

The MaRS logo is a blue circle with the text "MaRS" in white, positioned in the upper left corner of the page.

MaRS

Impact Report

SUMMER 2018



MaRS Discovery District in Toronto is North America's largest urban innovation hub.

Our purpose is to help innovators change the world. MaRS supports promising ventures tackling key challenges in the way we work and live as they start, grow and scale. In addition, the MaRS community fosters cross-disciplinary collaboration to drive breakthrough discoveries and new solutions to be adopted in Canada and beyond, growing our economy and delivering societal impact at scale.

MaRS Discovery District

101 College Street, Suite 401
Toronto, Ontario M5G 1L7

T: 416 673 8100

F: 416 673 8181

For more information, please visit:
marsdd.com

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Message from the CEO



Since 2005, MaRS has been supporting Canada's most innovative ventures, helping entrepreneurs bring new, life-changing technologies to global markets.

Today, as the disruptive potential of technologies like artificial intelligence and blockchain become clear, this work is more important than ever. It's vital for this country's future prosperity that made-in-Canada businesses are at the forefront of this global wave of change.

As North America's largest urban innovation hub, MaRS is uniquely positioned to help growing ventures enter new markets, generate exports and create good jobs for Canadians.

The companies we support are deploying technologies to create cleaner water, improve surgical outcomes, make recruitment fairer, expand access to financial services and much more. With a view to improving the lives of all Canadians, we work with ventures in every province of Canada and strive to increase the representation of groups such as women and ethnic minorities in this country's tech sector – because innovation's benefits should accrue to everyone.

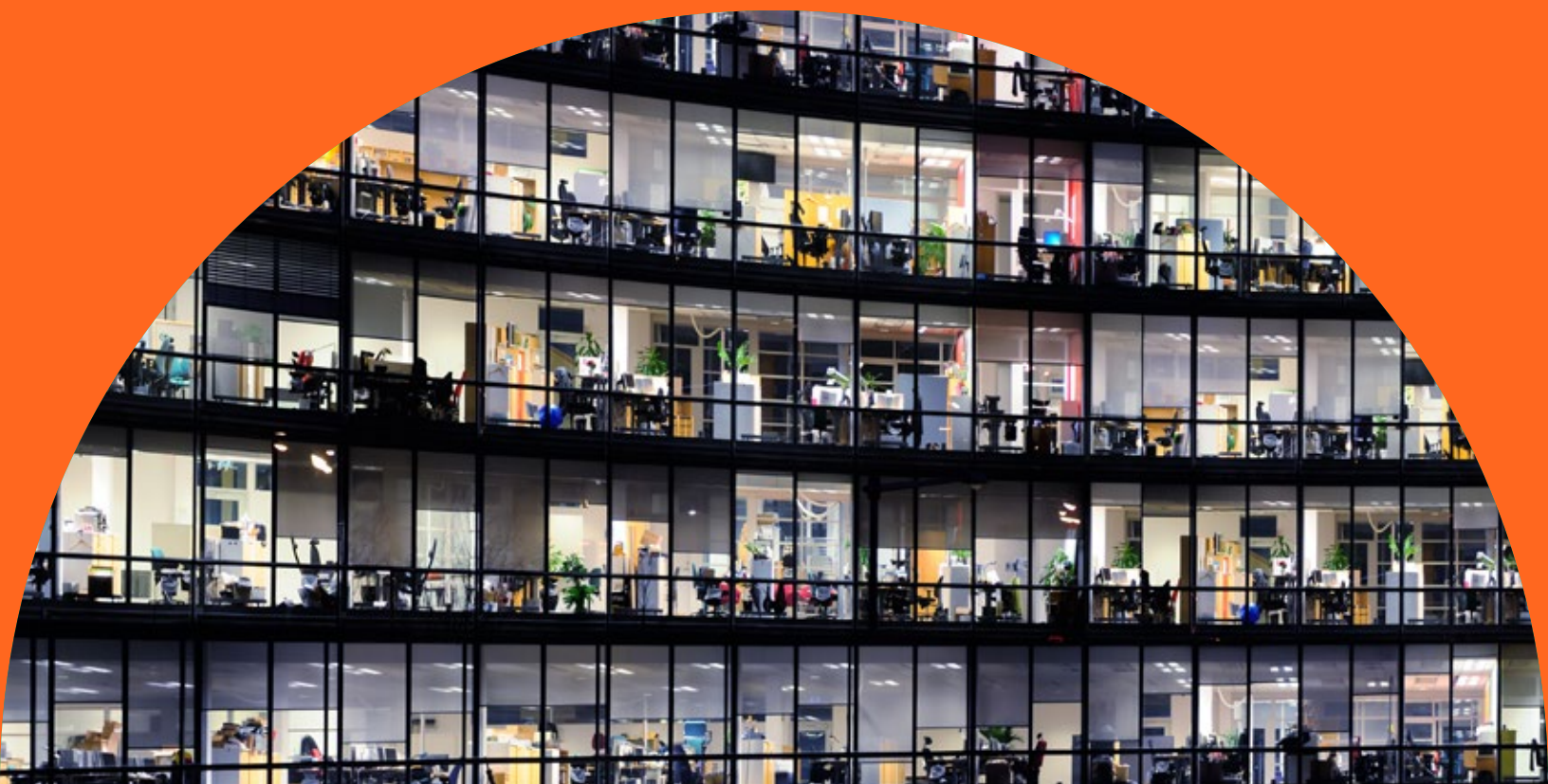
This report is our first attempt to take stock of how the entire MaRS community – MaRS itself, the ventures we support and the tenants in our building – impacts the economic and social fabric of Canada.

There is much to be proud of. The companies we support have generated billions in revenue, created thousands of jobs and are attracting record levels of investment. And as an added indicator of positive momentum, for the first time in my career, we are seeing the North-South brain drain reverse, with Toronto's rising star as a tech leader drawing the best and brightest to this country from abroad.

We have built a solid foundation, but now is not the time to ease up. We have to press our advantage and build today's innovative Canadian businesses into the global leaders of tomorrow.

A handwritten signature in black ink, appearing to read 'Yung Wu', with a stylized flourish at the end.

