

CORPORATE PLAN

2020-2021



DIGITAL
TECHNOLOGY
SUPERCLUSTER

Corporate Plan

2020-2021

For the fiscal period ending March 31, 2021

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1 About Canada's Digital Technology Supercluster

1.1 Introduction

Canada's Digital Technology Supercluster ("Supercluster") is one of five independent, national, industry-led innovation consortiums created in 2018. We are a not-for-profit organization constituted under the *Canada Not-for-Profit Act*. We co-invest in industry-led technology development projects focused on solving some of society's and industry's biggest challenges.

These projects will grow Canadian companies, create jobs, accelerate Canada's global competitiveness, develop a talented workforce for the digital economy and grow a robust innovation ecosystem. Over the next decade, we aim to boost the national GDP by \$5B and support the creation of up to 13,500 jobs.

Our core objectives are to:

- Build powerful partnerships and alliances;
- Develop globally-competitive platforms and companies;
- Scale up small & medium-sized enterprises to increase ecosystem performance; and
- Increase the breadth and diversity of talent ready for a digital economy.

1.2 Our Vision

To position Canada as a global leader in digital technology through a Supercluster that unlocks the potential of data in the era of the intelligent enterprise.

1.3 Our Mission

Our Supercluster's mission is to:

- Create a critical mass of world-leading digital technology companies in BC and across Canada that develop innovative products, platforms and processes;
- Transform Canadian industries through the digitization of business, prioritizing industry-specific needs, and delivering productivity gains and competitive advantages at the firm and industry levels; and

- Grow the economic benefits for the region and for Canada by generating new companies, scaling existing firms, enabling performance improvements in Canada's sectors of strength, and positioning BC as a global hub for digital technology innovation.

1.4 *Our Charter of Values*

Our Supercluster is guided by core values that are the cornerstone of how members and participants interact and work together. These values are:

DIVERSITY. We embrace diversity and inclusion in everything we do.

TRANSPARENCY. We are transparent and open, candid, respectful in our communications and actions, and we promote a trustful environment.

COLLABORATIVE. We proactively collaborate, respecting and leveraging the value of different experiences and perspectives to drive agreement.

RESULTS FOCUSED. We are outcomes and results focused, knowing that through collaboration we will deliver meaningful, strong and positive results.

GREATER GOOD. We embrace the greater good and seek system-wide benefits.

BOLD. We are dynamic and innovative, pushing technology for maximum business and societal impact.

RESPECT. We keep our promises and, if there are conflicts, we declare them to maintain transparency and professional integrity.

1.5 *Program Strategy*

Digital technologies are transforming our society and economy. These technologies are advancing at an unprecedented combination of scope, scale and velocity. This is spawning new ways of thinking, redirecting human energies, creating previously unimaginable opportunities, disrupting ways of life, overturning powerful institutions and radically altering the built and natural environment. In short, the way we live, work, play and relate to each other is changing in ways that we have only started to comprehend.

These changes are also driving the creation of an innovation environment that is quite different from what has been experienced in earlier industrial revolutions where transformation and success resulted from leveraging mechanized production, electric power, electronics and information technology. Today's digital transformation is not just

about harnessing invention, rather, it is about learning to work with a convergence or fusion of technology that crosses physical, digital and biological boundaries. Today’s digital transformation demands a new kind of innovation enterprise.

For that reason, our Supercluster is founded on a collaborative model where we bring people and organizations together – some of whom have never met before. By exploring major industrial and societal challenges together within our innovation programs, project consortia are formed with the resilience to embrace the challenges and capture the opportunities that come with innovation in the digital age. At the heart of our model, and early successes, is team building, collective problem solving, discovering solutions with organizations and people with different perspectives, building meaningful relationships and learning to collaborate.

By not focusing on a single industry or sector, we create a unique space in which organizations that may not normally engage with each other can discover common goals and shared strategic interests. By leveraging the diversity of a broad base of participants, we can capitalize on the assets, perspectives and capabilities of many organizations. This leads to cross-sector, inter-disciplinary programs that are attractive, at scale and relevant across multiple sectors and international markets.

The following framework (Figure 1) illustrates how we develop programs that cut across economic sectors and platforms.

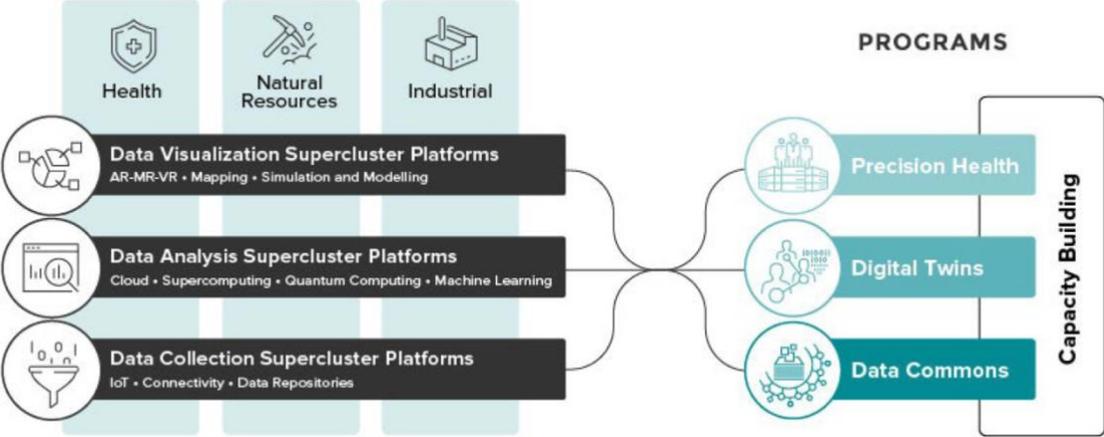


Figure 1: Program Framework

We currently run four programs. Three are defined as ‘technology leadership programs’ focused on delivering technology outcomes that solve major problems, and which solutions

have global market leadership opportunities. Projects within these programs create value by catalyzing new products, new platforms, new ventures, connecting people across sectors and disciplines, attracting follow-on investments in multiple contexts, and strengthening our region's reputation in innovation.

The **Precision Health** program aims to enable the delivery of precision health services around the world to improve health outcomes and the sustainability of health delivery systems while empowering patients as the centre of care delivery.

Digital Twins is a program focused on creating real-time, virtual production environments to improve operations management, simulation, modelling and training across multiple sectors.

The **Data Commons** program looks at aggregating big data resources from multiple stakeholders into shared platforms with broad-based and potentially world-leading protocols relative to collection, security, access, sharing and use in machine learning and innovative application development.

Our fourth program, **Capacity Building**, is all about talent development. Projects are focused on ensuring we have trained, educated and 'job ready' people to develop, implement, apply and scale innovative solutions while also ensuring that the scaling and marketing of digital technologies is based in Canada to create good, well paying jobs for Canadians. Creating opportunities for women, Indigenous peoples and other under-represented groups in the technology sector for a more inclusive, innovative digital workforce is a priority.

Value Capture. While every program invests in projects with a set of target outcomes, as they move through various stages towards project completion there are multiple pathways that create benefits for both the project participants and the ecosystem at large. We have learned through our Members over the past 18 months of operation that success is multi-dimensional and thus we see impacts related to:

Scaling Companies: This includes attracting follow-on investments, growing market share through customer acquisition and reaching international markets.

Developing SMEs: We can (and do) help to accelerate the growth of small and medium enterprises (SMEs) by connecting them to large organizations, intellectual property (IP) expertise, new customers, as well as those with potential sources of risk capital, where appropriate.

Research Commercialization: We help organizations leverage existing investments in research and innovation centres of excellence to translate and evolve scientific discoveries into products and services that can be used in industry and other domains domestically and exported globally.

Connecting People: Through multiple forums created and curated through our Supercluster, we support relationship building that surfaces capabilities and expertise leading to new relationships, new customers and new jobs.

Job Creation: Every element of what we do with and for our stakeholders includes our commitment to protect, expand and create meaningful job opportunities for Canadians.

Economic Productivity: Through our programs and selected projects, we are dealing with shared challenges and gaps which could have benefits across organizations and industry sectors.

