



DIGITAL TECHNOLOGY SUPERCLUSTER



INVESTMENT REPORT JUNE 2021

INTRODUCTION

Investing in digital transformation and innovation

With the support of our Members, the Digital Supercluster has grown to become a strategic asset for Canada, helping Canadians through the pandemic, tackling some of industry and society's most significant challenges, and creating digital innovations and solutions in areas where Canada can lead the world.

Founded on collaborative innovation and co-investment, our model is focused on developing, deploying and scaling Canadian-made technologies and building Canadian-made intellectual property. We complement these investments with capacity building and inclusion initiatives using the same model to inspire industry engagement while providing pathways for industry to access skilled Canadians and opportunities for Canadians to excel in our digital world. We engage Indigenous peoples, women, and groups under-represented in digital positions in both skills and leadership development to advance equitable access to opportunities and confirm our commitments to equity, diversity and inclusion.

In our first three years, we created a portfolio of digital innovations worth more than \$300 million while growing a pan-Canadian innovation community of nearly 1,000 organizations. We attracted industry leadership, community engagement and momentum resulting in the full commitment of our initial fund by March 31, 2021 – two years ahead of schedule. We have also met or exceeded our five-year targets well ahead of plan.

COVID-19 highlighted our ability to adapt and move quickly, bringing innovative industrial teams together and solving pressing issues in a short period. In just two weeks, we designed and launched our COVID-19 program, mobilizing Canadian industry, public sector, academia, innovators and non-profits to develop digital solutions to tackle challenges emerging and evolving through the pandemic and beyond. Industry responded, submitting over 450 applications valued at \$1.4 billion in potential investment. Ultimately, we selected the strongest 33 projects, many of which delivered immediate benefits to Canadians while building a strong and resilient foundation for advancing the health and safety of Canadians and Canada's economic recovery.

From our inception in 2018, industry has driven innovations faster, stronger and with more impact than ever imagined. Our model, our Members, our momentum and our partnership with the Government of Canada combined to create the foundation for an innovative, strong and prosperous future for Canada.

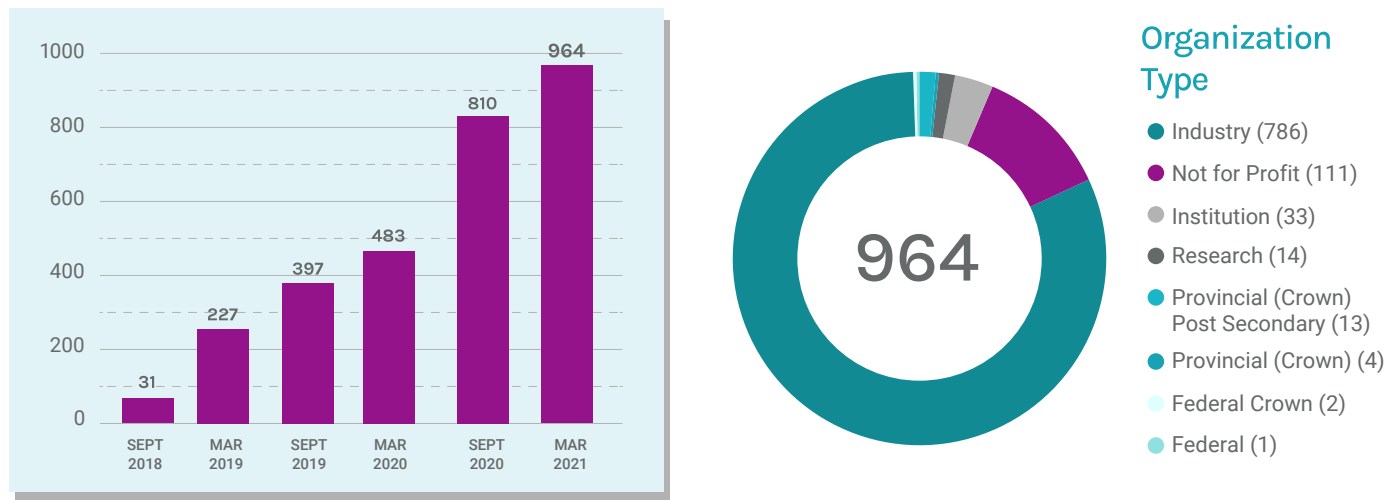
This promise and potential are recognized by the Government of Canada in "Budget 2021" with a new \$60 million commitment for the Innovation Superclusters Initiative, allowing us to expand our impact, leverage our successes and drive new opportunities to accelerate Canada's journey through COVID-19 and on to prosperity.