Yung Wu,
CEO, MaRS Discovery District

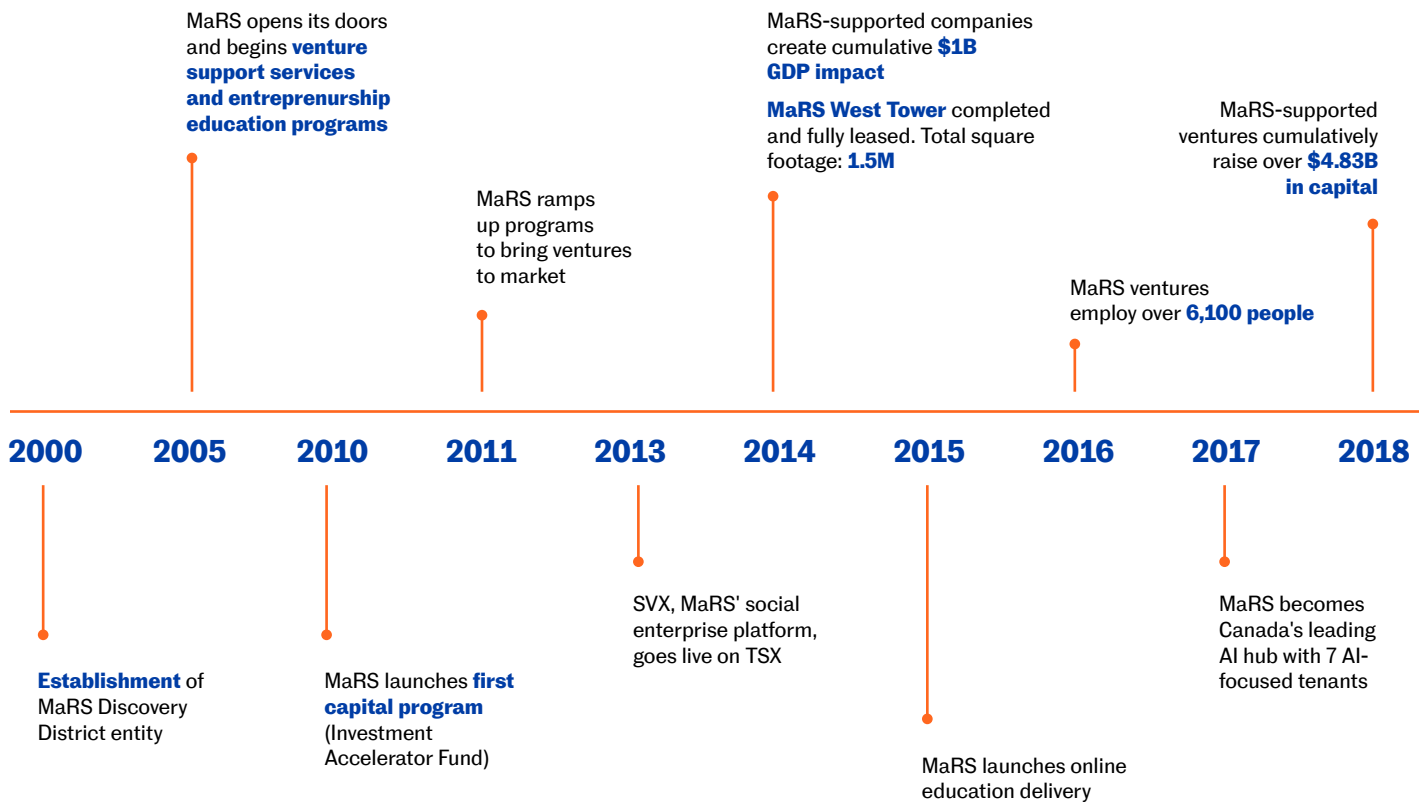


MaRS on a mission

“Scale matters, and as **North America's largest urban innovation hub**, MaRS has a special responsibility and leadership role to play.”

— **YUNG WU**, *CEO of MaRS*

Mission from MaRS



The information revolution that bridged the 20th and 21st centuries has, in just a few short years, changed the ways that people work and live. In 2005, recognizing the need for Canada to be at the forefront of this change, visionaries opened the not-for-profit MaRS Discovery District at the heart of Canada's largest—and one of the world's most culturally diverse—cities. The goal: to develop a world-class innovation district dedicated to bolstering the country's social and economic prosperity through its science, technology and social innovations, and to help make the world a better place for the future.

The growing trends and movements of talent and capital in the tech sector in recent years have been well documented. From the accelerated pace of innovation and capital flow¹ to changing investor preferences² to an increase in innovators prioritizing social impact,³ the landscape of technology and innovation is changing.

MaRS is leading the way in building an urban innovation cluster: a place to connect the entire entrepreneurial supply chain and address the blockages that prevent ventures from reaching their potential. The MaRS Centre supports a carefully curated ecosystem of approximately 150 tenants, including ventures, venture capital firms, partner research organizations and Canadian headquarters of prominent global tech companies.

Beyond its space and community, MaRS has pioneered programs to support both innovators and innovation adopters.

From one-to-many education programs to one-to-one advisory services, MaRS works directly with entrepreneurs, providing a suite of offerings that connect MaRS-supported ventures with talent, markets and capital. These MaRS venture programs support over 1200 high growth Ontario companies. Programs and initiatives

at MaRS also work with market forces—including governments, corporations and consumers—to pilot and change regulations that increase the capacity of and access to ventures' solutions to big societal problems.

This report aims to highlight the social and economic successes of MaRS-supported ventures and MaRS programs, and to enable action for MaRS and its stakeholders based on the best available data. Together, these elements set MaRS and its partners on a path to improving society for future generations and making a difference beyond Canada's borders.

1. BDC. 2017. [Canada's Venture Capital Landscape: Challenges and Opportunities](https://www.bdc.ca/EN/Documents/analysis_research/venture-capital-landscape-paper-en.pdf). Available at: https://www.bdc.ca/EN/Documents/analysis_research/venture-capital-landscape-paper-en.pdf 2. YMaRS Discovery District. 2018. [Market Momentum: Impact Investing & High Net Worth Canadians](https://impactinvesting.marsdd.com/wp-content/uploads/2018/07/HNWI-Report-Final-Copy-For-Release.pdf). Available at: <https://impactinvesting.marsdd.com/wp-content/uploads/2018/07/HNWI-Report-Final-Copy-For-Release.pdf> 3. Fast Company. (2017). [As Wealthy Millennials Take Control of Family Fortunes, Impact Investing is Set For a Big Boost](https://www.fastcompany.com/40466206/as-wealthy-millennials-take-control-of-family-fortunes-impact-investing-is-set-for-a-big-boost). Available at: <https://www.fastcompany.com/40466206/as-wealthy-millennials-take-control-of-family-fortunes-impact-investing-is-set-for-a-big-boost>