Reputation: We are determined to build recognition for Canada as an innovation nation.

Unanticipated Benefit: There are always surprises that come with innovation and thus, we seek to also recognize emergent benefits so we can learn more about what it takes to be a successful, global leader in innovation.

1.6 *Development Path*

As outlined in our *Strategic Plan 2018-2023*, the evolution of our Supercluster was planned from the outset to be comprised of three stages: a two-year stage of “initiating collaboration”, followed by a three year stage of “accelerating innovation”, and progressing to a five year stage of “enhanced performance and sustainability”.

This deliberate structured approach continues to provide a solid foundation for our planning, engagement and expectation setting with our stakeholders. We have established good business systems and provided people and organizations time to initiate collaboration. Simultaneously we are driving towards ambitious outcomes while developing organizational foundations, systems and approaches (Figure 2).



Figure 2: Supercluster Roadmap

As we complete our first stage of development, we have successfully established a good foundation for our Supercluster. In mid 2020 we will move into “Stage Two” of our development: *Accelerating Innovation*.

In this stage we will increase the scale and ambition in our projects. That means we will be looking for the best opportunities in our programs for follow-on funding. We’ll be looking for synergies across projects and across the membership including potential new program initiatives. We will also be looking at new business systems to support continued improvement in our service delivery.

Finally, as an apt transition from Stage One to Stage Two, we will be introducing a new brand for our Supercluster, one that expresses the unbound ambition of our members to become leadership enterprises in the digital economy.

2 Progress 2019-2020

2.1 Bolstering Operations

a) Growing the Supercluster Investment Portfolio

Our goal for this year was to build on the momentum of our Cycle 1 projects by completing additional investments.

In addition to the selection of seven technology leadership projects from Cycle 1, announced in March 2019, we selected another nine projects through our Cycle 2 competition in August 2019 with additional projects scheduled to be selected in March of 2020 at the conclusion of Cycle 3. We also completed our first call in Capacity Building with eight projects being selected. By the end of this fiscal year, subject to the conclusion of Cycle 2 contracting and Cycle 3 selection decisions, we will have increased from seven to approximately 27 projects in our portfolio.

While we still aim to increase the ambition in our projects, we were pleased to see that the Ideation Forums, Thought Leadership Breakfast Series and networking efforts successfully introduced new opportunities into the portfolio and led to the recruitment of new members. This has resulted in a more ambitious portfolio and a stronger membership base.

Our achievement against our objectives for the past year is:

<i>Objective</i>		<i>Progress</i>
1. Build strong program portfolios with two completed cycles of technology and capacity building project investments.		Completed as planned
2. Build ideation and strategic foresight capabilities that lead to bold, transformative project submissions.		Completed as planned
3. Monitor and support the achievement of key milestones in approved projects.		Completed as planned

b) Building an Engaged Member Community

Our goal for this year was to increase the size of our Member community and provide opportunities for members to connect, explore ideas and develop projects together.

As a Member based organization, building, curating, and growing a diverse and engaged Membership is fundamental to our success. Introducing opportunities to our Members to grow and evolve is one of the most important things that we do. Our initial outreach into the community has been very successful. In this past year, our membership grew to 36 members and more than 400 Associates.

The combination of Ideation Forums and workshops, networking and consortium building activities resulted in our organization receiving over 100 Expressions of Interest (EOI) for this year's investment cycles. In addition, outside the project investment cycles, many of our SME members have developed partnerships with larger organizations and customers that has allowed them to grow revenues, increase their workforce and raise growth capital.

Finally, when we look at how this has affected project participation, we see a diverse mix of organization types including just over 50% of project participants as Small and Medium-sized Enterprises (SMEs) (Figure 3).

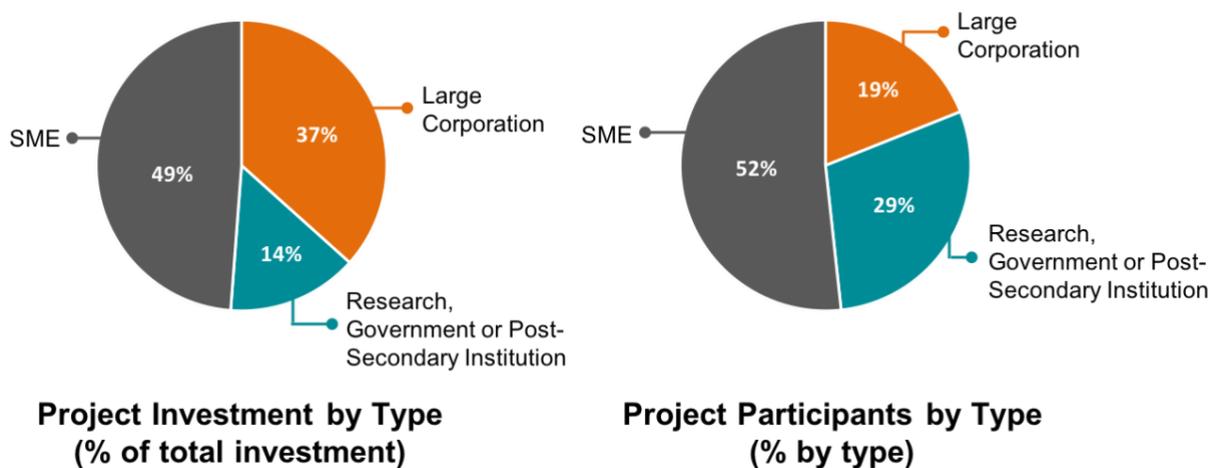


Figure 3: Project Investment and Project Participation

Our achievement against our objectives for the past year is:

<i>Objective</i>		<i>Progress</i>
1. Grow member participation in Supercluster projects.		Completed as planned
2. Support the development of world-class proposal teams around compelling project concepts.		A good start, but we still need more ambitious projects in our program portfolio.
3. Leverage the collaboration network to support the scale up of SMEs and job creation by connecting companies with customers and markets through supercluster projects.		Completed as planned

c) Scaling up and Optimizing the Organization

Our goal for this year was to hire our team, begin implementing the business processes needed to serve our members and stakeholders, and establish foundational policies and procedures for the organization.

We have already filled a number of key roles and are continuing our search for the right individuals to join our programs team to further bolster our efforts and help deepen our program strategy. We are working through the model on how we ensure our people can be fully focused on developing dedicated portfolio strategies for our programs while cultivating a strong pipeline of ambitious project investment opportunities.

In terms of our business systems, we implemented several preliminary digital systems for numerous parts of our organization which has helped us define an optimized end-to-end system. This has enabled us to move forward on implementing a world-class system near our year-end and into the coming fiscal year. This system is anticipated to further streamline member relationship management, project proposal, selection and monitoring.

In addition to systems, we established a full suite of foundational policies and procedures covering a range of topics including conflict of interest, expenditure authority, code of conduct and more.

Our achievement against our objectives for the past year is:

<i>Objective</i>	<i>Progress</i>
1. Complete the hiring of a high-performing Supercluster team.	 The majority of our roles were filled but a few key roles remain open.
2. Implement innovative benchmarking, world-class business systems and digital engagement platforms to support Supercluster operation.	 We implemented many smaller digital systems for several parts of our organization which helped identify opportunities. We are in the process of procuring a cohesive system and expect to make solid progress by year end.
3. Strengthen the organization's governance and culture by continuing to refine its operating policies and procedures and by deliberately reinforcing the culture for the Supercluster.	 Completed as planned.

d) Creating a Leadership Brand and Culture

Our goal for this year was to complete a brand strategy anchored by a culture grounded in the values set by our founding members.

Our Supercluster exists to help our members become leadership enterprises on the global stage. This requires an ambitious brand backed by a creative, service-oriented culture. To help create this leadership mindset, we have undergone a very deliberate, consultative approach to complete a brand strategy that reflects our aspirations. We are

now in the process of completing the brand design as an accurate expression of that strategy.

Throughout the development of our projects and our operations we have taken care to reference our core values and our recruitment has resulted in a diverse mix of talent on our Supercluster team.