GROWING AN ENGAGED, DIVERSE INNOVATION COMMUNITY

Our Innovation Community

In less than three years we have grown our innovation community from 31 to nearly 1000 Members and Associates from across Canada. With a strong foundation in B.C, now nearly half of our members are from other parts of Canada, including Canada's northern territories and seven First Nations communities. As an industry-led program, private sector organizations account for 80 percent of our Members and Associates.

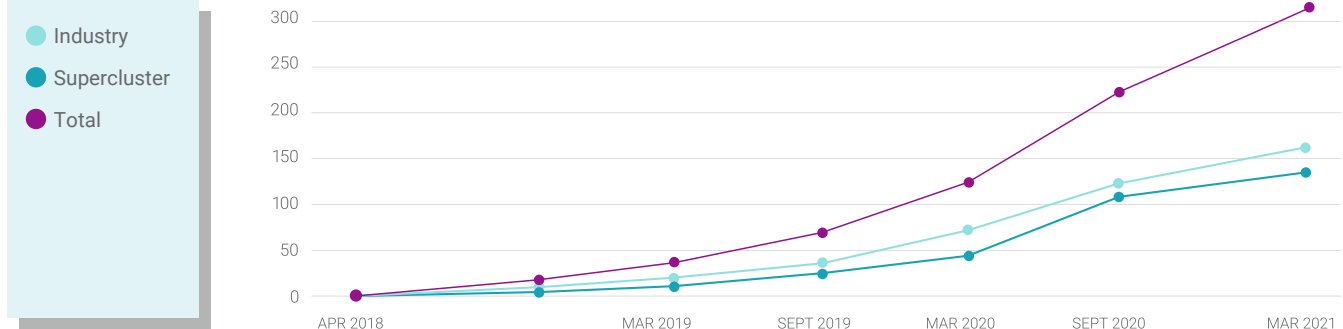
Membership Growth



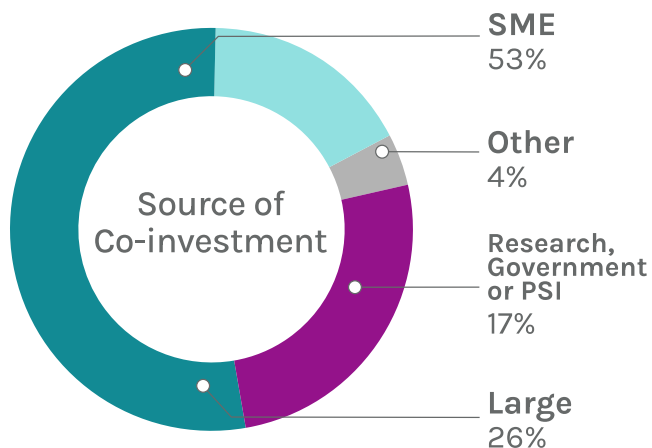
Accelerating Investment to Fuel Canada's Digital Economy

Since our last investment report in October 2020, we have grown our portfolio from \$200 million to now over \$300 million. After completing the call for projects in our COVID-19 program in July, we launched and completed our Cycle 4 call for Technology Leadership projects, committing \$30 million across seven new projects and leveraging nearly \$50 million of industry investment. At the same time, we completed our second call for Capacity Building projects, committing \$10 million and leveraging nearly \$25 million of partner investments.

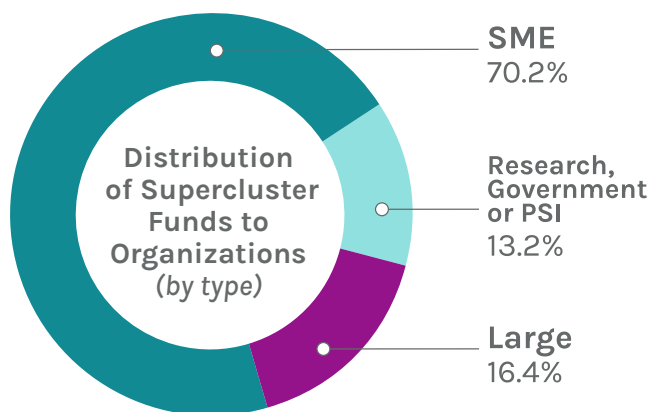
Investment Profile



The majority of all co-investment (53%) coming into our projects is from SMEs. Large companies constitute 26% of co-investment and the remaining co-investment comes from academic and research organizations, government agencies and not-for-profit organizations.



In terms of our Supercluster’s co-investment, seventy per cent (70%) of our investment funding goes to SMEs.



Over 350 organizations are participating in our projects with the average project consortia comprised of eight organizations. Industry has shown its confidence and commitment to our collaborative innovation model, growing our average project size from \$4 million to over \$12 million in our Technology Leadership projects and from \$700,000 to over \$3 million in Capacity Building projects.