Economic Impact

\$3.16_B

MaRS-supported ventures
cumulative revenue since 2008

\$4.83_B

MaRS-supported ventures cumulative
capital raised since 2008

\$11.67_B

MaRS-supported ventures
GDP contribution to date since 2008

12,800₊

Jobs created by MaRS-
supported ventures in 2017

88%

Of ventures report MaRS has
had positive impact on their
business in 2017

Social Impact

17_M

Lives impacted through
MaRS programs

70%

Of MaRS ventures
have social mandates

\$207_M

Capital mobilized for social
good by MaRS through partners
and financial platform

Ecosystem Impact*

\$6.9_M

Ad equivalency value
for MaRS and
related ventures

150_k

Event attendees in
the MaRS Centre

124

Global media
mentions of MaRS

203

Media mentions
for MaRS ventures

**Since April 2017*

Investment Impact

\$931_M

Capital attracted
and follow-on funding

\$112.4_M

MaRS-affiliated funds, capital
under management

188

Investments placed
by MaRS-affiliated funds

Blueprint to the MaRS model

How MaRS Grows Ventures

MaRS offers tailored services to connect entrepreneurs with the talent, capital and markets they need to grow and scale. MaRS focuses on equipping the highest potential high-growth companies with the tools and connections they need to thrive and grow in our global knowledge economy, and works with governments, corporate Canada and global multinationals to accelerate the adoption of their technologies by the market.



Venture Education

To commercialize, innovation entrepreneurs require business savvy and knowledge. MaRS provides entrepreneurship education programs and services through resources, toolkits and events geared toward every stage of the startup journey.



Connecting Ventures to Talent

Innovative ventures rely on hiring the right talent at every stage of their development. MaRS' talent services and platforms connect ventures with talent through job boards, one-on-one advisory services, a peer-to-peer community and access to provincially supported executive placement programs.



Connecting Ventures to Customers

MaRS-supported ventures are actively connected to customers in both Canadian and international markets. MaRS sets the stage for its ventures to succeed in global markets by providing market intelligence that informs the tailoring of products, offering public relations training and media placement, and securing partnerships and location-based support in international markets.



Connecting Ventures to Capital

Through MaRS, investment-ready ventures gain access to a vast and diverse network of investors across capital stages and jurisdictions. Based on a venture's readiness, MaRS makes relevant introductions to key investors. For investors, MaRS provides a crucial link to a pipeline of new, innovative and viable companies that match their interests.

Blueprint to the MaRS model

How MaRS Grows Markets

In addition to helping ventures to scale, MaRS plays a role in addressing the adoption of innovation by the market. MaRS makes it quicker and easier for governments, established businesses and community partners to test, buy and integrate new technology. Increasing the rate of technology adoption improves ventures' efficiency and competitiveness, enabling them to more quickly gain revenue and address a big market opportunity.



Innovation Capacity Building

MaRS helps organizations, communities and individuals to develop, adapt and strengthen the skills, abilities, resources and understanding they need to adapt and innovate in a rapidly changing world.



Data Access and Collection Innovation

Through managing challenges and other opportunities in the innovation community, MaRS helps make improvements to the collection, processing, analysis and dissemination of data, increasing its accessibility and value.



Business Model Innovation

MaRS drives initiatives that create new ways of doing business, as well as more economic and social value, allowing organizations or community collectives to enter the market, scale and sustain their impact.



Policy and Regulatory Innovation, Alignment and Connection

MaRS convenes, engages, facilitates, moderates and aligns stakeholders and citizens to remove silos and break barriers between organizations and to create incentives that support innovation in modern regulations and policies.



VENTURE PROFILE



Paul Webber,
CEO



“The MaRS Embedded Executive Funding Program was extremely valuable to Perimeter. This program allowed us to recruit experienced talent that we would otherwise not have been able to engage at an early stage.”

Perimeter Medical Imaging

Perimeter's OTIS is an optical tissue imaging system that provides clinicians the ability to visualize and evaluate subsurface tissue microstructures in real time, during clinical procedures.

MaRS Services Utilized

- Advisory services
- Embedded Executive Funding Program
- Market Intelligence
- Connections to capital
- Connections to market



Economic Impact

“Innovative ideas come from individuals who see a problem and find a different way of dealing with it. Some of these innovations make major differences.”

— **DR. JOHN EVANS**, *Founder, MaRS Discovery District*

Economic Impact of MaRS Ventures

Scaling high-growth ventures fuels economic growth and social prosperity in all global advanced economies. From 2000 to 2009, scaling ventures made up only 18% of Canada's growing companies, but created nearly 47% of new jobs.⁴

MaRS' primary economic contribution comes from the growing and scaling ventures it supports. In all of the direct measures of economic activity—including employment, revenue and raised capital—MaRS-supported ventures have gained incredible ground.

MaRS-supported ventures **employed more than 12,800 people in 2017**, compared to an estimated 2,400 people in 2013. This growth is indicative of a movement of talent into the tech sector, as both MaRS-supported ventures grow and MaRS' portfolio of ventures shifts and adapts to the changing innovation landscape.

MaRS-supported ventures **generated over \$4.83 billion in revenue between 2008 and 2017**, with as much as half of

sales coming from exports—a testament to the strength of the companies' abilities to scale globally.

MaRS-supported ventures **helped grow the economy by directly and indirectly contributing \$11.67 billion to the gross domestic product—and had tax contributions totaling \$3.21 billion—in the eight years leading to 2017.**

4. Ontario Scale-Up Vouchers Program. N.d. Available at: <https://ontarioscaleupprogram.ca/>

VENTURE PROFILE



Rob Douglas,
Chairman and CEO



"I believe deeply in the innovation ecosystem in Toronto, and MaRS is the epicentre of the ecosystem. MaRS is a special place that helps advance the community."

BioConnect

BioConnect provides an enterprise biometric authentication and security platform to establish stronger trust in verifying a person's identity across physical, IOT and digital applications.

MaRS Services Utilized

- Advisory services
- Connections to capital
- Connections to customers
- Mentorship to secure grants and relationships

4 million

Identities managed

900

Customers

62

Employees

Venture Feature



“Lendified has harnessed the combined power of banking experience and expertise with instant insight from data and automation to give Canadian small businesses, the lifeblood of the Canadian economy, access to critical operating capital conveniently and swiftly.”

– Roy Kao, Senior Advisor, MaRS Venture Services

Lendified: Lending for Entrepreneurs

It's no secret that traditional financial institutions court small businesses for their day-to-day banking needs, but are far slower to lend them money. Traditional lenders tend to view small businesses as risky, leaving 80% of Canadian entrepreneurs to tap into their personal finances to fund their businesses.

Toronto-based Lendified tackles this issue by analyzing thousands of data points from a variety of sources, including the applicant's bank transactions, and approving and delivering loans between \$5,000 and \$150,000. This process is powered by the Lendified Platform, which the company offers as a software-as-a-service solution to financial institutions across North America.

