Nurturing Innovation: VENTURE ACCELERATION NETWORKS
A Review of Existing Models
# Table of Contents

Acknowledgements

Overview

Objective and Approach of the Study

Part I: Drawing Lessons from Existing Models

1. The Role of Venture Acceleration Networks
2. Using Networks to Support Entrepreneurs
3. Creating Strong Networks
4. Selecting Ventures
5. Financing the Program
6. Choosing an Organizational Structure
7. Adapting to the Innovation Ecosystem
8. A Role for the Public Sector in Russia

Part II: Individual Program Descriptions

Virginia Biosciences Development Center

TiE Bangalore

TechStars

SMART Innovation Center

OCTANTIS

MIT Venture Mentoring Service

MaRS

Larta Institute

InnovateVMS

Innovation Network Corporation Japan

IMP³rove

The IC² Global Commercialization Group

Endeavor

U-M Tech Transfer, the Catalyst Resource Network

Carbon Trust

Appendix
Acknowledgements

This report was prepared for the Russian Venture Company by a World Bank team led by Jean-Louis Racine in collaboration with Alistair Brett, Doina Cebotari, Juan Julio Gutierrez, Naoto Kanehira, Lawrence Kay, Anthony Lambkin, Sebastián Melin, Florian Theus, Christina Tippmann, Alina Tourkova, and Yanina Yermakova.

The team would like to thank Leonid Levkovitch-Masluk of Russian Venture Company who provided important guidance and shared his invaluable knowledge. The team is also grateful to Sophie Sirtaine (World Bank Sector Manager), Pedro Alba (World Bank Country Director), Alfred Watkins (World Bank) and Bob Hodgson (Zernike UK) for comments received on the draft. The team would like to thank Yevgeny Kuznetsov (World Bank) for comments on the case studies. Finally, the team is grateful to Zenaida Kalinger (World Bank) for her support in putting the report together and Rodrigo de Castro (World Bank) for the cover design.

The team would also like to thank all of the staff members, mentors, consultants, clients and beneficiary entrepreneurs of the venture acceleration networks who generously gave offered their time for interviews. In particular, the team would like to thank Sidney Burbach (IC²), Pete Peters (Innovate VMS), Dave Raval (Carbon Trust), Sayaka Iwase (INC Japan), Howard Califano (SMART Innovation Center), Don Duval (MaRS), Ravindranath. P (TiE Bangalore), Dave Geary (Endeavor), Carlos Gutierrez and Rohit Shukla (Larta Institute), Jerome Smith (MIT VMS), Eva Diedrichs and Sabine Brunswicker (IMP³rove), Wes Hufstetter (University of Michigan Catalyst Resource Network), Jenny Boyd and Nicole Glaros (TechStars), and Richard Caro (Acceleration Coop).
Overview

Roles

Venture acceleration networks consist of experienced, skilled and well-connected individuals who provide hands-on support to entrepreneurs. They help propel viable business ideas to the market place by accelerating the regeneration of ideas and connecting entrepreneurs to the market. They achieve this by:

- **Educat**ing entrepreneurs through on-the-job training on a broad range of practical skills related to the business growth.
- **Connect**ing entrepreneurs to markets, capital, customers, partners, experts, information and role models through introductions, brokering and by creating bonds of trust and credibility.
- **Validat**ing business ideas through strategic advice and direction, and by creating a supportive environment for business development experiments. Validation provides the critical value-added of venture acceleration networks. It builds on the two other pillars, educating and connecting, to help ideas fail early, often and inexpensively.

The impact of venture acceleration network programs extends beyond the entrepreneurs they serve directly to the wider community of entrepreneurs, investors, and business service providers. They provide investment-ready or screened opportunities for potential investors. They reduce public and private resources invested in nonviable business ideas by accelerating their path to failure through market validation. They help match management and technical talent from the labor force with the appropriate businesses. They match service providers with potential new clients. And finally, they help create a culture of entrepreneurship by exposing entrepreneurs to role models and by fostering the social capital that accelerates the exchange of knowledge, ideas and deals in the community.