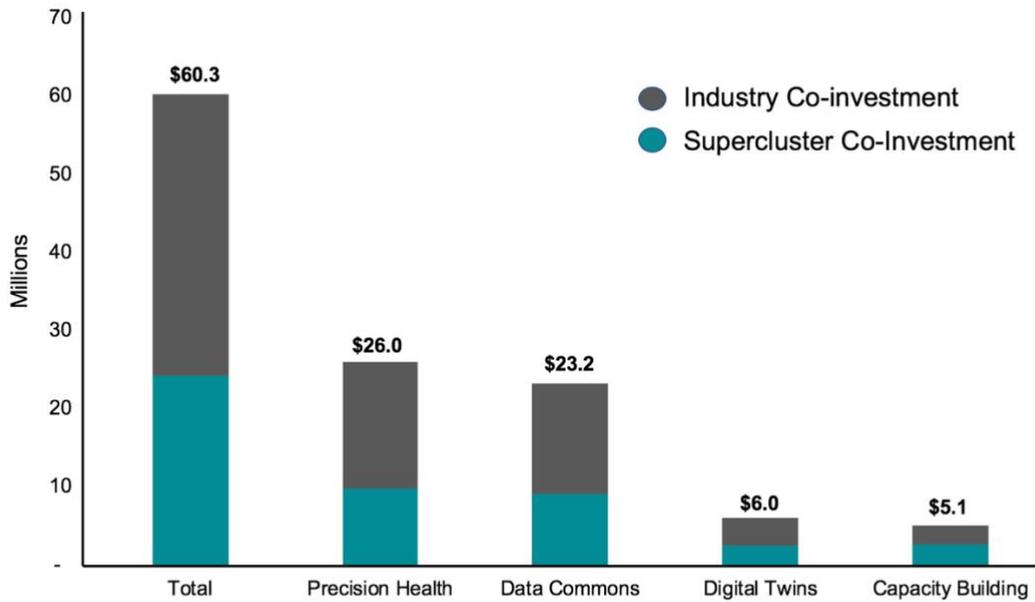
Our achievement against our objectives for the past year is:

<i>Objective</i>		<i>Progress</i>
1. Complete a brand strategy to reinforce and promote a leadership mindset within the Supercluster team and members, and across the ecosystem.		On track to be completed by the end of the year.
2. Actively promote Supercluster values by reinforcing the culture of the Supercluster community.		Completed as planned.
3. Cultivate a diverse mix of leadership talent that includes women, Indigenous peoples and staff from around the world.		Completed as planned.

2.2 Managing a World-class Project Investment Portfolio

a) Portfolio Investments

As of December 2020, the Supercluster has completed Master Project Agreements (MPAs) with 21 projects representing a total investment commitment of \$60.3 million (Figure 4).



* Contracted as of January 2020

Figure 4: Cumulative Committed Investment

We have one more investment selection process to complete by the end of the fiscal year which will add additional project investments to the portfolio.

b) Precision Health Program

The Precision Health program is working to establish Canada as a leader in data-driven innovations that consider genomics, lifestyle and environmental factors to improve disease prevention, early diagnosis and personalized treatment for improved health. Here are some of the emerging themes in our project portfolio:

By applying Artificial Intelligence (AI) / Machine Learning (ML) in intelligent health networks, we are improving both access and early diagnostic accuracy for skin cancer, urgent cardiovascular and prenatal conditions and other needs.

Point of Care Dermatology Intelligent Network

Early detection of skin cancer is critical to improving the chances of survival, yet there can be up to a six month wait time to see a dermatologist. By using AI-powered medical imaging that incorporates dermatology and pathology data and

images, patients can get diagnosed in days, rather than months, anywhere in Canada.

Intelligent Network for Point of Care Ultrasound

Ultrasound imaging is used to provide an early diagnosis of many medical conditions, including urgent cardiovascular and prenatal conditions. This project will combine portable ultrasound devices, imaging technology, and ML to enable family physicians to make accurate diagnoses, regardless of where patients live.

By actively aggregating and applying genomic information, we are providing the data needed by healthcare professionals to develop better personalized treatment options.

Secure Health and Genomics Platform

This proof-of-concept project aims to define an effective system to collect, protect, secure, access, and use health data to improve the well-being of all Canadians. The pan-Canadian digital health platform being developed will be geared to democratize access to secure storage, analysis, and sharing of health data.

Tailored Health - Pharmacogenetics

With a simple cheek swab and pharmacogenetic tools, physicians and pharmacists can tailor for each patient, the type and dose for any of the 900+ most prescribed medications. Through this technology patients can get the right medicine, in the right dose, at the right time, thereby improving patient outcomes, reducing harmful drug interactions, and improving the cost effectiveness of our pharmacy-based system.

By introducing technologies that provide people with data to help them actively manage their health, we also can support innovation treatments dealing with current healthcare challenges.

Personal Health Wallet

By applying blockchain technology to personal health data, individuals will have full custody of their health data in a secure environment. This allows patients to determine with whom they will share their health data, while also providing informed consent for that sharing.

Reducing Opioid Use for Pain Management

This active monitoring system will enable physicians to improve pain management, and proactively manage opioid prescriptions and their use in surgery patients. This technology will allow for personalized evaluation of a patient’s use of opioids, response to pain, nausea, mobility, and coinciding sleep habits – all critical elements in optimizing treatment and minimizing the risk of opioid addiction.

To date we have committed nearly \$26 million to projects in Precision Health as follows (Figure 5):

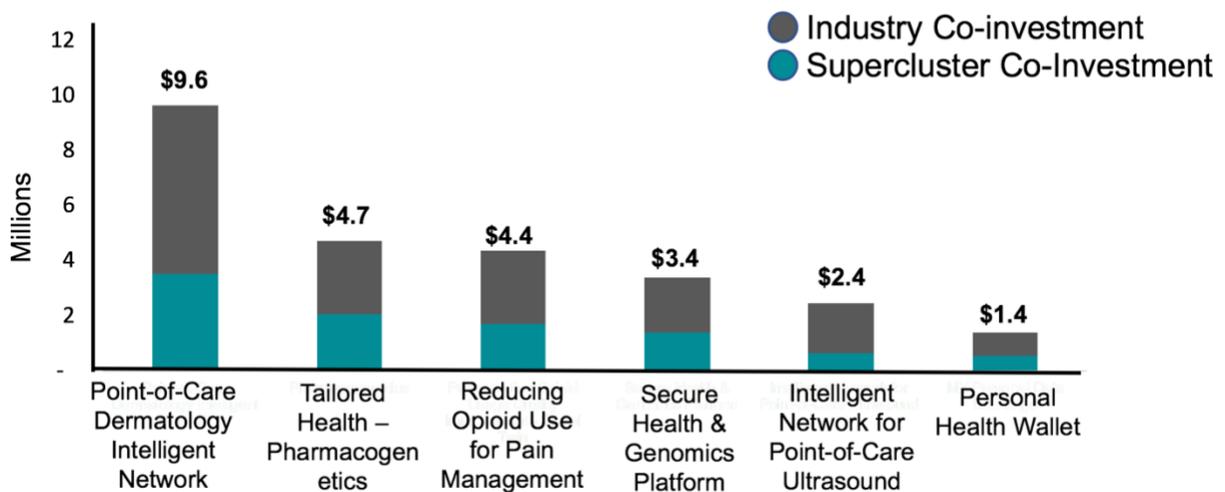


Figure 5: Investment in Precision Health Projects

c) Digital Twins Program

The Digital Twins program is using digital technologies to create real-time, virtual production environments for operations management, simulation, modelling and training. Our current focused investment areas are platforms that enable real-time execution of analytical models that interact with people and real control systems. Here are some of the emerging themes in our project portfolio:

By integrating a broad spectrum of digital twin technologies, we are laying a foundation to use data in improving the productivity of Canadian goods producers.

Learning Factory Digital Twin

A proof-of-concept project to develop a digital twin of the manufacturing process of aerospace components. This will allow hands-on learning and research to drive continuous improvements through predictive maintenance, real-time monitoring and quality control. The digital twin will also inform future work and create a new approach to advanced aerospace manufacturing.