Through a simple online process, business owners can qualify for up to \$150,000 in minutes, receive a free quote with a competitive rate and receive funding in as little as 48 hours.

Lendified has delivered over \$35,000,000 to more than 600 Canadian companies. Most of its borrowers are mainstream, main street businesses that have been in operation for three years and have revenues of \$500,000 to \$1 million. Through these loans, Lendified enables small businesses across Canada to take the next step and grow. Based on third-party valuation, the economic impact of Lendified is multiplied by 2.5 times in the economy.

As a company that straddles two sectors—finance and digital technology—Lendified faces complex technical and business questions. Its executives particularly value the ability to connect and collaborate with a great community of ventures and investors. Through participation in workshops, panels and events curated by MaRS Venture Services, Lendified can engage entrepreneurs who face the same challenges and opportunities as they do.

MaRS Services Utilized

- Advisory services
- Connections to capital
- Connections to customers
- Mentorship to secure grants and relationships

\$35M+

Provided to 600 small businesses,
helping support an estimated

684 jobs

Program Feature

“As a neutral third party, MaRS had the credibility to bring together groups that fundamentally disagree and get them to search for common ground.”

– **Carleton Grant, Director, Policy and Strategic Support**
Municipal Licensing & Standards, City of Toronto

Sharing Insights: A Look Into Policy Change in Peer-to- Peer Platforms

The rapid rise of the sharing economy and peer-to-peer applications that allow individuals to maximize utility from assets such as housing and vehicles has disrupted the traditional players who provide these services. While these new platforms can reduce costs for consumers and increase competition, they divide public opinion and often fall into the grey zone of by-laws and regulations. Municipal governments are being called upon to find a way to turn conflict to compromise and balance the competing demands of innovators, incumbents and inhabitants.

The Sharing Economy Public Design Project, a partnership between MaRS Solutions Lab, the Province of Ontario and the City of Toronto, looked at regulations from the perspective

of users to gain a deeper understanding of the challenges the city faced. The City of Toronto collaborated with MaRS to facilitate the co-design process behind new regulations aimed at supporting the economic benefits of the sharing economy, while creating a more level playing field for competitors and installing safeguards to protect users.

The co-design process reaches beyond traditional stakeholders to ensure that diverse perspectives are represented and leverages expertise from the academic, innovation and political worlds to inform interventions.

Direct capacity built through involvement in co-design:

200+

Total impact on peer-to-peer platform users in Toronto:

840,000+

Timeline

Undertake research from jurisdictions faced with similar challenges to gather key learnings

Co-creating a vision using bespoke tools to simulate potential regulations in various scenarios and subsequent discussion in small, facilitated groups

Adoption of "A New Vehicle-for-Hire Bylaw to Regulate Toronto's Ground Transportation Industry"

Interviews with 130 users, including taxi drivers, people on ride-sharing platforms and others directly affected by disruptive technologies

Release of recommendations and the white paper publication: *Shifting Perspectives: Redesigning Regulation for the Sharing Economy*



Capital Gap

“Early-stage capital is the life blood for promising entrepreneurs – it kickstarts making their vision become a reality, and the MaRS venture capital platforms are making a difference to entrepreneurs at the stage where capital remains in the shortest supply.”

— **BARRY GEKIERE**, *Managing Director, MaRS Investment Accelerator Fund*

Closing the Capital Gap

While there have been advances toward closing the financing gap for early-stage companies, Canada continues to face a systemic challenge in scaling firms to compete globally due to undercapitalization.⁵

MaRS-supported ventures raised \$4.8 billion in cumulative capital between 2008 and 2017.

MaRS houses several Canadian venture capital firms in the centre, builds partnerships with investment enterprises, actively promotes investment-ready ventures to investors and has built a platform for socially minded investors.

Capital managed and attracted

MaRS-affiliated funds aim to address capital gaps at strategic points throughout the growth of a company, targeting specific gaps in financing for early-stage companies (MaRS IAF), social impact ventures (MaRS Catalyst Fund), female entrepreneurs (StandUp Ventures) and clean technology companies (ArcTern Ventures), among others.

MaRS' six affiliated funds have invested and managed nearly \$120 million in capital and, in turn, have generated follow-on funding of nearly \$1 billion to date. In other words, for every \$1 MaRS manages, another \$9 follows from other sources, a good sign that MaRS is supporting ventures with high

growth potential. MaRS' investment acts as a catalyst for attracting the follow-on funding that companies need to grow and thrive. With expertise across multiple industries, the MaRS funds' investment placements give other investors confidence in MaRS-supported ventures.

MaRS has been an early adopter of social investing. The \$5-million MaRS Catalyst Fund combines profit with purpose, investing only in early-stage companies that are creating a well-defined social or environmental benefit. The fund began making investments in 2016 and has five companies in its portfolio to date. The concept of investing for social good also extends to addressing equity. StandUp Ventures was developed to address the critical funding gap faced by female founders. It is a \$5-million partnership between MaRS IAF and BDC that plans to make up to 20 investments in ventures with at least one female founder.

Successes in these funds, which seek both financial and social returns, will pave the way and build capacity for the marketplace and ventures to develop and thrive internationally.

MaRS IAF

SEED STAGE AND SEPARATE
YOUTH FUND

StandUp Ventures

FEMALE LED COMPANIES
SEED STAGE

MaRS Catalyst Fund

INVESTING IN BUSINESS
AS A FORCE FOR GOOD



BREAKTHROUGH STARTUPS
SOLVING CLIMATE CHANGE



PRE-SEED
ACCELERATOR FUNDING

⁵ BDC. 2017. [Canada's Venture Capital Landscape: Challenges and Opportunities](https://www.bdc.ca/EN/Documents/analysis_research/venture-capital-landscape-paper-en.pdf). Available at: https://www.bdc.ca/EN/Documents/analysis_research/venture-capital-landscape-paper-en.pdf



VENTURE PROFILE



Caitlin MacGregor,
Co-founder and CEO

plum predict certain.

“When you go in against other startups, you need to be able to differentiate why that funding should come to you. So MaRS being able to work with us and vetting us to the community has made us more successful. Without MaRS, our chances of being selected would have been much lower.”

Plum.io

Plum is a software-as-a-service platform that combines artificial intelligence with industrial/organizational psychology to quantify the potential of new hires.

MaRS Services Utilized

- Advisory services
- Embedded Executive Funding Program
- Market Intelligence
- Connections to capital
- Connections to market

100+

Annual paying customers

8,000

Hires

180,000

Applicants

\$2.775 million

In private capital raised

\$1.5 million

In other funding

Program Feature

“Social impact bonds are a unique way for social service providers to raise money from new sources. The financial innovation attracts new actors to help tackle pressing social issues through prevention.”

