Evaluation of the Idea to Innovation (I2I) Grants, 2016-2017 to 2022-2023

I2I Grants within the Canadian Research Innovation Ecosystem

Initiated in 2003, the objective of NSERC's I2I grants is to accelerate the pre-competitive development of promising innovations originating from the post-secondary academic sector and to promote their transfer to new or established Canadian companies. During the period under evaluation NSERC awarded $47.3 million in I2I grants.

Between 2016-17 and 2021-22*:

> 809 applications were received, and 475 grants were awarded

> Most applications were from large universities (79%) and from ON and QC (75%).

Market Assessment

- Are considered a useful tool to help provide researchers with information about a technology's market potential. They can help position a technology for subsequent grant application.
- Up to 12 months; maximum of $15,000.
- Represent 27% of the I2I-related applications, with 80% success rate.

Phase I

- Advance promising technology to attract early-stage investment and/or to build valuable intellectual property in anticipation of transferring the technology to a new or established Canadian company.
- Up to 12 months; maximum of $125,000.
- Represent 68% of I2I-related applications, with a 48% success rate.
- Address the funding gap around early-stage research commercialization within Canada, particularly because it does not require matching funds from a partner and is nationally available for all NSE disciplines.

Phase II

- Provide scientific evidence about whether a technology is feasible and has a defined market. A partner must share the cost of the project.
- Two grants based on the stage of the project, and the type of partner:
    - Phase IIa - 6 to 18 months; maximum of $125,000
    - Phase IIb – up to 24 months; maximum of $350,000
- Represents only 5% of the I2I-related applications, with a 55% success rate for Phase IIa and 66% success rate for Phase IIb. This low uptake may be linked to an increased interest from researchers to use spin-offs as a pathway for commercialization because of a lack of receptor companies in Canada and more funding for small and medium enterprises to pursue commercialization activities.

*Program data for fiscal year 2022-23 was unavailable at the time of the evaluation.

Evaluation conducted by **Ference & Company Consulting Ltd.** and

Support for Promising Innovations

Intellectual Property (IP)

I2I grants have been successful in helping researchers achieve their IP, with the majority of funded projects (88%) filing for one or more patents. More I2I funded projects obtained IP protection (68%) compared to unfunded projects (29%).

Partnerships

I2I funded projects were successful with their partnerships with most partners (70%) remaining connected with the technology after the end of the grant and many projects (57%) managing to attract contributions from new partners.
Although not required, almost a third (30%) of Phase I funded projects received some form of financial or in-kind support from the partners, which was perceived to further support technology development and commercialization activities.

Student Involvement

All funded Phase I projects and 70% of Phase II projects involved students who participated in activities such as analyzing/interpreting research findings, conducting data collection, and/or developing data collection tools or equipment. It was reported that students provided valuable contributions, and the majority of surveyed researchers (62%) indicated that the availability of students to support the project was an important factor for its completion.

Business-Related Supports (BRS)

BRS were mostly provided by university incubators, private companies, and academic institutions. There is a need for more BRS with 31% of the funded projects identifying the team's business skills as a challenge for the transfer of their technology to market. The evaluation also revealed that researchers and students from smaller universities generally have less access to BRS compared to researchers and students working in large universities.

Transfer of Technology to Market

The majority (79%) of surveyed researchers with projects funded since 2010* continued to pursue the commercialization of their technology. Of these projects over a quarter (28%) have transferred the technology to market, and a third (33%) plan to do so in the future. Of the funded projects that have already transferred their technology to the market (n=25), the majority resulted in the creation of jobs (64%) and/or a company (60%). It was reported that 236 jobs were created from these projects.

When comparing funded and unfunded projects for the period since 2016, more surveyed researchers with funded projects (78%) continued to pursue the commercialization of their technologies than those whose who did not receive I2I funding (45%).
Lack of financial support was seen as a critical barrier to pursuing commercialization.

* In order to capture long-term outcomes, the survey of funded researchers included projects since 2010.