Predictive Analytics for Manufacturing Processes

Quantum computing and advanced machine learning will analyze chemical, temperature, voltage and other critical data in the metal finishing manufacturing line for complex aircraft parts. This will provide new insights for the development of a digital twin and an optimized manufacturing process for large equipment such as aircraft components.

By using augmented reality to provide better information on capital intensive assets throughout their lifecycle we are improving not only operating costs, but the health and safety associated with the performance of that asset.

Augmented Reality for Maintenance and Inspection

There is a significant need to document damage on the surfaces of commercial aircraft or large shipping vessels. This project will create a tool to enable the display of data in an augmented reality view to improve the safety, accuracy and cost of inspections of these very large objects.

To date we have committed just over \$6 million to projects in Digital Twins as follows (Figure 6):

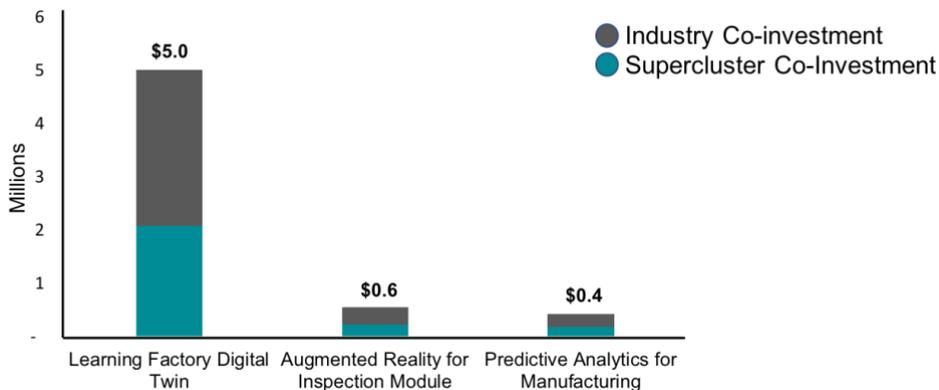


Figure 6. Investment in Digital Twins Projects

d) Data Commons Program

The Data Commons program is working to provide new digital solutions by aggregating data resources into shared platforms for exploration, machine learning and innovative application development. Our current investment focus areas are platforms that enable discovery of data in distributed environments. Here are some of the emerging themes in our project portfolio:

By aggregating landscape management data, we can use that information to better manage our natural resources, including enhanced protection of our environment.

Earth Data Store

This project will collect, standardize, and secure data from multiple sources such as earth observation satellite imagery and environmental sensors, for predictive purposes. Some of these purposes include forecasting where wildfires are most likely to occur or finding the most environmentally sensitive way to construct a natural resource project. Through interactive visual maps and running deep learning algorithms, resource managers will be able to better observe and protect remote areas.

Fresh Water Data Commons

Water is a precious resource under significant pressure globally as a result of climate change, and human and industrial activities. The development of a platform integrating various sources of data to better understand ecosystem health, specifically of major water systems such as the Columbia Basin, will better inform water use, conservation, and management.

By improving crop health, we enhance productivity in the agriculture sector.

Precision Agriculture to Improve Crop Health

In the face of climate change, increasing threats from pests and pathogens are impacting our environment and food security. This project will develop new pest and pathogen controls through the application of computational biochemistry, genomics, machine learning, and robotics, to manage disease in field crops, minimize the use of pesticides, and secure export markets.

To date we have committed over \$23 million in Data Commons as follows (Figure 7):

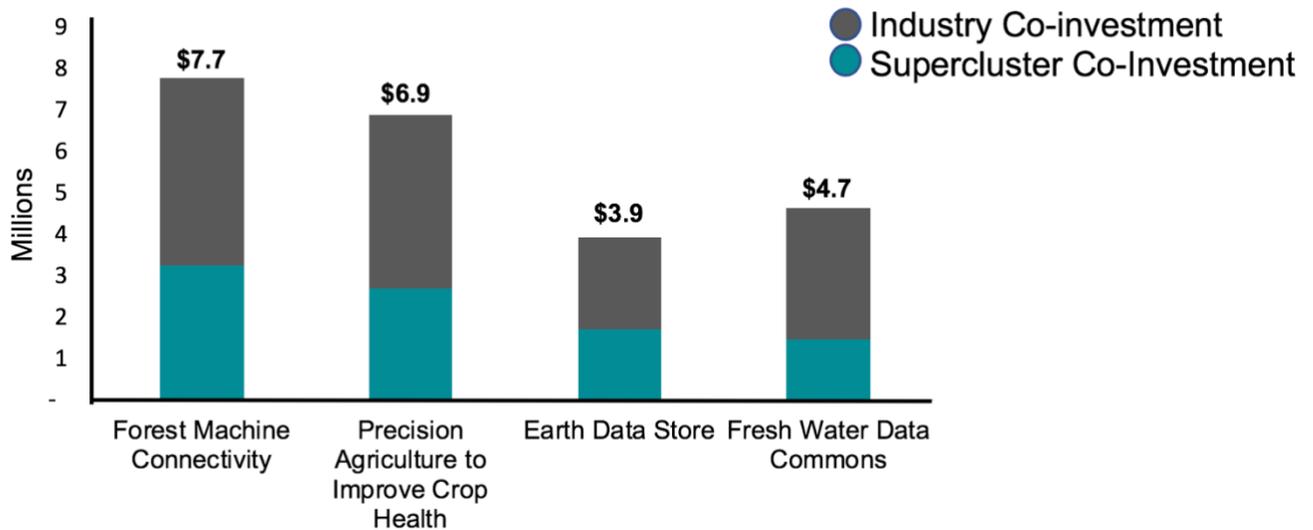


Figure 7. Investment in Data Commons Projects

e) Capacity Building Program

The Capacity Building program is focused on ensuring we have trained, educated and 'job ready' people to develop, implement, apply and scale innovative solutions while also ensuring that the scaling and marketing of digital technologies is based in Canada to create good, well-paying jobs for Canadians. Broadening the talent pool to create opportunities for women, Indigenous peoples and other groups under-represented in the technology sector is a priority.

In August 2019 we concluded the Pilot Cycle for Capacity Building. This call resulted in 49 EOIs with eight proposals selected at the end of an engaged and fulsome process. The response to the call confirmed the demand for talent development programs. As a result, we are reviewing and recalibrating the program for 2020. Here are some of the emerging themes in our project portfolio:

By helping SMEs improve their product development capabilities, we improve their ability to acquire customers and scale their companies.

Design for Startups

Design for Startups will bridge the gap between technology and design for improved product development. The project will bring together the technology and design

communities by connecting designers with technology startups through intensive 12-week design problem-solving sessions. This is a fundamental step in building new talent capacity and paving the way for a brighter future for design-led technology companies in BC.

By providing technical, entrepreneurial and financial opportunities to women, we provide multiple pathways to improve inclusion and diversity in the digital economy.

Athena Pathways

Athena Pathways is helping Canadian women see the potential of the technology sector, and how a career in AI aligns with their skills and interests. This 18-month program will provide girls and women, from middle through post-secondary students to professionals and leaders, training in computing science and gender diversity in AI. In addition, dozens of internships and mentorships in AI will be made available to women across the tech ecosystem.

Women's Entrepreneurship Program

The Women's Entrepreneurship Program will build capacity for women entrepreneurs and their tech ventures. Through boot camps, workshops, mentorship and peer-sharing on leadership skills, this nine-month program will provide opportunities for women to gain entrepreneurial skills and insights in a supportive environment.

Future Capital

Future Capital provides investment education that enables women to lead and shape the future of the economy. Through the Future Capital program, 500 Canadian women will gain access to a new platform for education and become members of an emerging network of women decision-makers in the tech and innovation ecosystem. This group will gain new opportunities to lead innovation within Canada.

By building awareness, competency assessments and exposure to leading edge technologies, we are laying the foundation for people to acquire skills and join the digital workforce.

Diversifying Talent in Quantum Computing

The field of quantum computing is exploding with the power to solve our most challenging problems and the demand for talent in this emerging field is high. With

BC emerging as a leader in quantum computing, the 24-month Diversifying Talent in Quantum Computing program will work with Indigenous education leaders to ensure that youth and young adults are aware of the career opportunities presented by this revolutionary technology.