– Adam Jagelewski, Executive Lead, MaRS Centre for Impact Investing

Social Impact Bonds: ‘Activate’ Heart and Stroke Foundation’s Community Hypertension Prevention Initiative

Governments have proactively taken action to shift the focus to funding for improved results. One instrument paving the way for this globally is the social impact bond.

A social impact bond is a contractual agreement between a government and a social service provider (typically a non-profit organization) that specifies the outcomes (results) on which the government will pay and how much. Impact investors provide the working capital for the program and take on some of the implementation risk.

Activate is a community hypertension prevention initiative launched by Heart and Stroke Foundation Canada that used a social impact bond to deliver services to residents of Ontario and British Columbia age 60 or older through health coaches, online tracking tools and referrals to community resources such as exercise clubs and cooking classes.

This shared risk model, which has been applied internationally, was adapted to the Canadian landscape. MaRS uniquely led the design, structuring and capital raise as a neutral third party between the public and private sector, mobilizing private capital for public good.

This social impact bond program is the first health-related pay-for-success model in Canada and links the Heart and Stroke Foundation, the Public Health Agency of Canada and 12 private sector investors. The investors provided \$2.9 million to fund services to 7,000 pre-hypertensive adults. Based on a third-party valuator, success in reducing blood pressure among these participants will result in a return of up to an 8.7% bonus to the investors.

MaRS is now working on several more projects of this kind with governments across Canada and internationally in areas including neonatal care, homelessness, children in care, mental health and emergency responses to opioid use.

7,000

Pre-hypertensive adults participating in the program

\$2.9M

Of private capital invested for improved chronic disease health outcomes



A Sustainable Asset

Today the MaRS Centre is filled with innovation tenants that include: **start-stage, growing and scaling ventures; applied research entities; global corporations; venture capital and professional services; and non-profit enablers.**

A Sustainable Real Estate Asset

The MaRS Centre is a key ingredient in MaRS' model. Leveraging an initial grant from ecosystem stakeholders to construct an innovation district in the heart of Toronto, MaRS developed a sustainable real-estate operation that underpins its ability to support innovators.

MaRS holds 1.5-million square feet of real estate in one of the lowest vacancy corridors in North America.⁶ MaRS curates the tenancies of the fully occupied MaRS Centre to support ecosystem development. The results of MaRS' deliberate tenancy mix are evidenced in the network effects produced throughout the MaRS Centre for all members of the innovation community.

Today the MaRS Centre is filled with innovation tenants that include: start-stage, growing and scaling ventures; applied research entities; global corporations; venture capital and professional services; and non-profit enablers. It generates revenue that repays the debt on the buildings, but also provides funds to support MaRS' program operations.

With the MaRS Centre fully occupied, there is little ability for MaRS to provide further space to the growing number of scaling ventures facing the challenge of finding real-estate solutions. To grow and support its ventures, MaRS is seeking to leverage its success to date and extend its real-estate programming and reach beyond its existing physical footprint in Toronto.

⁶ Vilner, R., and Cattana, C. 2017. [CRBE Research 2017 Canada Real Estate Market Outlook](#).



PHASE 1 HERITAGE BUILDING & SOUTH TOWER

300,000 sf, opened 2005

MaRS 100% ownership

Funded by private donors, UofT, Ontario and Canada grants and commercial financing

PHASE 1 EAST TOWER ("PRINCESS MARGARET CANCER RESEARCH TOWER")

400,000 sf, opened 2003

MaRS 100% beneficial ownership

Financed by private bond issue

PHASE 2 WEST TOWER

780,000 sf, opened 2014

MaRS 80%/UofT 20% ownership

Financed by private bonds and Ontario loan

MaRS Centre Real Estate Assets

Impact of the convergence of the co-location of ventures, global corporates, venture capital, research entities and other innovation ecosystem participants



Lives Positively Impacted

“MaRS was created to improve the lives of Canadians and others; and our world needs this innovation more than ever. The broad platform that is MaRS today is now taking Canadian ingenuity to all kind of parts of the world. ”

— **ILSE TREURNICHT**, *Former CEO, MaRS Discovery District*

Lives Positively Impacted

Facing an era of unprecedented social change requires perseverance and ambition; in response, entrepreneurship has shifted its focus to include improving the quality of life for people around the world.

MaRS creates social impact through supporting ventures with social mandates, as well as through programs and initiatives.

Of the ventures MaRS supports, 70% report having a mandate to solve a social challenge.

Through venture support and programs, MaRS creates direct, indirect and induced social impacts.

MaRS' programs affect change by working directly through education, workshops, capacity building and knowledge translation. MaRS also works to pilot new policies and regulations by aligning the needs of governments, stakeholders and society. This work enables new ways of creating and capturing economic and social value that allow ventures, organizations and collectives to enter the market, scale and sustain impact.

Through training, workshops, engagements, and the direct and indirect effects of policies and programs supported and brokered by MaRS, we have **estimated 17.3 million positive touch points.**

MaRS continues to tailor and refine evaluations to determine the direct and indirect social impacts of its programs and supported ventures.

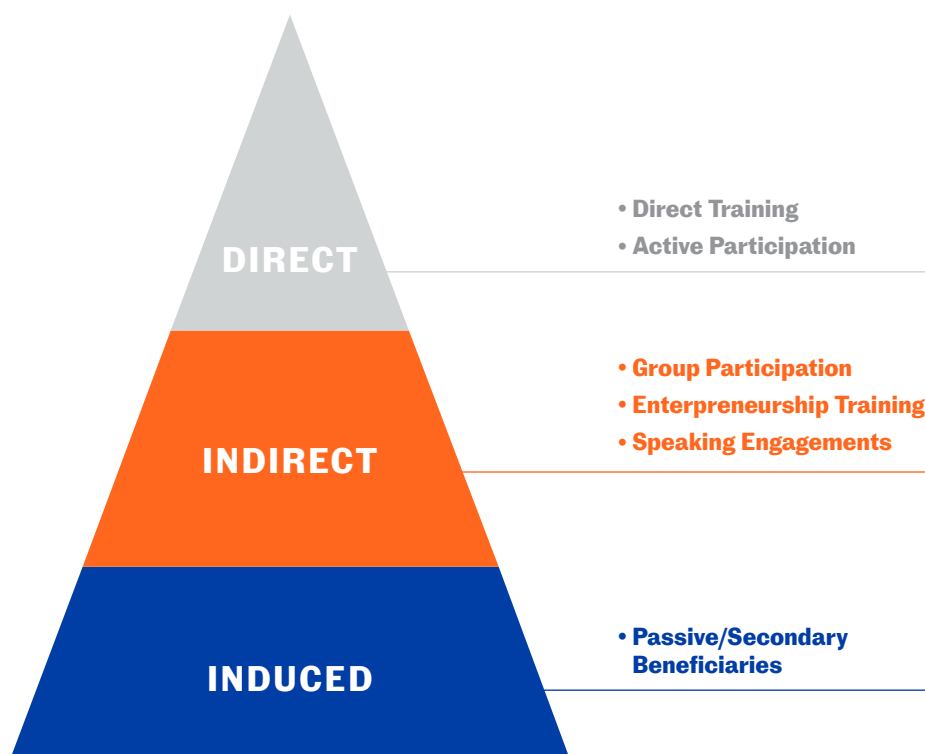
From exploring potential investment with social outcomes to brokering deals and reporting returns, MaRS actively opens the marketplace for innovative business models and sets precedence for social capital advisory services internationally.