COVID-19 SUPERCLUSTER PROJECTS

COVID Cloud

As COVID-19 strains continue to spread globally, there is still an urgent need to understand the genetics of the virus and to track emerging variants that result from viral mutations. Large volumes of genomic sequencing data are being generated to help understand, predict and treat COVID-19. However, this biomedical data is not shared widely and quickly enough.

COVID Cloud has developed an “all-in-one solution” to enable key data to be shared real time using global industry standards and providing scientists and decision makers with better information about COVID-19.

The team has made great progress this year. For example, COVID Cloud is now part of Genome Canada’s national portal to detect, diagnose and anticipate the spread of new variants and related data from the National Microbiology Laboratory and public health labs.

DNASTack is also working with the Government of Ontario to increase the province’s ability to monitor variants. The Toronto-based organization has created an interactive dashboard, including an automated algorithm that estimates the rate of transmission of all variants as quickly as the data is received – triggering a software alarm when it appears there could be an outbreak.

INVESTMENT AREAS



Data Commons

Providing new digital solutions by aggregating data resources into shared platforms for exploration, machine learning and innovative application development.



Digital Twins

Using digital technologies to create virtual production environments for real-time operations management, simulation, modelling and training.



Precision Health

Establishing Canada as a leader in data-driven health innovations that support disease prevention, early diagnosis and personalized treatment.



COVID-19

Focused on unlocking solutions to protect the health and safety of all Canadians and our economy through the development, deployment and scaling of digital technologies



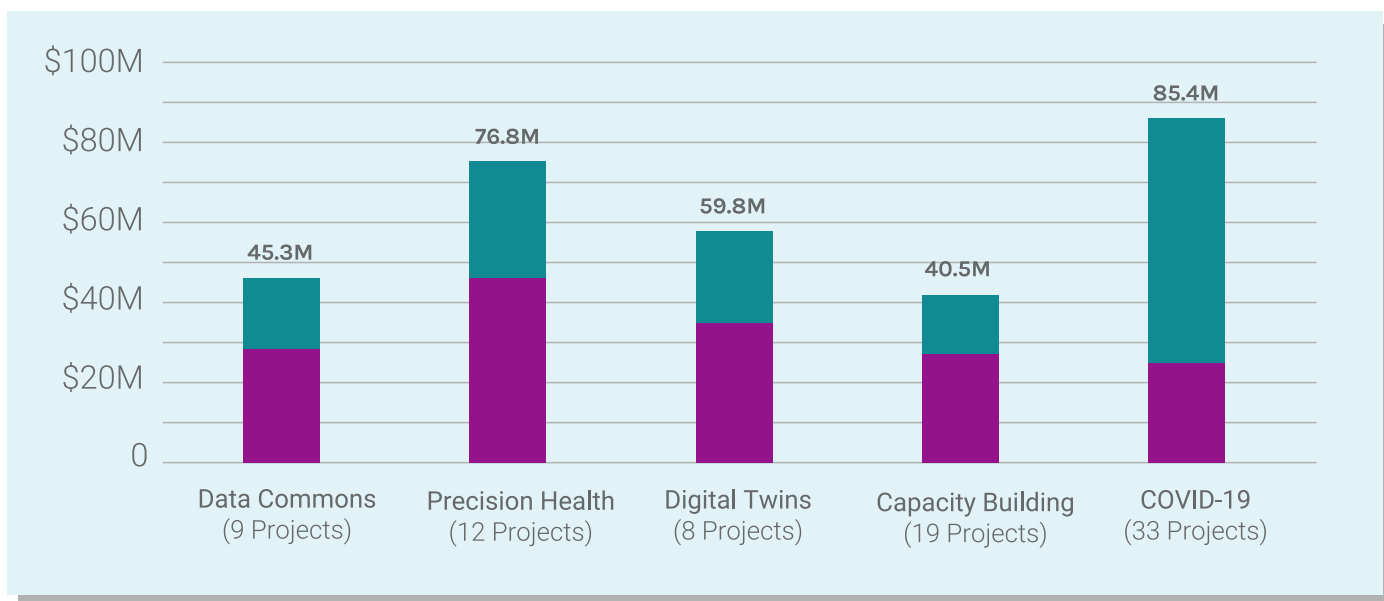
Capacity Building

Partnering with employers, educators and community organizations to build job ready, world leading talent

Cumulative investment to March 31, 2021

As of March 31, 2021, we have 82 projects in our portfolio with total investment commitments of \$308 million, attracting \$166 million from industry consortia. Total investment by the Supercluster across our full portfolio is \$142 million.

Our COVID-19 program accounts for more than 40 per cent of our total investment. The program was launched to accelerate industry's investment in digital solutions related to COVID-19 challenges.

