - 1.1 Introduction 2
 - 1.2 Structure of the Document 2

- 2. Engagement Process** **3**
 - 2.1 Stakeholder Survey 4
 - 2.2 Focus Group Sessions 5
 - 2.3 Stakeholder Interviews 6

- 3. Major Findings** **8**
 - 3.1 The Knowledge Economy 9
 - 3.2 Priorities for Development 14
 - 3.3 Considerations in Developing the Action Plan 21



1. Introduction



1.1 INTRODUCTION

The Northwest Territories' (NWT) 19th Legislative Assembly identified the need to further diversify the economy by supporting growth in tourism, agriculture and the knowledge economy and by setting regional diversification targets. As such, the Government of the Northwest Territories (GNWT) has committed to working "with a broad range of partners to create a Knowledge Economy Action Plan." The Department of Industry, Tourism and Investment (ITI) is leading this work, with input from other GNWT departments as well as key stakeholders.

The benefits of a knowledge economy are not limited to any one sector but rather encompass the use of concepts such as innovation; primary, early stage and applied R&D; Indigenous and traditional knowledge; technology development, transfer and adoption; business start-up and scaling; and evidence-based decision-making to drive economic development and diversification across all economic sectors. A knowledge economy is important because the rate of innovation is a primary driver of economic growth and a major determinant of quality of life.

As part of this initiative stakeholders were engaged to inform the development of an action plan. This document summarizes the key findings from the engagement process which consisted of a stakeholder survey, eight focus groups, and interviews with a broad cross-section of stakeholders.

1.2 STRUCTURE OF THE DOCUMENT

The following chapter provides an overview of the engagement process while Chapter 3 summarizes the major findings. The final chapter also highlights a few of the major themes that emerged from the engagement process, and provides clarification to the scope and definition of the action plan.

A winter landscape at sunset. The sky is filled with vibrant orange and yellow clouds, with the sun low on the horizon. Below the sky is a range of snow-covered hills and a dense forest of evergreen trees. In the foreground, a large, flat, snow-covered area, possibly a frozen lake or a wide field, stretches across the middle ground. In the lower foreground, there are several buildings, including a dark wooden house and a yellow building, surrounded by snow and bare trees. The overall scene is peaceful and serene.

2. ENGAGEMENT PROCESS

2.1 STAKEHOLDER SURVEY

An online survey was posted using ITI Engage, ITI's public engagement website. The survey was designed to obtain input on the importance of further developing the knowledge economy in the NWT, recent progress that has been made, priority areas on which the GNWT should focus, and specific actions that could be taken to promote development.

The survey which was administered between June and October 2021 attracted 39 respondents. All respondents reported being involved in at least one aspect of the knowledge economy. They were commonly involved in the provision of business support services (44%), research or development (38%), and the education or training of knowledge workers (33%).

Involvement of Respondents in the Knowledge Economy (N=39)

Aspects	Responses	
	#	%
Providing business support services	17	44%
Research or Development	15	38%
Educating or training knowledge workers	13	33%
Providing funding or financing for businesses or research	12	31%
Applying Indigenous and traditional knowledge	12	31%
Other	10	26%
Building a knowledge-based business	9	23%
Total Respondents	39	100%*

*Responses are not mutually exclusive, will not sum to 100%

Just over one-half (54%) of respondents indicated that they are located in the North Slave Region, with 18% in the South Slave Region, 13% in the Beaufort Delta, 5% in Dehcho, and 5% outside of the NWT. Another 5% of survey participants did not provide an answer.

Regions Where Respondents are Located (N=39)

Regions	Responses	
	#	%
North Slave Region	21	54%
South Slave Region	7	18%
Beaufort Delta	5	13%
Dehcho	2	5%
Outside of the NWT	2	5%
No answer	2	5%
Sahtu Region	0	0%
Total Respondents	39	100%

Just over one-half of the respondents (56%) live in Yellowknife, with 10% living in Hay River, another 10% in Inuvik, and 5% in Fort Smith. Another 12% are divided evenly amongst Edmonton, Fort Simpson, Fort Laird, and Fort McPherson, and 8% of participants did not provide answer.

Communities That Respondents Live In (N=39)

Regions	Responses	
	#	%
Yellowknife	22	56%
Hay River	4	10%
Inuvik	4	10%
No answer	3	8%
Fort Smith	2	5%
Edmonton	1	3%
Fort Simpson	1	3%
Fort Liard	1	3%
Fort McPherson	1	3%
Total Respondents	39	100%

2.2 FOCUS GROUP SESSIONS

Eight virtual focus group sessions were staged using Zoom, involving 66 participants. The purpose of the sessions was to obtain input on the importance of further developing the knowledge economy, the major benefits that may come from further development, recent progress that has been made, factors that may be slowing development, the priorities and goals that the strategy should focus on, and actions that should be taken to promote development.