These MaRS advisory services have mobilized \$105 million for public good. MaRS has only just started to identify the impact of its ventures and programs on lives in Canada and around the world, and is looking to measure the incremental differences being made.

Bolstering investment in socially minded ventures, Social Venture Connexion (SVX) is the only online platform connecting ethically minded retail and accredited investors with social impact ventures and funds. SVX also offers social entrepreneurs SVX Pre-Flight, a business acceleration program.

The SVX fund has mobilized \$102 million since 2013, with ventures raising between \$250,000 and \$50 million in debt, equity financing and alternative structures.

In November 2016, it launched a new ethical investment platform at the Toronto Stock Exchange and announced a community of new issuers.





VENTURE PROFILE



Gavin Armstrong,
Founder and President



LUCKY IRON FISH

“MaRS is very well connected to social impact investors. The introductions MaRS made have helped us in trying to find those investors who understand social impact companies and want to invest in them.”

Lucky Iron Fish Enterprise

Lucky Iron Fish Enterprise (LIFE) is a Canadian social enterprise dedicated to solving iron deficiency and anemia, using the Lucky Iron Fish: a simple cooking tool that acts as a reusable iron fortifier.

MaRS Services Utilized

- SVX
- Advisory services
- Connections to investors
- Entrepreneur education

170,000

Lucky Iron Fish distributed through sales and Buy-One-Give-One program

750,000

People impacted worldwide

Program Feature

Green Button: The Liberation of Energy Data

When energy and natural gas customers are given access to their real-time usage data, they adapt their behaviours and reduce consumption by up to 10%. But getting that data into the customers' hands is not always easy.

In Ontario, smart meters continuously monitor electricity use in 4.8 million homes and across thousands of commercial and industrial buildings. Those terabytes of data are the building blocks that technology companies need to create customer-facing apps that engage users and nudge them toward saving energy. However, with each of the province's 70-plus utility companies collecting, storing and sharing data in their own way, developers have no single pool of data to access and base their developments on.

In 2012, MaRS identified that there was enormous market value to be unlocked and proposed the adoption of a set of common data standards across the electricity and natural gas industries. Working with Ontario's Ministry of Energy, MaRS Data Catalyst determined that Green Button, a set of harmonized standards that had gained traction in the United States, could be suitable.

Green Button ensures that data is presented in a secure, standardized, machine-readable and user-friendly format that is easy for developers to plug into. The standard also ensures that a product or service developed in Ontario can be exported to areas of the US and other jurisdictions that have adopted the same format, thereby allowing made-in-Ontario solutions to scale internationally.

Leveraging its broad stakeholder network and position as a neutral third party, MaRS led a wide-ranging consultation that engaged utility companies, regulators,

tech ventures and data users, such as the real-estate industry and major banks. This collaboration resulted in pilot projects involving two utilities, eight tech development ventures and extensive industry analysis.

The pilot and stakeholder consultations showed that the economic case was clear: the benefits of implementing Green Button outweighed the costs by three to four times, as developers were able to create social and economic value, while customers were able to access, monitor and modify their utility usage.

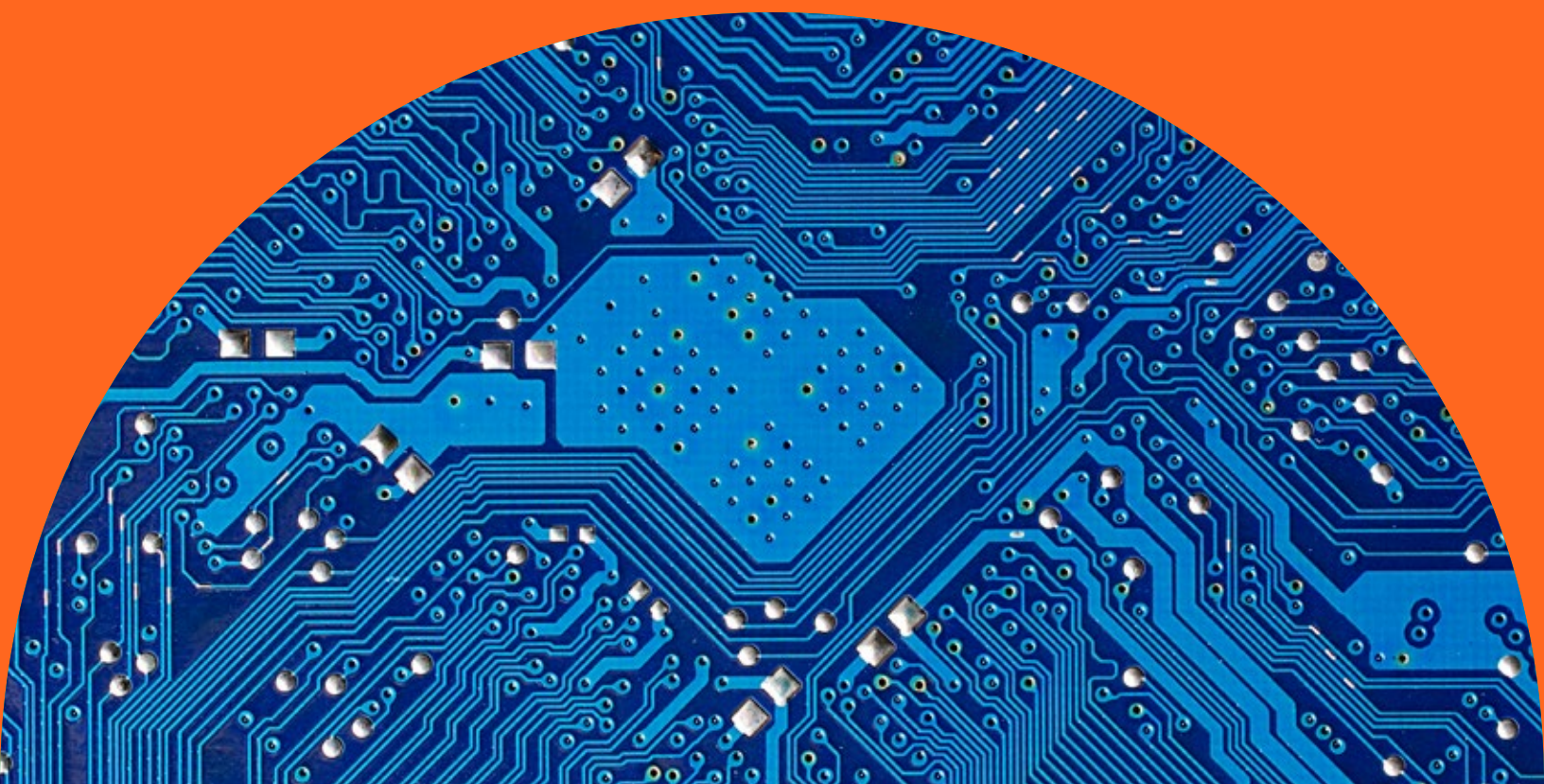
MaRS' pivotal role in bringing together stakeholders, innovative solutions and users for the pilot has paved the way for transformative change across Ontario. In late 2017, the Ontario government proposed legislation paving the way for the Green Button standard to be adopted throughout the province, not just for electricity but also for natural gas and water. By 2020, Ontario's energy use data will be completely harmonized, allowing Canadian tech companies to create more products that will help customers understand and reduce their energy consumption.