Competency Assessment Mapping Platform for Industry Responsive Education

CAMPFIRE, the Competency Assessment Mapping Platform for Industry Responsive Education pilot program, aims to provide the skilled talent that employers need, balanced with rewarding employment for workers who need new skill sets. This project will help connect 600 early- and mid-career workers with the digital skills and competencies they need to transition to new work over the next 24 months.

HyperTalent

This program will focus on K-12 educators and Indigenous youth to tackle the technology talent shortage in British Columbia. HyperTalent will connect more than 100 teachers from rural and urban school districts with educational seminars, tours of leading technology companies, and hands-on experiences. This will build awareness of the kinds of technology-based careers open to students and support school curriculums with real-world examples of the opportunities ahead.

By developing training programs for skilled positions that can be deployed remotely or in field operations for our natural resource sector, we support regional economic development and job creation.

Autonomous Systems Technician

The Autonomous Systems Technician program will offer new training and certification as the resource sector implements new technology networks to enhance operations with real-time data. The pilot program will focus on training women, Indigenous peoples, and youth who are currently under-represented in the field so they can build telecommunications careers close to home, addressing the short supply of qualified industry employees.

To date we have committed over \$5 million in Capacity Building as follows (Figure 8):

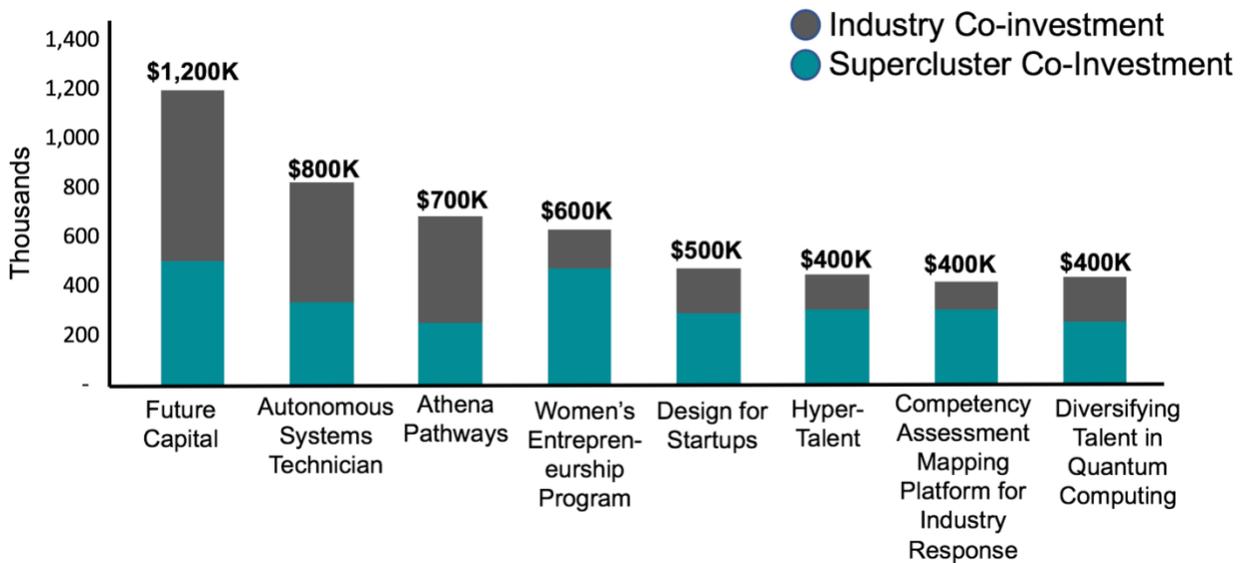


Figure 8. Investment in Capacity Building Projects

2.3 Building a Robust Innovation Ecosystem

We had a strong start in the first year, achieving most of our objectives. The following is a summary of our initial plans and the actual results against those plans for the current fiscal period.

Ecosystem meetings. Throughout 2019-2020, our Supercluster hosted a number of meetings with the innovation ecosystem stakeholders and convened three meetings (October 2018, February 2019, and June 2019) of the Capacity Building program advisory council which informed the design and priorities capacity building program.

Government interaction. The Province of BC is a key strategic partner in the Supercluster and has a significant interest in the Capacity Building program. We will continue to work with BC's Innovation Commissioner and Innovate BC to coordinate our investment and activities across the Province.

Indigenous engagement. Based on principles of inclusion and collaboration, we have a framework for ongoing engagement to strengthen and increase the participation of Indigenous-led businesses and entrepreneurs. Our framework was developed with input from our board and the community and outlines engagement at the organizational, program/project and community level. Some of the concrete steps we've taken to move

forward include:

- Initial progress in establishing the equivalent of a Champions Table¹ made up of three to five individuals who would co-collaborate on initiatives aligned with the Supercluster, with initial discussions with Business Council of BC to leverage their Champions Table and engagement opportunities.
- The addition of representation from First Nations Technology Council and First Nations Health Authority on Program Advisory Councils to inform the approach for engagement, program strategy and design, particularly for the Capacity Building and Precision Health programs.
- The co-development of a workshop in early 2020 to bring together relevant Indigenous-led organizations and businesses with the Supercluster and its Members to explore 'what is possible'. This will also generate awareness and knowledge between Indigenous-led organizations and businesses, the Supercluster and its Members.

2.4 Implementing the Intellectual Property Strategy

In November 2018, we initiated an active Intellectual Property (IP) Strategy and Management function and started to embed all the requirements associated with Intellectual Property in the MPA templates that govern our Technology Leadership Projects.

We have put the foundational elements in place to manage the IP which will be created by our projects and enable the ecosystem to build upon the outcomes of these projects. More specifically we have done the following:

Cycle 1. The technology leadership projects that were selected in our first competition cycle – called Cycle 1 or the Pilot Phase, have incorporated the IP rationale requirements into their MPAs. Provisions related to background IP, foreground IP, IP ownership, IP protection and licensing have been included in the signed MPAs for all Cycle 1 projects.

Engage an IP Manager. The IP Manager was instrumental in the negotiation of the Cycle 1 MPAs and also reviewed the Cycle 2 proposals during the selection process and

¹ Modeled after the BCAFN-BC Business Council Champions Table which was established to advance economic reconciliation within BC and is comprised of key business and industry leaders in BC, and several First Nations leaders.

provided input to the selection panel. The IP Manager also supported Cycle 2 and Capacity Building projects into their MPA negotiation phase, providing considerable guidance, support and leading the Thought Leadership Breakfast for our Members in December. As a result, all our MPAs are aligned with our IP Strategy.

Supercluster IP Registry. We are working with the other Supercluster IP Managers to identify the best way to share information about foreground IP between Members. Through these discussions, possible tools have been identified and are being assessed. In the interim, our Supercluster is proactively monitoring the foreground IP that is being generated to ensure that information for the IP registry is comprehensive.

Build Member Awareness & Education. A survey of requirements and gaps in education and awareness of IP was undertaken at the beginning of the year to inform the types of activities that would help our Members. In response to this feedback, we leveraged existing internal resources and engaged key partners McCarthy Tétrault and Norton Rose Fulbright to help Members understand the value of IP and how it can be leveraged. We have also tried to make Members aware of the risks associated with third party IP and not protecting their own IP. In order to support these educational initiatives, we organized several workshops and a thought leadership breakfast on IP. Finally, in order to advance Members' awareness of the competitive landscape, we have supported prior-art searches on specific project-related topics.

Benchmarking. We have evaluated both the governance and operations of leading cluster and supercluster organizations such as the Eureka clusters (ITEA3 and CELTIC-NEXT) to understand their best practices, identify opportunities for longer-term collaboration, and learn how IP is addressed. Our IP Manager has also identified learnings related to foreground IP. We are supporting Members in adopting a strategic approach to IP by considering opportunities to leverage university generated IP, participating in standards setting bodies and considering building out an ecosystem through IP.

2.5 *Implementing the Data Strategy*

At the beginning of the year, we began to operationalize our Data Strategy by pragmatically focusing on the Cycle 1 Technology projects through their contracting phase. These projects included a data rationale, based on the Supercluster Data Strategy, and was focused primarily on data management.