We set up dates and times for each engagement session and issued invitations to the target participants. ITI provided a list of approximately 145 target participants. Target participants were sent email invitations and asked which group they would like to attend, taking into consideration both the priority topic and their availability. Those attendees who did not respond were sent two email reminders. To further increase registration levels, we followed-up with potential attendees to ask them to register them for a session or alternatively an interview.

Each session lasted about two hours. The sessions each discussed all elements of the knowledge economy but focused more heavily on one particular component. The schedule, priority topics, and number of attendees are listed in the table below.

Date	Time	Priority Topics	Attendees
Thursday, July 22	10:00	Research and knowledge generation	10
Tuesday, July 27	1:30	Entrepreneurship in NWT / Access to business support and services	10
Wednesday, August 4	10:00	Application of Indigenous and traditional knowledge	7

Date	Time	Priority Topics	Attendees
Tuesday, August 10	10:00	Alignment between education & training system and the knowledge economy	9
Monday, August 16	1:30	Connectivity and access to business support services	4
Thursday, August 19	10:00	Entrepreneurship in NWT / Access to business support and services	5
Friday, September 10 th	10:30	Sharing of the benefits across all NWT communities and regions	11
Monday, October 4 th	10:00	The mining and natural resource sector, energy focused groups, and Indigenous development corporations	10
Total Attendees			66

As indicated in the table below, session participants are involved in a variety of different aspects associated with the knowledge economy.

Knowledge Economy Involvement	Participants	
	#	%
Providing business support services	19	29%
Research or development	15	23%
Educating or training knowledge workers	13	20%
Providing funding or financing for businesses or research	9	14%
Applying Indigenous and traditional knowledge	6	9%
Building a knowledge-based business	4	6%
Total Participants	66	100%

One notable challenge experienced in the sessions was inconsistent internet connectivity experienced by some participants located in the NWT. At times, participants were forced to turn off their cameras in order to improve their audio quality or lost their connection all together.

2.3 STAKEHOLDER INTERVIEWS

We conducted 16 interviews with key stakeholders, most of whom were not able to participate in the focus group sessions. The purpose of the key stakeholder interviews was to give those with particular expertise and knowledge applicable to the knowledge economy the opportunity to share their opinions on the importance of developing the knowledge economy, recent progress that has been made, factors that may be slowing progress, strengths that can be leveraged in developing the knowledge economy, and key priorities and actions that should be incorporated into the action plan.

As indicated in the table below, the interviewees are also involved in a variety of different aspects associated with the knowledge economy.

Organizational Knowledge Economy Involvement	Participants	
	#	%
Providing business support services	4	25%
Research or development	4	25%
Building a knowledge-based business	3	19%
Educating or training knowledge workers	2	13%
Providing funding or financing for businesses or research	2	13%
Applying Indigenous and traditional knowledge	1	6%
Total Participants	16	100%

3. Major Findings



The major themes arising from the stakeholder engagement are grouped into three sections:

- The Knowledge Economy section summarizes the feedback we received regarding awareness of the knowledge economy, the priority that should be placed on further development, recent progress that has been made, factors that may be slowing development, and the strengths on which the NWT can build.
- The Priorities for Development section summarizes the findings into five key priority areas including Connectivity, Research and Knowledge Generation, Entrepreneurship and Business Development, Partnerships and Collaboration, and Access to Skilled Workers.
- The final section, Key Considerations in Developing an Action Plan, highlights some of the key take away points from the engagement sessions that should be considered in developing the action plan.

3.1 THE KNOWLEDGE ECONOMY

The major findings of stakeholder engagement regarding their perceptions of the knowledge economy are as follows.

Prior to participating in the survey, interviews, and focus sessions, awareness of the knowledge economy was relatively low among many of the stakeholders.

However, while the term “knowledge economy” may not be commonly used by the stakeholders, they are familiar with some of the concepts embedded into the knowledge economy such as innovation, research, technology development and adoption, Indigenous and traditional knowledge, business start-up, and evidence-based decision-making.

In both the focus groups and the interviews, stakeholders suggested that one of the first steps to be taken in developing the knowledge economy is to create broader awareness of the knowledge economy and its potential importance to the economic health and well-being of the NWT. Stakeholders indicated that, without public understanding of the benefits of developing the knowledge economy, participation and support will suffer particularly within smaller more rural communities. It must be made clear the ways in which developing the knowledge economy can promote economic development beyond just the urban centres and show how all community members can fit into the components of the knowledge economy.

Some of the suggestions to increase awareness and participation in the knowledge economy included undertaking promotion and communication programs, staging events (e.g., such as hackathons) that raise awareness of technology and innovation, and establishing an innovation prize for the NWT. Community engagement and hands on exposure to elements of the knowledge economy were highlighted as key elements to a successful knowledge economy awareness campaign, suggesting the need for in-person (COVID-19 permitting) information sharing and instruction (e.g., tech and computer use workshops, knowledge economy information sessions, knowledge economy related job/career information sessions).