3x

Return on social and economic impact.

Total impact by 2020:

over 3.4M Ontarians



A Place and Network for Innovation

MaRS' tenants are able to meet other innovative entrepreneurs housed under the same roof.



Place and Network Effects

MaRS' real estate is an asset that allows MaRS to be uniquely innovative in operations, financial viability and partnerships to support its mission. This physical space provides a place of convergence for a curated tenant mix that gives MaRS-supported ventures access to expertise from both the public and private realms.

As their own companies mature and bring products to market, MaRS' tenants are able to meet other likeminded entrepreneurs housed under the same roof. Co-location at MaRS has been identified as a catalyst in helping ventures to attract talent, effectively collaborate with like organizations, bolster public relations and prominence in the media, and leverage the culture of innovation. A curated set of tenants who are open to a symbiotic relationship has had a magnet effect for ventures and global enterprises wanting to be a part of this unique ecosystem.

With the completion of the West Tower in 2014, the MaRS Centre doubled in size, making MaRS the world's largest urban innovation hub. MaRS' 1.5-million square feet of flexible lab space, cutting-edge research facilities and offices for research organizations, corporates, startups and venture capitalists in the heart of Toronto's Discovery District, is home to more than 150 organizations where more than 6,000 people are employed.

Verified MaRS network effects:

- Investment attraction and leverage
- Serendipity and collisions
- Shared location and assets
- IP creation and commercialization
- Prominence and PR
- Talent attraction
- Innovation culture

“CCRM is unique globally, and MaRS is unique globally, so it’s logical to embed ourselves in this state-of-the-art facility surrounded by the innovation community.”

—MICHAEL MAY, PRESIDENT & CEO, CCRM

“There have been a tremendous number of co-marketing opportunities with MaRS. We have been part of a larger commercial story around Toronto emerging as a tech centre.”

—JIM CLOAR, CCO, SYNAPTIVE MEDICAL

“Moving to MaRS is an opportunity for us to influence the growing ecosystem of innovation - and be influenced by it. Our goal is to show what is possible with emerging technologies, like AI, and build solutions to the world’s epic challenges.”

—GORDON KURTENBACH, HEAD OF RESEARCH, AUTODESK

MaRS

“Innovation in banking doesn’t happen in corporate headquarters, it happens at places like MaRS. By being here, we profit from that effect.”

—LUIS SECO, CEO, SIGMA ANALYSIS AND MANAGEMENT

“There is a culture of innovation and energy. Just by being here, we’re feeding off that.”

—DANIEL KLASS, CEO, KLASS CAPITAL

“We’ve found it easier to hire talented people, and I believe a key part of that is because we’re at MaRS, and in the centre of Toronto’s venture capital community.”

—TONY VAN BOMMEL, SENIOR MANAGING PARTNER, BDC CAPITAL

Elevating Toronto and Canada on the Global Stage

MaRS set out with a mandate to develop a world-class innovation and convergence centre that would help improve Toronto's and Canada's economic and social prosperity through a forum that brings together invention and adoption. Much of what the city and country have to offer—a diverse talent pool with connections around the world, a thriving startup ecosystem supported with private and public capital, and world-class academic institutions and a vibrant and supported tech scene—can be found at MaRS.

MaRS actively seeds stories about its portfolio of ventures in national and international media. Not only does media coverage help put Toronto and Canada on the world stage as a hub for innovation, it also attracts a diverse talent pool for innovative ventures and helps ventures scale as companies with global recognition and markets.

With an international reputation as a leading innovation hub, MaRS entices over 200 international delegations of innovators, investors and governments annually. These delegations visit, eager to learn more about how MaRS supports the Toronto and Canadian tech ecosystem and to meet the ventures that reside within it. While adopting a MaRS model for success gains prominence in other jurisdictions, MaRS is also working to support its ventures as they scale into increasingly global markets through the establishment of partnerships and soft landing locations around the world.

Talent Fuels Tech

MaRS recognizes that for Canada and Canadian ventures to be competitive, employers must be able to connect to a talent pool with the skills and mindsets necessary for the future of work.

MaRS has undertaken research to understand the dynamics between talent pools and startups, and has found that mindsets and cultural fit in the workplace are as critical as technical skills. To address this, MaRS has identified key recommendations to attract, retain and grow top talent for Canadian startups.

Diversity

Amid recent global events that challenge core Canadian values around equality regardless of gender, race and religion—including the tightening of borders and the increase of intolerance around the world—MaRS has reaffirmed its commitment to fostering inclusive innovation, a proven factor in building successful companies.

On gender equality, MaRS collaborated with #movethedial and PwC to produce the first national baseline report on gender diversity in Canadian technology, where men far outweigh women both in founding and running tech companies and as employees holding key roles at tech firms.