Evaluation of the Idea to Innovation (I2I) Grants, 2016-2017 to 2022-2023

Refresh and Modernize

Grants Value

I2I grant amounts have not changed since the program's inception and have approximately 50% less purchasing power than they did 20 years ago. This has created challenges for funded projects to achieve all of their objectives due to the rising cost of research commercialization.

Grant Reporting

There are inconsistencies across internal I2I performance monitoring instruments, including questions and terminology variability across the reports. Also, the reports are not always fully completed by various stakeholders. This challenges the ability to understand the impact of the I2I grants.

Equity, Diversity, Inclusion (EDI)

There is an increased recognition from I2I stakeholders that EDI is an important consideration for research commercialization, as the integration of EDI may broaden the applicability and use of technology amongst end-users.

Eligibility requirements

There is a perceived lack of clarity regarding the application and selection processes such as: the confusion around whether IP must be obtained prior to application, the expectations around technology maturity and the project risk level, and confusion as to whether projects with a spin-off company are eligible for I2I grant funding. This creates challenges for researchers in deciding if they are eligible for the I2I grants.

Review Process

The review process was perceived as "a black box", and concerns were raised around the consistency and clarity of the review and selection of applications between different funding calls, as well as the quality of the feedback received from the selection committee members. This situation creates confusion for researchers and the Industry Liaison Offices (ILOs) in preparing their applications.

Recommendations

Recommendation #1: MODERNIZE the suite of I2I grants to further align with the needs of the Canadian research community and changing Canadian innovation ecosystem. This includes investigating opportunities to increase the funding amount for the Market Assessment and Phase I grants, reassessing the value-added by the Phase II grants and allowing in-kind supports by partners for Phase I grants.

- To support the increasing costs associated with the commercialization of research and the achievement of grant objectives, there is a notable opportunity to increase the dollar value for Market Assessment and Phase I grants.
- The low uptake of the Phase II grants points to opportunities to re-assess the value-added by these grants as part of the suite of I2I funding.
- As partners sometimes provide in-kind supports for Phase I projects to facilitate the technology development, NSERC could consider creating allowances for these supports while not making them a mandatory requirement.

Recommendation #2: UPDATE the program logic model to improve the alignment between the expected outcomes of the I2I grants and NSERC's strategic vision (e.g., student training, EDI), and revise the program reporting instruments to reflect these new outcomes and improve performance monitoring.

- There is an opportunity to integrate considerations related to student training and EDI into the theory of change for the I2I grants and have these components reflected in the program's expected outcomes. This will strengthen the extent to which the I2I grants align with key components of NSERC's strategic vision as outlined in NSERC2030: Discovery. Innovation. Inclusion. It will also support the consideration and inclusion of student training and EDI within projects funded by an I2I grant.
- Revising the performance monitoring instruments would allow the program to align the various reports across stakeholder groups and points in time, as well as with similar instruments for other NSERC programs.

Recommendation #3: COMMUNICATE with a focus on clarifying and repackaging information about the I2I grants, as well as identify new and strengthen existing pathways for dissemination amongst key stakeholders. This includes improving the transparency, clarity, and comprehensiveness of the details regarding the requirements for the application and review processes, as well as developing and expanding relationships with complementary programs and other funders.

- The evaluation found that there has been confusion and concerns of a lack of transparency among stakeholders regarding what is expected from applicants for the I2I grants, particularly around the eligibility requirements, selection criteria, and review process. This confusion is more likely to occur for the Phase I and Phase II grants. By revising the program literature and offering increased guidance, tools, and training for applicants, ILOs, and selection committee members, NSERC may reduce this confusion and address ongoing concerns.
- There is an opportunity to leverage complementary programs (e.g., Lab2Market offered by some Canadian universities and the new NSERC Lab to Market Grants) and other funders (e.g., university incubators, accelerators) to help build new relationships between the I2I grants, post-secondary institutions and industry partners.