Most stakeholders recommended that the GNWT place a high priority on further developing the knowledge economy.

Once they understood what is meant by the term “knowledge economy”, most stakeholders encouraged the GNWT to make development of the knowledge economy a high priority. When survey participants were asked to rate how much of a priority the GNWT should place on further developing the knowledge economy on a scale of 1 to 5, where 1 is no priority at all, 3 is somewhat of a priority, and 5 is a major priority, the average rating was 4.4. In total, 59% indicated that it should be a major priority and all indicated that it should be at least somewhat of a priority.

Online Survey - Prioritization of Knowledge Economy Development

(On a scale of 1 to 5, where 1 is no priority at all, 3 is somewhat of a priority, and 5 a major priority, how much of a priority should the further development of the knowledge economy be to the GNWT?)

Rating	Responses	
	#	%
1- no priority at all	0	0%
2	0	0%
3- somewhat of a priority	7	18%
4	9	23%
5 - a major priority	23	59%
Total Respondents	39	100%
Average	-	4.4

Interviewees were even more supportive of knowledge economy development prioritization. All key stakeholders interviewed indicated that development of the knowledge economy is important, with the majority (88%) suggesting that it is very or extremely important.

Key Stakeholder Interviews - Importance of Knowledge Economy Development

Level of Importance	Responses	
	#	%
Extremely Important	7	44%
Very Important	7	44%
Reasonably important	2	13%
Total Respondents	16	100%

The stakeholders noted that placing a high priority on further development of the knowledge economy could:

- *Improve internet connectivity and telecommunications infrastructure*, providing businesses with access to larger markets, allowing more members of the population to engage in the KE, and facilitating economic development and research projects.

- *Benefit Indigenous communities* by increasing Indigenous economic engagement and incorporation of traditional knowledge in the economy.
- *Increase the NWT's capacity to conduct research and development and create knowledge* that helps to address economic barriers (e.g., remoteness, relative costs, cold climate, population size etc.), and capitalize on opportunities (e.g. global interest in climate change research).
- *Stimulate economic and entrepreneur development* by increasing competitiveness, retaining workers and knowledge, leveraging the NWT's unique advantages and resources, and providing opportunities for collaboration and partnerships across sectors and regions.
- *Increase access to higher education and training* which would improve access to skilled labour and enable residents to become more engaged in the knowledge economy.
- *Promote long-term economic growth and increased economic diversification*, reducing the impacts of economic cycles and creating a more environmentally sustainable economy.

According to the stakeholders, only moderate progress has been made in developing the knowledge economy in the NWT over the past five years.

From example, when asked to rate the progress made on a scale of 1 to 5, where 1 is no progress at all, 3 is some progress, and 5 major progress, respondents provided an average rating of only 2.3.

Knowledge Economy Development Progress

(On a scale of 1 to 5, where 1 is no progress at all, 3 is some progress, and 5 major progress, how much progress has been made in developing a knowledge economy in the NWT over the past five years?)

Rating	Responses	
	#	%
1 - no progress at all	6	17%
2	14	40%
3 - some progress	13	37%
4	2	6%
5 - major progress	0	0%
Total Respondents	35	100%
Average	-	2.3

When asked to identify areas of progress, the survey respondents, focus group participants and interviewees noted some improvements in:

- *Connectivity* – some improvements in fibre optic services, particularly as they relate to the Mackenzie Valley Fibre Link .

- *Innovation and experiential learning resources* – The expansion of makerspace capacity in Yellowknife and Inuvik has provided some increased access to innovation resources.
- *Technology adoption and advances* – Sectors such as diamond cutting, micro-manufacturing, mining, resource extraction, and construction have seen technological development and adoption.
- *Research and education* - Aurora College's planned transition into a polytechnic university is expected to provide greater opportunities and resources for the conduction of research and expanded education and training options.
- *Satellite and space sector* - The continued development of the Inuvik satellite station facility and the Western Arctic Research Centre have created a research community “cluster” and facilitated international partnerships.
- *Entrepreneur and research support* – Organizations such as the NRC, Futurpreneur, Entrenorth, and others have been helping support entrepreneurs and researchers financially and through advisory services.

A variety of factors are seen as slowing the development of the knowledge economy in the NWT.

The factors most commonly identified by stakeholders included low levels of communication and interaction within and between industry, educators, and government, limited access to skilled workers as well as education and training programs, and lack of reliable and affordable internet.