Beyond shining a light on the issue of gender diversity in the tech sector, MaRS is taking action by beginning to address the disproportionate undercapitalization of ventures with female founders through the StandUp Ventures fund. This \$5-million, MaRS-affiliated fund requires ventures to have at least one female founder in a C-level role.

\$2M

Ad equivalency value generated in 2017 for MaRS and MaRS-supported ventures

124

Global media mentions



Conclusion

“This is an exciting time to be an entrepreneur in Canada. Our homegrown ventures are on the frontlines of cutting-edge research, **but the future depends upon our ability to build global demand for these products.**”

— **ANNETTE VERSCHUREN**, *Chair, Board of Directors, MaRS Discovery District;
Chair & CEO, NRStor Inc.*

Conclusion

MaRS has taken on big challenges in accelerating high-growth companies, including access to talent, markets and capital. It is tackling the chokepoint that prevents made-in-Canada ventures from reaching their potential and scaling globally, and has made considerable inroads in each of them.

High-potential companies have been attracted to MaRS for its connections with investors at home and internationally, its customized advisory services and programs, and its network and community of entrepreneurs. Through MaRS, corporate partners, government entities and other enterprises have found a community to explore innovative and disruptive technology, and access to a pipeline of innovators.

MaRS' work to date has resulted in significant and measurable positive contributions to the Canadian economy. In this way, MaRS has contributed to the booming tech sector that has lifted Toronto and Canada onto the global stage.

In addition to serving the needs of the innovation community, by evaluating its programs and offerings, MaRS commits to increasing its accountability and rigour in measuring results. Using the best available data, this report reflects on MaRS' impact on regional and Canadian social and economic prosperity during the first chapter of its story. To continue to achieve its mission of helping Canadian ventures to grow and scale, it is essential that MaRS continues to monitor and evaluate its programs to inform and improve its offerings.

While MaRS' founding goals were lofty and its mission forward thinking, it has created a road map that major cities around the world are now emulating. In doing so, MaRS has helped elevate Canada and Toronto onto the world stage as leaders in innovation in key clusters that affect both economic and social well-being. MaRS Discovery District has achieved significant success in reaching and surpassing the goals it set at its inception.



Methodology

Valuing economic impact of MaRS operations and supported ventures

MaRS Data Catalyst engaged Nordicity, a third-party contractor, to undertake an economic impact assessment of MaRS' venture clients and MaRS' operations. Nordicity was provided with: annual survey data collected from venture clients between April 2010 and March 2018; secondary data, including Ontario Network of Entrepreneurs (ONE) Taxonomy analysis and MaRS mapping to North American Industry Classification System (NAICS), to develop assumptions about startup failure rates and industry-specific expenditure patterns of venture clients; and MaRS internal records, including financial statements, human resources data and audited accounting data for January 2009 to March 2018. Nordicity modelled direct, indirect and induced impact for gross domestic product using Statistics Canada's input-output tables for Ontario, and fiscal impact at provincial and federal level, by personal, corporate, consumption and property taxes.

MaRS venture clients that were targeted in MaRS' annual surveys were uniquely identified from data for the years 2009 to 2017. Companies that responded were then classified into industry categories (IT, communications and entertainment; cleantech and physical sciences; life sciences; and other) and were mapped to MaRS' ONE Taxonomy and linked with industry-specific financial data at the 2-5 digit NAICS classification level to estimate the profit margin and expenditure profile. Nordicity interpolated values to fill data gaps where a company did not respond in one of the years, accounting for 10% of the total nominal dollar value of revenues, and projected for the continuation of revenue, startup failure (based on industry averages) and incremental revenue. It is important to recognize that in the economic modelling

of venture clients, there is a distinction between measures of economic activity and economic impact. The ability to attribute the ecosystem's economic activity to MaRS' activity is limited.

The assessment of impact from MaRS' operations was concentrated on activities rather than real-estate value. As such, MaRS conducted case studies of ventures and other clients to explore the process and outcomes that result in indirect economic impact. Recommended ventures were shortlisted to demonstrate the variety of services offered by MaRS for ventures and clients, including networking, public relations, marketing, access to capital and talent, or other MaRS services.

Assessing the impact of MaRS programs

In exploring the impact that MaRS has on the adoption of innovation, MaRS began by mapping the programs in its ecosystem. Program staff were first asked to identify programs by stage—i.e. planning, implementation, execution or completed—and then map programs to four clusters: energy and environment, health, work and learning, and finance and commerce. Common activities, outcomes and effects of all were identified and verified. This resulted in the development of the levers of change: each of which has common activities, and which outcomes include adoption of innovation, as well as impact on lives and/or the environment.

Program teams extracted relevant data from program data and public records to ensure consistency and standardization. Similar metrics, such as registration, completion rates and changes in knowledge, attitude, behaviour and intention, were identified. Program teams estimated potential reach based on geography or population, based on the best available data. Programs were

then classified according to directness of impact. For example, a direct impact would be employment resulting from attending a program, whereas speaking engagements might have a low likelihood of seeing impact. The impact of programs was then categorized into: demonstrated direct impact outcomes; demonstrated secondary beneficiaries; estimated direct and indirect impact; process outcomes; and estimated process outcomes.

MaRS conducted in-depth interviews with partners and tenants to validate its current understanding of how its programs work and to better understand how its real estate, location and services support the development of the ecosystem. Interviewees were selected for their first-hand knowledge and experience on a particular topic. To decrease bias of the interviewees, the selection of interviewees was verified by at least two business units at MaRS. Open-ended questions were asked, loosely structured around a list of topics to be explored. The strategic links to be verified (the structure of the ecosystem, the benefits of being connected to the building and/or MaRS) were identified by a sub-committee executive management team at MaRS.

MaRS has only begun to quantify the impact it has directly or indirectly created and/or induced through its programs and the nearly 1,200 ventures it supports, and to determine how to measure the incremental differences it has made. This report reflects on the impact MaRS has created in its first chapter of operations. While some areas may not yet be quantified, this review serves as a baseline for future impact reports and provides a framework for understanding the outcomes of the ambitious efforts being undertaken at MaRS.

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Toronto Board Member,
MaRS Discovery District*

Calvin R. Stiller

*Professor Emeritus,
University of Western Ontario
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MaRS Discovery District*

Michael Serbinis

*CEO, League
Board Member,
MaRS Discovery District*

Martha Tory

*Retired Partner, Ernst&Young LLP
Board Member,
MaRS Discovery District*

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Manager, Impact Evaluation
MaRS Discovery District

Joe Greenwood

Executive Lead, Data
MaRS Discovery District

Evan Loh

*Senior Associate,
Corporate Development*
MaRS Discovery District

Karen Greve Young

*Former Vice President,
Corporate Development*
MaRS Discovery District