Common Threads

Venture acceleration network programs have several basic features in common. In their current form they are all very recent, having appeared only in the past decade, initially in the United States, although less structured variations existed before. They are organized around a professionally-staffed nucleus, typically supported by a core network of mentors or brokers, and an extended network of service providers and technical experts. Often, they offer learning and networking events for the entrepreneurs and their communities of mentors, brokers, service providers and experts. They typically include some level of screening, tied to the entrepreneur’s affiliation, the venture’s profile or its potential for success. None of the programs are financed to any significant extent through upfront user fees.

Approach

Around this set of common features, venture acceleration networks experiment with a wide range of approaches to financing, management, network creation, selectivity, service delivery and structure. **Three main approaches emerge from this variety**, although most of the programs do not fall neatly into any single category. A first approach aims to **commercialize technology**.
Projects for short-term payoffs (e.g., creating spin-offs). A second approach aims to build a local self-sustainable innovation ecosystem with broad medium to long-term payoffs (e.g., creating linkages in the entrepreneurship community). A third approach aims to foster a market for innovation-related services by building capacity, transparency and efficiency in the service provider market, and raising awareness among SMEs.

Programs aiming to foster short-term R&D commercialization select technology projects on the basis of their (assumed) technical and market potential. They often include funding for feasibility testing. Some rely on full-time professional mentors and brokers to provide bare-bones project teams with rapid and dedicated support. Because they target technologies that are not yet fully out of the lab, they also focus on team-building, bringing in management talent from the outside to complement the technical talent of the project team. These many roles make these programs relatively staff and resource-intensive. To minimize costs these programs are structured around clear milestones and timelines.

Programs aiming to build innovation ecosystems select projects on the basis of their venture teams, and their perceived capacity to benefit from the program and create high-impact ventures. Many have elements of self-selection whereby unfit entrepreneurs are made to opt out of the programs. The programs focus on building the skills of the venture team, recognizing this as a long-term investment for society. The programs also focus on nurturing and leveraging external mentor and advisory networks to support the ventures, rather than rely on in-house capacity. They are light-weight in terms of staffing and financials, and relatively open in structure and timeline.

Programs aiming to build innovation-related consultancy markets do not aspire to pick winners but to help businesses grow by connecting them to qualified and vetted commercial sources of support. They follow a “hands-off” approach to supporting entrepreneurs, creating analytical tools, and training qualification tools to support innovation-related consultancy, and by marketing the network. Hence, they generally operate with small teams. Their light-touch approach means that their models are easily scalable, although they are also less rich in content.

Success Factors

Experiments with venture acceleration networks highlight many success factors. Critical factors include:

- The programs are managed by highly-networked “magnetic” individual who are able to attract mentors, business services providers, experts and ventures by virtue of their position in the business community. They are well-known overachiever entrepreneurs and business leaders with significant convening power.

- The programs start with small “high-value” networks with very limited numbers of high-quality entrepreneurial teams and mentors. High-quality networks can be self-perpetuating.

- The programs select mentors who value their participation in the networks beyond immediate financial reward. They are motivated by giving-back to their communities, networking with ventures and other mentors, potential investment
positions in the ventures and potential management positions. Mentors who derive personal satisfaction from their involvements are “sticky” and stay connected with the program and with the ventures. Giving flexibility to mentors and entrepreneurs to select each other creates long-lasting relationships and thus expands the size and sustainability of an entrepreneurship network.

The programs **offer consulting services and match-making as a package with mentoring**, not as standalone services. This ensures that the ventures seek relevant consulting services and are well-prepared before prospective meetings. Mentors act as gateways or network hubs to other forms of support and as connectors.

The programs **ensure that non-performing entrepreneurs are filtered out**. This is either done through extensive screening processes or by admitting a wide pool of ventures and putting indirect pressure on non-performers to self-select out during the course of the program.

The programs **actively manage trust**. They achieve this by setting and enforcing clear guidelines and expectations for entrepreneurs and advisors. In addition, they leverage personal networks in tight-knit entrepreneurial communities with abundant social capital, where ethical violations would cause reputational risk. Where there is no such community, they use self-policing through mentor groups.

Programs supporting ventures far from relevant markets, sources of financing and specialized knowledge **build bridges to relevant global networks**.