Factors Slowing the Development of the Knowledge Economy in the NWT (N=39)

Factors	Responses	
	#	%
Level of communication and interaction within and between industry, educators and government	32	82%
Access to knowledge workers or skilled workers	27	69%
Access to advanced education and training programs	25	64%
Access to reliable and affordable internet	24	62%
Our capacity and capabilities to undertake research or R&D	21	54%
Openness of industry, government and others to adopting new knowledge and new technology	20	51%
Our appreciation of the importance of innovation and the knowledge economy	19	49%
Available funding for research	14	36%
Access to capital for business development	12	31%
The level of entrepreneurship in the NWT	8	21%
Access to business support services	8	21%
Total Respondents	39	100%*

*Responses are not mutually exclusive, will not sum to 100%

Other factors that were identified by those surveyed included a limited emphasis on STEM skills in JK-12, low education and literacy rates in areas outside of Yellowknife, a lack of entrepreneurship, a failure to leverage the knowledge economy opportunities that exist within the resource sector, a lack of Indigenous involvement in the knowledge economy development process, and high costs of living and business operation.

The major constraints identified in the stakeholder interviews and focus groups included:

- *Internet Connectivity* – The lack of access to quality internet services in many areas of the NWT was highlighted as the single most important factor slowing development of the knowledge economy in every focus group session and by many of the interviewees. In many areas, connectivity is not adequate to conduct basic business functions such as virtual communications or meetings, downloading files, or sending and receiving emails. Connectivity is fundamental to further development of a knowledge economy.
- *Public Capacity for knowledge economy engagement* - Stakeholders indicated that there is a lack of public understanding as to what the knowledge economy is, why it is important, how it can benefit them, and how they can access it. Further, the ability of residents to participate is limited by low levels of technological skills, particularly outside of Yellowknife. Stakeholders suggested that there must be a focus on providing increased exposure and training in knowledge economy fields for adults through community engagement efforts, and students through changes to the JK-12 curriculum.
- *Business Supports and Access to Skilled Labour* – There is limited access to skilled labour. Businesses in the NWT face significant wage competition from the GNWT, the resource sector and southern employers. Stakeholders also indicated that many employers do not know how to access the supports that are available to them.
- *Capacity for Research and Development* – The north tends to have less access to equipment, researchers, innovation funding and tax credits.
- *Organizational Co-operation and Communication* – Stakeholders indicated that GNWT departments are often “siloes” and that there tends to be limited co-operation or coordination within government and with industry. They suggested that the willingness to work with all industries and sectors to leverage existing strengths and opportunities will be essential in advancing the knowledge economy.

The NWT has various strengths on which the knowledge economy can be built.

Key strengths that could be leveraged to further develop the knowledge economy include:

- *Northerly Location* – The northerly location and cold climate of the NWT provide significant opportunities in areas like cold climate research (e.g., auto testing, material testing, winter mining, permafrost research), satellite research and data exchange/downloads, and climate change research.

- *Natural Resource Sector* – The natural resource sector is well established and has made significant progress in technology development and adoption, and capacity building. There are opportunities to lever the resources, opportunities and challenges facing the nature resource sector to further develop the knowledge economy (e.g., through remediation projects, drone technology, x-ray scanning technology, and re-purposing of infrastructure for research and tech innovation projects).
- *Traditional Knowledge* – The traditional knowledge held by the Indigenous people of the NWT presents numerous opportunities that can be leveraged throughout the development of the knowledge economy.

3.2 PRIORITIES FOR DEVELOPMENT

The stakeholders identified a range of areas which should be priorities for the GNWT in promoting further development of the knowledge economy. We have grouped these areas in five categories: connectivity; research and knowledge generation; entrepreneurship and business development; partnerships and collaboration, and access to skilled workers. Each of these categories is discussed below.

Connectivity

Improving connectivity was highlighted as a priority action in each of the three lines of engagement. When asked which actions should be prioritized to improve the knowledge economy infrastructure, survey respondents most commonly identified increasing access to fast, reliable and affordable internet.

Actions to Improve Knowledge Economy Infrastructure (N=39)

Actions	Responses	
	#	%
Increase access to fast, reliable and affordable internet	34	87%
Enhance training for internet users (businesses or students)	23	59%
Increase access to mobile services on NWT highways	18	46%
Facilitate use of digital platforms and social media to access new markets	18	46%
Total Respondents	39	100%*

**Responses are not mutually exclusive, will not sum to 100%*

In the interviews and focus groups, stakeholders indicated that, in many communities, current internet services are not adequate to conduct basic business or administrative functions such as virtual communication/meetings, downloading files, loading webpages, or even sending and receiving emails. Participants stated that, without significant improvements to connectivity, many communities will not be able to access the knowledge economy’s full potential.

In today’s economy, broadband access is critical for the development of a knowledge economy. Due to poor connectivity and periodic service outages, NWT businesses frequently lose the ability to operate online or are forced to operate at partial capacity. Insufficient connectivity limits business’s

access to southern markets and poses a substantial risk to partner or client organizations that rely on timely communication or product/service delivery. Improved internet connectivity would enable communities to advertise themselves as potential locations for businesses to operate and for workers to engage in remote work.