We matured our implementation of the Data Strategy further in Cycle 2 by posing questions related to the “data-as-an-asset” part in these projects and have asked the project teams to define their position on topics such as:

- What roles do you envision with respect to data in your consortium? E.g. data producer, data consumer, data owner, data custodian, etc.
- What kinds of data will be generated through the project and which organization will play which role for each kind of data?
- What security and privacy Policies will govern the different types of data in your project?
- Which existing national and international standards are relevant to the kind of data being generated through the project and the role of these standards for supporting data management?
- How do you plan to ensure the integrity of data?
- What is the data residency policy for your data?
- How is data going to be shared within the project Consortium?
- Is data going to be made available outside of the project Consortium, and if so, on what basis?

The Supercluster has also developed its first draft of a Standardization Strategy, where substantial emphasis has been placed on data, open data, and linked open data standards. This strategy has been reviewed with our members and Standards Council of Canada (SCC) and by the end of the fiscal year will be finalized and used as a tool to guide the Supercluster programs and projects.

Our Supercluster participated actively in the initiation of the Data Governance Standardization Collaborative (DGSC) driven by SCC with our Supercluster Chief Technology Officer appointed as a Member of the Technical Steering Committee as well as the Co-Chair of the Working Group – (WG3) Data Access, Sharing and Retention. Several of our Members have also become involved in the DGSC with one Member’s Chief Executive Officer (CEO) becoming the co-chair of the WG4 Data Analytics and Commercialization group.

3 2020-2021 Goals and Objectives

3.1 *Growing our Innovation Community*

In order to create a strong, collaborative innovation community we need to create a place that brings members together with the right kind of service and support. It needs to engage broadly with its public stakeholders and foster a sense of shared purpose and teamwork.

a) Building an Engaged Membership Base

Our Supercluster is founded on creating new innovations through ambitious collaborations among members and stakeholders. Building a highly engaged member community is a key success factor in creating the conditions for these collaborations.

Over the past two years, we have built and refined our process for engaging members and associates through ideation forums, thought-leadership sessions, networking programs and project development workshops. We plan to continue to build upon these successes to amplify the interconnections that will lead to more collaborations, grow the ecosystem and capitalize on opportunities.

Our priority for the 2020-2021 fiscal year is to further grow our member base through focused member recruitment that leads to the development of stronger project teams, new connections and champions to lead ambitious projects. This includes adding potential customers to project teams for user validation and building early market demand. It also includes targeting mid-sized technology members where we can catalyze growth off an established base business.

Some specific objectives include:

- Grow the number of industry partners (potential buyers for the project's digital products, services and technologies) that are participating in Supercluster projects.
- Actively recruit and grow the number of mid-sized technology members (defined as 100 – 499 employees) with the potential to become high growth enterprises through a catalytic innovation project.
- Support the development of ambitious, larger-scale project concepts.

b) Strengthening Operational Service Delivery

Building confidence with all stakeholders and providing a strong member experience is supported by the operations of our organization. Over the past two years we've set up a new project selection system. Through three technology leadership cycles and a capacity building cycle we have continually implemented improvements. We have also established our leadership team, core staff and organizational policies and procedures.

Looking to 2020-2021, our priority is to implement business process improvements supported by enterprise software solutions that allow our team to be more productive. Some specific objectives include:

- Implement a project and portfolio management system
- Enable simplified contracting for new projects
- Streamline claims process

c) Fostering Meaningful Engagement with all Stakeholders

We have established a solid membership base that includes industry, post-secondary and public sector partners. We are pleased to have the Government of Canada and the Government of BC as key stakeholders in our Supercluster. Building strong, positive relationships across these complex organizations is critical to our ongoing success and has always been one of our highest priorities. We also recognize that when we engage the broader public in innovation, we help reinforce the value of creativity, science, technology, design and the creation of a healthy society for life in the digital age.

A top priority in 2020-21 is to strengthen our provincial and federal government relationships, raise the profile of innovation in Canada and help people understand the world of data in the digital age. Some specific objectives include:

- Working with the Ministry of Innovation, Science and Industry to support the success of the Innovation Superclusters Initiative;
- Working with the Province of BC to help them succeed in their *Technology and Innovation Policy Framework*, *Clean BC* and other Ministry priorities;

- Sharing project stories with the general public to help people see how innovation can benefit them in their daily lives and communities; and
- Providing information that helps people adapt to a data driven world in a way that helps them live well in the digital age.

3.2 *Delivering Our Programs*

a) Technology Leadership

In the next fiscal year, we will continue to harness the ambition in technology projects, building interconnections among complementary projects and ramping up our investment commitments in multi-stage platform opportunities. We expect next year to be among our largest investment period adding another \$100-150 million of investment commitments.

These project investments will be a combination of new projects as well as follow-on investments into existing projects. Over the five-year period 2018-2023, we expect to co-invest in up to six platforms and 20–30 products and applications. Most of these investment commitments will be made by the end of 2020-2021.

For the coming fiscal year, our priority is to target the next set of investments around a Program Investment Strategy reflecting both the guidance from our Program Advisory Councils and the need to leverage the portfolio through complementary synergies:

Precision Health. Turning medical knowledge into a digital resource, connecting clinical research to healthcare delivery and applying immersive technologies into healthcare practice.

Digital Twins. Advancing Canada’s leadership in digital technologies associated with autonomy, demonstrating value of hyper-immersive environments and demonstrated quantum advantage.

Data Commons. Increasing the discoverability of data, creating collaborative data value chains and demonstrating distributed machine learning at scale.

Portfolio Leverage. Creating synergies across projects, invest incrementally in platform opportunities and extend the applicability of projects into different industry applications.

b) Capacity Building

Core to the Supercluster's mandate and success is ensuring that Canada's innovation ecosystem has the capacity, technology capabilities, infrastructure and talent to secure global leadership in the digital technology sector and provide social and economic benefits to Canadians.

With the guidance of a Program Advisory Council, the Capacity Building Program complements the technology leadership programs and is one of our vehicles used to bring together key stakeholders from across Canada and the regions, including industry, government, post secondary institutions and other organizations to build a diverse pool of job-ready, world-leading talent prepared for the emerging digital economy. The Province of BC is a strategic partner in this program.

The Capacity Building Pilot in 2019 was heavily oversubscribed with projects proposals from a wide range of areas including rapid competency assessment for underrepresented groups to secure employment to work integrated learning and digital skills development in rural communities. Our priority for 2020-2021 will be to refine the program strategy and approach to ensure it is relevant to future employers, identify priorities for urban and regional communities, and clearly outline anticipated outcomes before launching the next call for projects. Specific objectives include:

- Maintaining the momentum from the inaugural ecosystem consensus meeting held in July 2019 by taking an active role in working with the tech sector to position BC / Canada as a world leader in digital innovation.
- Working with members, ecosystem partners and stakeholders to identify ecosystem gaps and priority areas for capacity building.
- Increasing participation of Indigenous-led organizations and businesses in our activities, programs and projects.
- Designing initiatives to foster diversity and inclusion principles across the Technology Leadership Programs and Supercluster activities.

c) *Strategic Foresight*

Strategic Foresight is a place to explore technology, design and market trends shaping the opportunities and competition in the emerging digital economy. Insights are used to develop strategic initiatives capable of attracting new program investments.

In this fiscal year our priority is to establish foundational frameworks for assessing innovation opportunities in the digital economy, a strategy to support scaling companies and systems design for workforce development in the digital age. Specific objectives include:

- Competing in the Digital Age: produce a report for the Supercluster membership that provides a framework for understanding the evolution of the economy in the Digital Age, followed by the implementation of a regular scouting service that provides supplementary insights into technology, design and market trends.
- Scaling Companies: develop a new initiative focused on helping companies scale to \$100 million, \$1 billion and \$10 billion in revenues through consistent, platform driven growth in new product revenues.
- Rapid Skilling Systems for the Digital Economy: develop a new initiative to support the emergence of responsive, competency-based workforce development systems through standards development and systems design.