### Challenges

V venture acceleration network experiments highlight a multitude of challenges. Some face challenges linked to the environments where they operate. Where there is no local pipeline of coachable ventures or of mentors with the right mix of skills, experience and connections, programs do not succeed. Programs also face an uphill challenge where there is no local access to complementary forms of public and private support, financial and other.

Some venture acceleration networks also suffer from design issues. Common problems are linked to top-down match-making of mentors and entrepreneurs, which typically leads to a mismatch, poor screening of mentors and advisors, and building programs based on pure financial incentives for advisors.

### The Role of the Public Sector

V venture acceleration networks can address a number of market and system failures that hamper innovation and entrepreneurship. These market failures are linked to the transaction costs, search costs and information asymmetries that lead to a less-than-optimal amount of innovation-related services supplied and sold on the market. They are also linked to the positive externalities of investing in the skills of an investee, since part of those skills will be captured by future investors. The system failures are linked to capabilities failures -i.e. inadequacies in entrepreneurs’ abilities to act in their own best interest - and framework failures related to cultural and social norms.

The public sector can help address these gaps by supporting venture acceleration network experiments. Venture acceleration network
programs grow in different ways, require different institutional structures and serve different functions depending on the local context. Hence there is no single approach to building these programs and only through experimentation can effective models be identified.

The public sector can ensure that it quickly converges to appropriate models by supporting existing network initiatives and partnering with regional stakeholders to create new ones. Support can come in the form of facilitating partnerships between relevant stakeholders, providing financing on a competitive basis, and creating mechanisms for programs to adopt good practices and learn from one another.
### Table 1: Success factors of venture acceleration networks

<table>
<thead>
<tr>
<th>Prerequisites</th>
<th>Beneficiaries</th>
<th>Human Network</th>
<th>Innovation Ecosystem</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of the team</td>
<td>Network quality before size</td>
<td>Some entrepreneurship culture and community</td>
<td>Mentors as gateways to other support</td>
<td></td>
</tr>
<tr>
<td>Commitment to the venture</td>
<td>Connectedness to relevant markets</td>
<td>Critical mass of deal flow</td>
<td>Screening mentors</td>
<td></td>
</tr>
<tr>
<td>Quality of the idea/technology</td>
<td>Connectedness to the entrepreneurship community</td>
<td>Universities</td>
<td>Mentorship code of conduct and trust management</td>
<td></td>
</tr>
<tr>
<td>Connectedness to the entrepreneurship community</td>
<td>Business experience</td>
<td>Business environment</td>
<td>Social capital of staff</td>
<td></td>
</tr>
<tr>
<td>Business experience</td>
<td>Entrepreneurship experience</td>
<td>Complementary innovation support programs</td>
<td>Screening and filtering-out beneficiaries</td>
<td></td>
</tr>
<tr>
<td>Motives</td>
<td>Dedication to the program</td>
<td>Existing entrepreneurship networks</td>
<td>Staff profile</td>
<td></td>
</tr>
<tr>
<td>Industry sector expertise</td>
<td></td>
<td>Local market demand</td>
<td>Complementary services</td>
<td></td>
</tr>
<tr>
<td>Prerequisites</td>
<td></td>
<td>Business partners</td>
<td>Public-private-academic partnerships</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Venture funding</td>
<td>Match-making of advisors &amp; entrepreneurs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private donor funding sources</td>
<td>Activities that enhance the value of the network</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Public program funding sources</td>
<td>Program length and meeting periodicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quality of innovation management consultants</td>
<td>Meeting coordination &amp; facilitation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Host institution brand</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Communication of success</td>
<td></td>
</tr>
</tbody>
</table>
Objective and Approach of the Study

The objective of this report is to understand the role, operational models and identify good practices of programs that seek to accelerate innovative entrepreneurship by managing, nurturing and leveraging social and business networks. This report is based on 15 case studies of venture acceleration network programs spanning 43 countries (Table 2). The general findings are presented in Part I while the individual case studies can be found in Part II. The conclusion suggests next steps for operationalizing a venture acceleration network in Russia.