The stakeholders noted that the challenge is twofold. The first is to ensure that residents have access to fast, reliable, and affordable internet. The second is to ensure that they have the required knowledge, hardware, and resources in place to effectively take advantage of that access. In response to these issues, stakeholders recommended that actions be taken to:

- *Improve fibre optic infrastructure* - Stakeholders stated that upgrades to the current fibre optic infrastructure must continue to be made such that all communities have access to fast and reliable internet.
- *Reduce costs* – Relative to other regions, NWT faces high costs of internet. Stakeholders indicated that these costs represent a barrier to accessing the knowledge economy. Potential options to reduce costs may include improvements at Northwest Tel as well as Starlink and satellite internet services.
- *Increase public capacity* - As connectivity improves, there will be a need to increase access to hardware for communities, businesses and students (e.g. lap-tops, desk top computers, tablets etc.), training for internet users, and assistance to help businesses in digitizing their operations and making use of digital platforms and social media to access new markets. Stakeholders suggested that in-person (when appropriate) and virtual internet usage and basic technology skills training should be made accessible to community members, particularly in areas that are experiencing newly improved connectivity.

Research and Knowledge Generation

Expansion of the NWT’s capacity for research and knowledge generation was highlighted by stakeholders as a key priority. When asked which actions should be prioritized to facilitate research and knowledge generation, almost two-thirds (64%) of survey participants identified transforming Aurora College into a polytechnic university, and investing in research capabilities, capacity and innovation hubs or technology centres.

Actions to Facilitate Research and Knowledge Generation (N=39)

Actions	Responses	
	#	%
Transform Aurora College into a polytechnic university	25	64%
Invest in our capabilities and capacity to conduct research (e.g., facilities, equipment, funding, expertise, and other resources)	25	64%
Invest in innovation hubs or technology centres	25	64%
Incorporate Indigenous, traditional and local knowledge into research programs	23	59%
Increase support for commercialization of research and innovation	22	56%

Actions	Responses	
	#	%
Raise awareness of the NWT as a great place to conduct research (e.g., because of its unique location and culture)	17	44%
Encourage dissemination and adoption of new knowledge and technology	17	44%
Provide pathfinding services linking researchers to funding programs and support	13	33%
Total Respondents	39	100%*

*Responses are not mutually exclusive, will not sum to 100%

The challenge is to increase the rate of research and knowledge generation, particularly that which is specifically relevant to the NWT and its communities, and facilitate the sharing of the research results. Towards that end, the stakeholders emphasized several actions to facilitate an increase in generation and dissemination of research and knowledge:

- *Transition Aurora College into a Polytechnic University* – The transition would better position Aurora as a hub for research in the NWT, providing opportunities to attract additional research funding, further develop research capabilities, and expand its connections and reach to all regions of the NWT. At the same time, expanding the school’s Research Services Division would better enable researchers to connect and cooperate on research projects, access support services including guidance, licensing and funding support, develop partnerships and relationships with local communities, and work with communities, industry, NGOs and others to identify mutually beneficial research projects.
- *Invest in research facilities and resources* – Stakeholders indicated that NWT researchers, businesses and others need increased access to research facilities and resources. By improving access to funding, research expertise, equipment. and other resources, the GNWT can stimulate further investment in research and R&D in the NWT. Aurora College could play a major role in hosting such facilities. Stakeholders also suggested that research and knowledge generation would benefit from simplifying the research license approval processes, improving data management practices and repositories, and increasing access to R&D funding and tax credit programs (e.g., NRC IRAP, SRED tax credits).
- *Support the development, adaptation and adoption of new technology.* The development, adaptation and adoption of new technology (e.g. through innovation hubs or technology centres) can improve the competitiveness of local businesses, open up new markets, and spur additional investment.
- *Increase awareness of the NWT as a great place to conduct research* (and support that research with pathfinding and other research support services). Increasing the level of research activity has the potential to both increase access to knowledge relevant to the NWT and its communities as well as serve as an important economic driver (as additional projects and funding flows into the NWT). With expanded research capacity, partnerships across sectors and regions can also be developed, creating further spin-off economic activity and societal benefits.

- *Connect communities and researchers.* There are opportunities to build community connections and incorporate Indigenous, traditional and local knowledge into research programs. These connections will also help to ensure that research is undertaken which helps to address local issues and priorities.

Entrepreneurship and Business Development

All three lines of engagement highlighted entrepreneurship and business development as a priority area. Survey participants indicated that increasing access to education and training for entrepreneurs, investing in co-working spaces, makerspaces, and incubators, creating youth entrepreneurship programs, increasing access to early-stage capital, and developing regional plans that work to extend the benefits of the knowledge economy to all NWT communities and regions are all actions that could facilitate increased levels of entrepreneurship and business development.