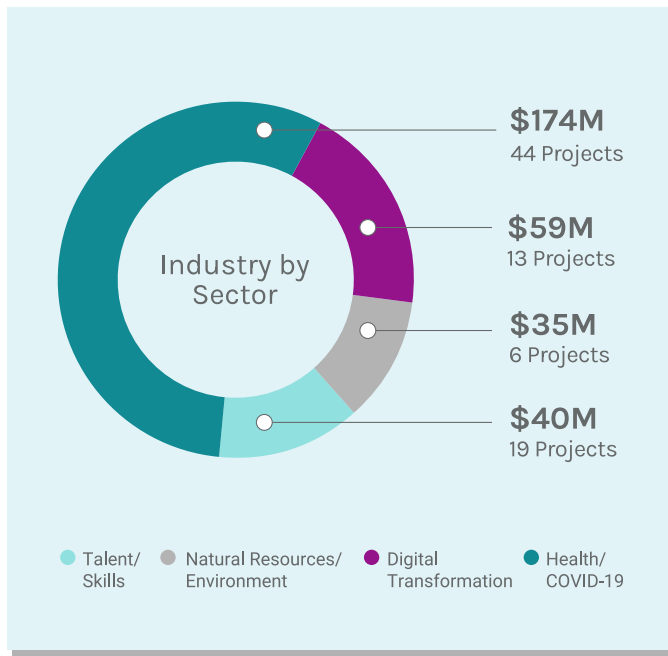


Member Co-Investment

Supercluster Co-Investment

OUR PORTFOLIO

In the span of one year, our portfolio tripled from \$100 million to more than \$300 million, driven by the speed and agility with which our Members responded to the COVID-19 crisis. In the last quarter, we committed over \$110 million of new investment across 18 new technology and talent development projects. This closes our investment mandate for our first five-year plan.



Our projects are delivering digital solutions to some of society and industry's biggest challenges. Artificial intelligence and machine learning complement foundational capabilities in digital trust, augmented reality and predictive analytics, creating both deep and broad technology domains across our portfolio. This technology intensity and diversity has led to our project teams developing more than 100 products and services and creating 350 intellectual property (IP) assets.



Data Commons

SUPERCLUSTER PROJECTS

Protecting Our Oceans

Food security, regional economies and the health of the world's marine ecosystems are at risk due to illegal fishing. This project uses machine learning, artificial intelligence and data visualization to identify, track and apprehend illegal fishing vessels in order to protect our global fisheries and marine ecosystems.

On February 24, 2021, MDA announced that it was awarded a three-year contract with the Government of Canada Department of Fisheries and Oceans and Defense Research and Development Canada to use satellite technology to detect vessels engaging in illegal, unreported and unregulated (IUU) fishing. This project is a related initiative that aims to develop a solution that will recognize vessels that fish illegally, deter, and blacklist them and ultimately prosecute the owners to protect our global fisheries and marine ecosystems. This technology is expected to further enhance MDA's maritime platform offering to better enable their customers to protect the environment, food supply chains, jobs provided by the ocean, and help deliver information to increase border security and tackle human rights violations.

Capacity Building Program

Our Capacity Building portfolio is comprised of 19 projects and investments of \$40.5 million (\$12 million from the Supercluster), all focused on the development of in-demand skills for the digital world.

COVID-19 Program

Our COVID-19 portfolio is comprised of 33 projects and total investment of \$85 million (\$60 million from the Supercluster). All projects have contracts in place.

Technology Leadership Program

Our Technology Leadership portfolio is comprised of 29 projects and total investments of \$182 million (\$70 million from the Supercluster). Not all projects have been publicly announced.

Support for SMEs

Our Supercluster is dedicated to supporting SMEs. SMEs comprise over half of the organizations participating in our projects, underscoring both the importance of our support and the enthusiasm, ability and effectiveness of SME engagement in a collaborative innovation model. These SMEs are actively working with customers, large enterprises, academia and government to solve some of the most challenging issues across a variety of industries.



Data Commons

SUPERCLUSTER PROJECTS

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.

In December, Terramera completed the installation of customized automated climate-controlled growth chambers. These growth chambers are uniquely retrofitted for experimental use, including a wide-ranging weather simulator to accurately replicate on farm conditions and a liquid handling robot to rapidly screen active ingredients with Terramera's Actigate™ technology. The project team is currently integrating an image compression module (Metaspectral) and machine vision and robotic navigation algorithms (Terramera-SFU) to automate and enhance plant segmentation and measurement processes. These incredible growth chambers are poised to revolutionize research and testing for crop protection products by reducing trial time and strengthening the connection between lab and farm.