3.3 *Strengthening our Ecosystem*

For this fiscal year, the Supercluster will prioritize two outreach initiatives. The *International Outreach Strategy* is necessary to connect with global innovation networks while *Indigenous Engagement* is a critical for economic reconciliation and inclusiveness.

a) *International Outreach Strategy*

A priority for the coming year will be to build a comprehensive *International Engagement Strategy*. This strategy will establish a framework for building relationships in key innovation jurisdictions around the world. As economic leadership in the digital age is becoming concentrated in high growth macroregions around the world, our strategy will identify the most appropriate regions for us to concentrate our efforts in, starting with Cascadia. This will be complemented with an exploration of different regional opportunities in Asia (Far East, Singapore, India) and the EU (UK, Cap Digital in Paris) and more.

Key to our success is establishing partnerships with organizations with strong international connections already such as Export Development Canada, the Trade Commissioner Service and Invest in Canada. Working together, we can secure customer connections for our Members and project teams in markets outside of Canada and recruit innovation leaders from other countries to invest in globally competitive technology development centres here in Canada to strengthen our innovation leadership.

b) Indigenous Engagement

To ensure our core value of diversity and inclusion is realized, a priority focus for 2020-2021 will be *Indigenous Engagement* in order to strengthen our connection with Indigenous-led organizations, businesses, and innovators.

- **Engaged Advisors:** We will continue to develop our Champions Table and ensure that we have Indigenous representation on our Advisory Councils.
- **Project Development:** Through a workshop or gathering event, we will take a meaningful first step towards developing a pathway for Indigenous-led organizations and businesses to lead projects and become involved with those where there is a good strategic fit.
- **Indigenous Community and Business Organizations:** We will continue to explore ways where we can build an effective working relationship with key organizations who support and represent Indigenous communities and businesses.

3.4 Intellectual Property Strategy

Now that we have established the foundational elements for our IP Strategy, in the coming fiscal year we will focus on enhanced educational offerings on IP related issues which will include the following:

- Setting up an education portal where members can access credible content for IP related issues such as IP protection, exclusivity, freedom to operate and using prior art as a source of further ideas for innovation efforts.
- Organizing educational seminars on a regular basis and complementary workshops to support project proposal development.

We will also increase our member support in developing their strategic approaches to IP which will include:

- Exploring with members how they can improve the way they leverage their own IP;
- Exploring with members how they can leverage public domain IP and open source for collaborative development while understanding the risks that such an approach may present; and
- Finding opportunities to work with other clusters and the patent collective (once established) to advance member's interests and the competitive strength of the whole ecosystem.

Finally, we will focus on project support to help Supercluster consortia in:

- Finding the best model of IP distribution base on best practices for each type of project (product vs service vs platform) and in respecting the needs and practices of each consortium member;
- Establishing IP models that best fit collaborative and ecosystem development (such as open source and creative commons); and
- Increasing the amount of disclosure related to IP filings post-MPA execution in order to build a more robust IP registry.

3.5 Data Strategy

During the fiscal year 2019-2020 we have invested in implementing data management processes and procedures of our data strategy to ensure that operational data collection, storage and access is secure, confidential and compliant with the appropriate rules and regulations for the benefit of Supercluster projects and members.

In the next year we will focus on enhanced educational offerings on data-related opportunities and challenges, which include the following:

- Setting up an education portal where members can access credible content for data related issues such as legislation related from personal information, to risks associated with improperly managing data;

- Assembling information about global initiatives, practice and policies around data and digital assets management as a resource to members; and
- Organizing educational seminars and forums on a regular basis which will be complementary to the workshops around project proposals.

We will also increase our member support in developing strategic approaches to data which will include:

- Encouraging members to participate in national data-centric initiatives such as the DGSC to bring in industry specific perspectives and use case where standardization is needed;
- Encouraging members to understand and explore opportunities in monetization strategies related to data; and
- Sharing best practice around data generation and commercialization developed through participation in initiatives like DGSC.

Finally, as part of amendments to the MPA in project support we will address the following for each data-intensive project:

- Data Governance: establishing project-specific agreements on standardization of data actors, roles, security and privacy policies, ethics, residency and ownership.
- Data Collection, Access and Sharing: developing project-specific positions around semantics, ontologies, metadata, interoperability, aggregation, federation, access rights, data discovery, data traceability and data lifecycle management.
- Deriving Value from Data: developing project-specific positions on data processing such as data transformations, data processing pipelines, collaborative creation of data derivatives, distributed AI models and federated learning.

4 Budget

4.1 Total Program Outlook

The Supercluster business model consists of income streams from Members, the Province of BC and the Innovation Superclusters Initiative (ISI) Program. The funds are then applied towards:

- Project investments in our Technology Leadership programs
- Project investments in our Capacity Building program
- Corporate programs and management

Members contribute funding to the Supercluster that is matched by the ISI Program. For the five-year period ending March 31, 2023, the total committed funding from members and ISI is over \$300 million.

The following chart illustrates the source and uses of funds over the five-year period.

Table 1: Five-Year Program Funding Summary (\$ in millions)

	Total Members	ISI	Total
Technology Leadership Programs	\$162	\$127	\$289
Capacity Building Programs	\$14	\$12	\$26
Corporate Programs & Management	\$9	\$14	\$23
Total	\$185	\$153	\$338

4.2 Overall Budget 2020-2021

In the next fiscal period ending March 31, 2021, we anticipate several additional project selections through Technology Leadership and Capacity Building programs bringing our total investments up to \$170 million in cumulative investment commitments from both the Supercluster and its members. Of this total, the Supercluster will have co-invested up to \$80 million that will be leveraged against industry and member investments of up to \$90 million.

Table 2: Technology and Capacity Building Project Investment Summary (\$ in millions)

	Cumulative to March 2021
Industry Investment, Technology	\$85
Supercluster Co-Investment, Technology	\$70
Total Technology Projects	\$155
Industry and External Investment, Capacity Building	\$5
Supercluster Co-Investment, Capacity Building	\$10
Total Capacity Building Projects	\$15
Industry and External Commitments	\$90
Supercluster Co-Investment Commitments	\$80
Total Technology and Capacity Building	\$170

There is a variance between the time that projects are selected for co-investment and the time that funds are invested and disbursed by the Supercluster and Members. The disbursement of Supercluster co-investment funds is based on successful completion of project milestones that occur throughout the life of projects rather than being disbursed upfront on the date of the commitment.

Because of this timing difference, we anticipate \$29 million of revenue will be recognized in the 2020-2021 fiscal year, representing the amounts disbursed to Technology and Capacity Building projects, internal costs to support our programs and the corporate and management costs. Details of the revenue and expense forecast and budgeted are shown in Table 3:

Table 3: Statement of Revenue and Expenditures (\$ in millions)

	Budgeted Year ended March 2021	Forecast Year ended March 2020
Revenue	\$29	\$15
Technology and Capacity Building Programs	\$24	\$10
Net	\$5	\$5
Corporate Programs and Management	\$5	\$5
Revenue in Excess (below) Expenses	\$-	\$-

4.3 Risk Assessment and Mitigation Measures

With respect to the 2020-2021 Corporate Plan, we have assessed the risks together with the mitigation measures as follows:

Risk

1. The execution of Technology Leadership and Capacity Building Projects is slower than planned, resulting in a delay in Supercluster revenue and co-investment payments that may require re-profiling of ISI payments, the approval of which is not always guaranteed.
2. Our ability to demonstrate and communicate the value of a Supercluster innovation model impacts our ability to attract and maintain members.

Mitigation Measure

We have a project team, along with a steering committee, monitoring the projects. We are always open and transparent with all our Members and government partners to secure approvals as soon as possible.

While membership changes are expected, active engagement, outreach, sourcing additional members and continual communication must be implemented to mitigate this risk. We will be developing Member Success Plans for every member during the year.

Risk

3. Service levels and member satisfaction are compromised due to cumbersome processes around selection, contracting, claims and reporting on projects and slower-than-planned staffing.

Mitigation Measure

We have plans in place to build systems and methods to streamline project related processes. We also have prioritized recruitment and have established a cost-effective recruitment strategy to support our efforts.

4.4 Other Items

As required, we confirm that we have no amounts owing to the Crown.