Actions to Facilitate Economic Development and Entrepreneurship (N=39)

Actions	Responses	
	#	%
Increase access to education and training for entrepreneurs	22	56%
Invest in co-working spaces, makerspaces, and incubators	20	51%
Create youth entrepreneurship programs	20	51%
Increase access to early-stage capital (e.g. seed capital, angel investment, or venture capital)	20	51%
Develop regional plans that work to extend benefits of the knowledge economy to all NWT communities and regions.	20	51%
Establish an entrepreneur mentorship program	18	46%
Expand existing business support services (i.e. planning, advice, training, marketing, etc.)	18	46%
Make strategic use of government procurement (e.g. first buyer programs, local buyer programs, crowd sourcing, and outcome or solutions focused sourcing) to encourage innovation	16	41%
Total Respondents	39	100%*

*Responses are not mutually exclusive, will not sum to 100%

Entrepreneurial activity in the NWT tends to be lower than in many other regions, primarily because the local economy is dominated by the government and natural resource sectors. Offering high wages and job security, these sectors draw workers who may otherwise have considered entrepreneurship. Stakeholders also identified other constraints including a lack of accessible and affordable business services and training, the limited local marketplace, a lack of entrepreneurship role models, and a lack of commercial spaces.

Stakeholders recommended that the following actions be taken to expand the entrepreneurial base and support business development:

- *Increase access to entrepreneurial and business services and training* – increased access to services such as applied training and education (e.g., entrepreneurial training including youth entrepreneurship training, business training, micro credentials, and technology

training), business guidance/mentorship, early stage funding (e.g. seed capital, angel investment, or venture capital) and capital support, support for business digitization, and business support services would help to increase the rate of new business startup and development. Stakeholders also suggested the creation of a central hub or “one-stop-shop” for entrepreneurial and business development information and support.

- *Develop innovation spaces and experiential learning centres* – Entrepreneurial activity can benefit from access to physical spaces and experiential learning centres (e.g., coworking spaces, makerspaces, and innovation hubs) that foster participation and collaboration. Such spaces can bring together people with different backgrounds, skills and expertise, foster collaboration, provide a focus for business development activity, and facilitate access to mentorship, training, support services, technical resources and equipment, and investment to help businesses get established and grow.

Other suggestions were to develop regional plans that work to extend benefits of the knowledge economy to all NWT communities and regions, and make more strategic use of government procurement (e.g. first buyer programs, local buyer programs, crowd sourcing, and outcome or solutions focused sourcing) to encourage innovation.

Partnerships and Collaboration

The need to build partnerships and collaboration between knowledge economy stakeholders was highlighted as a key priority. When survey participants were asked which actions should be used to facilitate the development of partnerships and collaboration, the top priority actions were strengthening the connections between education and business, encouraging the development of a strong industry association related to the knowledge economy, and staging events and other mechanisms that provide opportunities for networking.

Actions to Facilitate Partnerships and Collaboration (N=39)

Actions	Responses	
	#	%
Strengthen connections between education and business (e.g., through a cooperative education program)	33	85%
Encourage development of a strong industry association related to the knowledge economy	24	62%
Stage events and other mechanisms that provide opportunities for networking	13	33%
Total Respondents	39	100%*

*Responses are not mutually exclusive, will not sum to 100%

In the focus groups and interviews, stakeholders highlighted the importance of strengthening relationships:

- *Between industry and educators* – By partnering more closely with industry, the education system is better able to identify gaps and provide the programs and training needed to help address shortages in skilled labour. Stakeholders anticipate that the transition of Aurora College to a polytechnic university will create opportunities to expand post-

secondary education and training and provide more applied and technical training programs (e.g., micro credentials, experiential learning, technical certificate) across the NWT.

- *Between business support agencies* – A variety of different organizations are involved in delivering services to businesses and entrepreneurs in the NWT. Effective communication and collaboration between these agencies is necessary to avoid gaps and redundancies in services and to recognize unique community needs and competitive advantages/strengths. Stakeholders recommend the organizations should find more ways to better partner and leverage resources while explicitly clarifying the roles and responsibilities of each agency.
- *Between the natural resource sectors and other sectors.* – The natural resource sector is the largest non-government component of the economy. While the existing mines are nearing the end of their productive life, the NWT contains a vast array of mineral deposits and mineral occurrences, and several potential new mines are at various stages of development. The industry also generates significant economic activity related to R&D, exploration, remediation, purchase of products and services, construction, and employee spending. As such, there are significant opportunities for NWT businesses and organizations to partner with the sector in the development of new technologies, products and services as well as the development of new research, education and training programs (e.g. establishment of a centre for northern research or a mining technical centre of excellence).
- *Within industry and between industry and government.* A strong industry association could play an important role in championing development of the knowledge economy, representing industry in that process, and implementing activities related to advocacy, outreach, program development and industry networking. A similar need was identified in Yukon, where territorial government funding was provided to support development of TechYukon. Since that time, TechYukon has supported businesses with programs, information, networking, advice and professional representation; promoted the capabilities and value of the technology industry in Yukon; and represented industry at key tables to ensure that policies, programs, procurement and spending supports the stability and growth of the industry.

Access to Skilled Workers

Having access to a skilled workforce was highlighted by stakeholders as a priority area during each line of engagement. Survey participants indicated that increasing access to post-secondary education and training programs, further incorporation of STEM skills into JK-12 education, and the enhancement of training for internet users are all actions that could be taken to build capacity within the NWT.

Actions to Build Capacity in the NWT (N=39)

Actions	Responses	
	#	%
Increase access to post-secondary education and training programs	28	72%
Further incorporate STEM skills into JK-12 education	27	69%
Enhance training for internet users (businesses or students)	23	59%
Total Respondents	39	100%*

*Responses are not mutually exclusive, will not sum to 100%

The ability of the NWT to compete in an increasingly knowledge-based world will be dependent, in part, on the effectiveness of its education and training programs to prepare people to participate in the knowledge economy. Currently, the private business sector faces labour shortages, significant competition for skilled, training and educated workers from the GNWT and the resource sector (who can offer relatively higher wages and job security) and limited human resource capacity for R&D and innovation. Stakeholders frequently indicated that businesses struggle to attract and retain the skilled labour that they need and, at times, are forced to outsource jobs and projects to other regions where the necessary skills and knowledge are more readily available.

Stakeholders also noted that education and training programs in the NWT often do not adequately prepare workers to take on skilled roles and leadership positions, adjust to changing work environments, and learn new skills and technologies. Stakeholder also suggested that the JK-12 system does not provide students with the science, technology, engineering, and math (STEM) skills needed to participate in many aspects of the knowledge economy.

Stakeholders suggested taking several key actions to address these issues:

- Further aligning the post-secondary education system and training programs with needs of industry and opportunities in the knowledge economy* – A first step is to identify the existing gaps in the labour force and then work to address these issues through adjustments to existing programs and development of new programs. Gaps could be identified through increasing the involvement of industry (e.g., in program advisory committees, internships and coop education programs) and/or through a labour market study. In terms of addressing issues, there are also opportunities to further incorporate Indigenous, traditional and local knowledge in the education programs. There may also be opportunities to move towards more flexible programs such as micro-credentialing or badging; usually co-developed with industry (to ensure that the credential reflects the needed skills and competencies), a micro-credential shows that the recipient has demonstrated the required skills and competencies. Micro-credentials enable program requirements to be broken into smaller components, which can increase the flexibility and relevance of the training for both the employee and employer. The credentials may also be able to be stacked with other credentials to meet the requirements for larger qualifications.
- Improving the JK-12 education system* – The ability of students to pursue post-secondary education and engage in the knowledge economy is directly related to skills and knowledge they gain through the JK-12 system. Stakeholders suggested that secondary school graduates

in the NWT are significantly behind graduates in other areas in Canada, particularly regarding STEM skills. The stakeholders recommended that the needs of each community be assessed, and the curriculum adjusted accordingly. Stakeholders stated that students must be provided better support in developing STEM skills (particularly in areas outside of Yellowknife) and more and earlier exposure to the lines of work, training and career opportunities that exist within the knowledge economy in the NWT.

- *Accessing skilled workers from outside the NWT* – Stakeholders indicated that efforts should be made to attract skilled workers to the NWT. They suggested promoting the NWT as a great place to live and work, highlighting the lifestyle, access to nature, culture, and community. Stakeholders also indicated that there is an opportunity to attract remote workers (in areas with adequate connectivity) and new immigrants to Canada. Combined with efforts to retain existing workers and slow the “brain drain”, attracting skilled workers (as well as entrepreneurs) will also help to build the population of the NWT, thereby increasing the size of the local markets for our goods and services.
- *Leverage research and business opportunities to attract skilled workers* – The NWT presents numerous opportunities to outside companies, organizations, and workers. Stakeholders indicated that there are opportunities to partner with outside organizations and attract skilled labour in areas such as cold climate services and research, climate change research, and cold weather testing. Stakeholders also suggested that skilled labour could be attracted by advertising the opportunities to help develop the knowledge economy, such as building connectivity and transportation infrastructure and addressing the shortage of housing and commercial space experience in many communities.
- *Increasing the capacity of residents to use new technology* – In general, the technological capacity of the NWT’s population is underdeveloped. Stakeholders indicated that efforts should be made to provide community members with experiential learning opportunities that expose them to the skills and tools used in the knowledge economy and its career opportunities. Basic technology and internet use training can help to incentivize engagement in the knowledge economy. Stakeholders suggested that co-ordination between the JK-12 system and Aurora College could provide those services and help to maximize the use of available resources.

3.3 CONSIDERATIONS IN DEVELOPING THE ACTION PLAN

In the focus groups and interviews, stakeholders also provided some broader recommendations that should be considered in developing the action plan. These include:

- *Rebrand the knowledge economy action plan as an innovation strategy or action plan.* The stakeholder engagement process demonstrated that the term “knowledge economy” does not resonate with most stakeholders. Awareness of what is meant by the “knowledge economy” is very low. In contrast, there much greater awareness of innovation (and interest in innovation) as a major driver of economic growth and diversification.