5 Performance Measurement

5.1 Key Performance Indicators

An effective system of performance measurement and evaluation is critical for ensuring that we deliver value. It also helps us assess the effectiveness of the Supercluster’s program strategies and project investments in the context of building a global leadership position in digital technology and innovation. The key performance indicators (KPIs) we publish highlight priority metrics that help provide a snapshot of our progress. They are based on our development path and will evolve as our programs mature. See Table 4 below.

In Stage One, *Initiating Collaboration*, our focus was on building a diverse membership base to use as the basis for new collaboration partnerships, making our initial project investments in technology leadership and capacity building programs and building our team. As we enter Stage Two, *Accelerating Innovation*, we will be updating our KPIs to include metrics that track the impact of projects as they begin to complete development milestones. In the second half of the fiscal year, we will introduce metrics such as follow-on funding attracted, new product launches, new product revenue generation and more.

[Table 4. Performance Indicators](#)

Key Performance Indicator	2019-2020		2020-2021
	Target	Forecast	Target
<i>Membership Development</i>			
# of organizations engaged	308	450+	450
# of members	33	36	40
# of associates	275	420+	420+
# of members/associates in projects	40	37	52
<i>Project Investments in Our Programs</i>			
# of EOIs received for all program calls	75	100+	75
# of contracted/pending project investments	--	27	40
Cumulative project investments awarded	\$116M	\$106M	\$170M
Total industry investment	\$60M	\$62M	\$90M
Supercluster co-investment awarded	\$56M	\$44M	\$80M
<i>Employee Engagement</i>			
Complete employee engagement survey	1	1	1

5.2 Progress Summary and Guidance for Fiscal Year 2020-2021

In membership development, we are exceeding expected progress with 450 organizations engaged which is already close to our five-year goal of 500 organizations. At this point, our goal is not to increase the number of organizations but to focus our recruitment on increasing customer involvement in projects (those that will be in a position to buy the technology under development) and getting medium-sized enterprises engaged in high impact, ambitious projects (to help with scaling companies).

In project investments we are behind our expected progress. This is due to running three cycles instead of four in the first two years and one less Capacity Building cycle than expected and scaling back the size of our project investments in Cycle 2 and Cycle 3 as we worked on optimizing our project selection process.

Going forward we are looking to make significant investments around more ambitious projects for Cycles 4, 5 and 6. We expect a number of these investments to be follow-on investments for projects that have demonstrated early success and excellent potential for scale-up. Thus, this is reflected in the growth from \$106 million this year to a forecast of \$170 million in project investments.

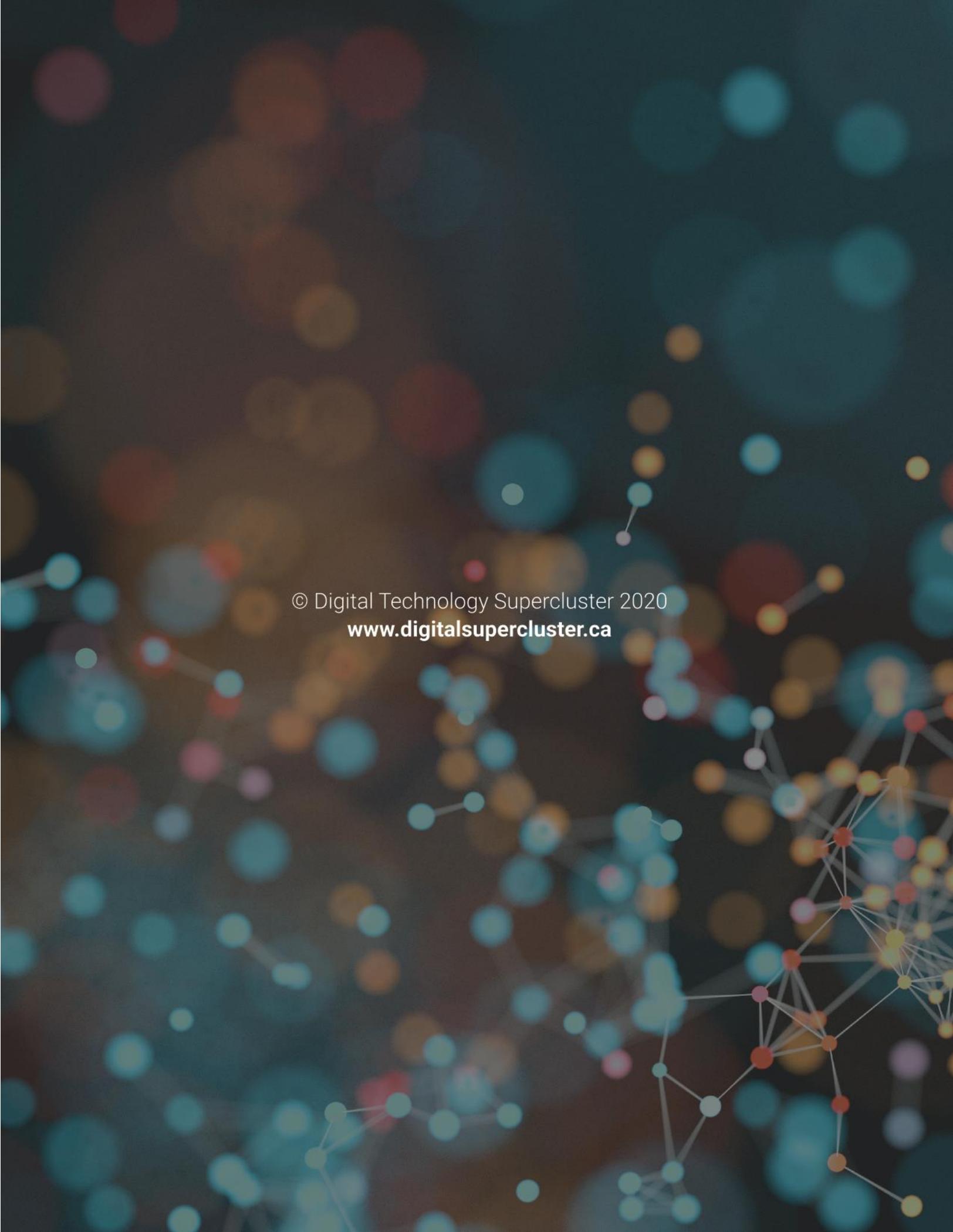
Finally, as we close off the first stage of development, it is worth looking back to the February 2018 Supercluster announcement and remembering that two short years ago none of this existed. In that time, we have initiated a new not-for-profit innovation enterprise with a full Board of Directors, leadership team and staff who have developed the foundational policies and procedures required to ensure good governance.

At December 2019 we have 36 Members and over 400 Associates engaged in our Supercluster community and we have catalyzed investment of over \$50 million in our first 21 projects. With another investment cycle to be completed in the spring of 2020, we are beginning to see evidence of innovation partnerships forming in parallel with our project development work. We have established a promising foundation for collaboration. Our accomplishments to date, and those that we anticipate in the months ahead, are only possible because of the tremendous commitment, curiosity, candor, practicality and energy of a very large ecosystem of individuals and organizations. There is a long list of those who richly deserve our thanks, chief among them are:

- the Government of Canada for their vision and courage to launch the ISI;

- the Province of BC for supporting our Supercluster and strengthening our Capacity Building Program;
- our Founding Members who stepped forward to make significant commitments to an organization that had yet to be formed;
- the staff at ISED who have provided guidance, direction and support as, together we have evolved this organization to capture the exciting opportunities that we know are within our grasp;
- our Board of Directors who have been on an intense journey with our staff starting up this new innovation enterprise; and
- our team of staff for their endless commitment to our Members and to the potential we know exists in our current projects and those yet to come.

As we move into Stage 2, we are eager to unleash the talent, energy and aspirations of our Supercluster and Members to accelerate innovation in the pursuit of Canadian led, global opportunities in digital technology.

The background features a complex network of nodes and lines. The nodes are represented by small, semi-transparent circles in various colors including light blue, teal, orange, red, and pink. These nodes are interconnected by thin, light-colored lines, creating a web-like structure that is more densely packed on the right side of the image. The overall aesthetic is futuristic and digital, set against a dark, gradient background that transitions from deep blue to black.

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