- *Work to accelerate the rate of innovation across all sectors.* A action plan that treats the knowledge economy as its own economic sector and focuses strictly on economic activity directly related to the creation and transfer of knowledge would have a limited economic impact. In contrast, an innovation strategy that focuses on accelerating the acquisition and sharing of knowledge, including the capacity to learn, innovate, and utilize knowledge and technology, can generate economic impacts across all sectors of the economy.
- *Actions must be realistic, achievable, and scalable.* Stakeholders recognized the need to develop a plan that is realistic, given the available resources, barriers, time frame, and capacity of the NWT's population, and which can be easily adjusted to accommodate changes in the rate or scope of development of the knowledge economy. Stakeholders also suggested that the plan have clearly defined goals with an incremental approach to reaching them, stressing that the process cannot be rushed and that a long-term outlook is appropriate.
- *Clear and focused communication.* Stakeholders indicated that there is a lack of understanding of what the knowledge economy is and the benefits it can provide. To successfully implement a development plan, a communication campaign is needed to reach the public and community and industry leaders informing them of what the knowledge economy is, how they and their communities or organizations can access it, and the goals of the plan. Stakeholders explained that, without clear communication, public support and buy-in will suffer, particularly in areas outside of Yellowknife.
- *Actions should benefit NWT residents.* The NWT has historically had difficulty retaining its skilled workers and the benefits of economic activity within the territory. Stakeholders suggested that a knowledge economy development plan should be designed to first and foremost benefit those living in the North and support its communities and businesses in retaining and developing knowledge, skills, and economic benefit. They indicated that the individual needs of communities and sectors must be identified and that their engagement with the knowledge economy should be on their terms and done in a way that is relevant and accessible to them. Stakeholders suggested that by creating a plan that incorporates the unique strengths and barriers of each community and sector, the benefits of knowledge economy development are more likely to remain in the North.
- *Development of the knowledge economy must reach all communities and incorporate Indigenous and traditional knowledge.* Stakeholders identified the question "How can the development of a knowledge economy translate into economic development beyond Yellowknife and incorporate those who are predominantly involved in the traditional or Indigenous economy?" as one of the core issues. In response they suggested that the plan must align with the values and traditional knowledge systems of Indigenous communities and self-governing First Nations such that traditional knowledge is interwoven into all aspects of the knowledge economy. They also indicated that Indigenous communities should play a significant role in determining how funding is allocated, research projects are designed, support programs are developed and utilized, and pathways are created for Indigenous engagement in the knowledge economy. Some stakeholders also suggested that an inter-government council should be established which facilitates Indigenous input and explicitly defines the relationship between the GNWT and Indigenous governments. Lastly,

stakeholders suggested that Aurora College can play an important role in reaching communities throughout the NWT. As a polytechnic university, Aurora College will have three campuses and 21 learning centres and has committed to having a presence in every community. By engaging with communities and businesses, the college can help to identify capacity gaps and research projects that will help community members access the knowledge economy.

- *Leverage existing strengths.* Stakeholders emphasized that there is no need to “reinvent the wheel” during the development process and encouraged the leveraging of existing strengths, resources, and relationships. For example, stakeholders highlighted the strength and capacity of the natural resource sector as an opportunity to leverage the skills, technologies, infrastructure, and other knowledge economy components that exist within the sector. Other strengths identified by stakeholders were the NWT’s geographical location, cold climate, and traditional knowledge. They also suggested that programs such as MakeWays, Entrepreneur North, BDIC, and Community Futures are resources that can be leveraged. Lastly, stakeholders suggested relationships between knowledge economy components, such as Aurora College and the JK-12 system, can be capitalized upon to support development of the knowledge economy.
- *Partnerships with other northern regions.* Stakeholders encouraged the development of partnerships with other northern regions who may face similar barriers or could provide complementary resources and economic activities. Partnerships in areas such as cold climate research, satellite and space technology, and climate change research were highlighted as opportunities by stakeholders. They also indicated that there is limited access to capital and financing in the NWT, and that there should be a push to establish meaningful partnerships between the private sector, foreign investors, and the federal government.
- *The GNWT should take the lead.* Most stakeholders indicated that the GNWT is in the best position to take the lead throughout the development of the knowledge economy. However, stakeholders highlighted the need for the GNWT to work in close collaboration with key partners in industry, Indigenous governments, and the federal government. They strongly suggested that the GNWT should recognize that many levers of the knowledge economy are beyond its control and should therefore limit its role to funding and policy making, avoiding playing a significant role in designing specific actions. Stakeholders recommended creating an advisory committee made up of representatives from industry, the research and academic community, Indigenous community leaders and elders, and the arts community to oversee the development of the knowledge economy.