The basic selection criteria for the case studies were that the programs rely on networks to help entrepreneurs innovate. The 15 case studies were selected so that as a whole, they represented programs with:

- Sufficient track record to observe their output, understand their impact and draw lessons from the challenges they faced.
- A wide variety of business models.
- Distinct innovation ecosystems, in terms of their geography, enabling environment and supportive institutions.
- Serve ventures in a variety of sectors and growth stages.
### Table 2: Case study organizations, program and geographic coverage

<table>
<thead>
<tr>
<th>Organizations</th>
<th>Case study programs</th>
<th>Shorthand name used in this report</th>
<th>Location</th>
<th>Metro population (million)</th>
<th>Program launch date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metropolitan Coverage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaRS Discovery District</td>
<td>Advisory Services</td>
<td>MaRS</td>
<td>Toronto, Canada</td>
<td>5.1</td>
<td>2005</td>
</tr>
<tr>
<td>Singapore-MIT Alliance for Research and Technology (SMART) Innovation Center</td>
<td>Catalyst Program</td>
<td>SMART</td>
<td>Singapore</td>
<td>5.1</td>
<td>2009</td>
</tr>
<tr>
<td>Octantis</td>
<td>Mentoring Program</td>
<td>Octantis</td>
<td>Santiago, Chile</td>
<td>7.2</td>
<td>2004</td>
</tr>
<tr>
<td>University of Michigan Tech Transfer</td>
<td>Catalyst Resource Networks</td>
<td>Catalyst RN</td>
<td>Ann Arbor, USA</td>
<td>0.3</td>
<td>2007</td>
</tr>
<tr>
<td>TechStars</td>
<td>TechStars</td>
<td>TechStars</td>
<td>Boulder*, USA</td>
<td>0.3</td>
<td>2007</td>
</tr>
<tr>
<td>MIT Venture Mentoring Service</td>
<td>MIT Venture Mentoring Service</td>
<td>MIT VMS</td>
<td>Boston, USA</td>
<td>4.6</td>
<td>2000</td>
</tr>
<tr>
<td>Virginia Biosciences Development Center</td>
<td>Kitchen Cabinet Business Advisory Board</td>
<td>VBDC</td>
<td>Richmond, USA</td>
<td>1.2</td>
<td>2003</td>
</tr>
<tr>
<td>Innovate VMS</td>
<td>Innovate VMS</td>
<td>Innovate VMS</td>
<td>St. Louis, USA</td>
<td>2.8</td>
<td>2007</td>
</tr>
<tr>
<td>The Indus Entrepreneurs (TiE), Bangalore</td>
<td>Entrepreneurship Acceleration Program (EAP)</td>
<td>TIE EAP</td>
<td>Bangalore, India</td>
<td>6.6</td>
<td>2006</td>
</tr>
<tr>
<td><strong>National Coverage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Trust</td>
<td>Entrepreneurship Fast Track</td>
<td>Carbon Trust</td>
<td>United Kingdom</td>
<td>-</td>
<td>2001</td>
</tr>
<tr>
<td>Innovation Network Corporation Japan</td>
<td>Open Innovation Platform</td>
<td>INC Japan</td>
<td>Japan</td>
<td>-</td>
<td>2010</td>
</tr>
<tr>
<td>IC²</td>
<td>DST-Lockheed Martin Innovation Growth</td>
<td>IC² India</td>
<td>India</td>
<td>-</td>
<td>2007</td>
</tr>
<tr>
<td><strong>Multinational Coverage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMP³rove</td>
<td>All</td>
<td>IMP³rove</td>
<td>European Union</td>
<td>-</td>
<td>2006</td>
</tr>
<tr>
<td>Endeavor</td>
<td>All</td>
<td>Endeavor</td>
<td>11 emerging countries</td>
<td>-</td>
<td>1998</td>
</tr>
<tr>
<td>Larta Institute</td>
<td>Commercialization Assistance Program</td>
<td>Larta</td>
<td>USA + others</td>
<td>-</td>
<td>2004</td>
</tr>
</tbody>
</table>

*other locations include New York, Seattle and Boston.

*Source: US Census; Statistics Canada; Department of Statistics Singapore; http://www.world-gazetteer.com.*
Drawing Lessons from Existing Models
1. The Role of Venture Acceleration Networks

**Key findings**

- Venture acceleration networks address market gaps associated with skills, transaction costs, resource efficiency and network externalities.

**Objectives**

The venture acceleration networks in the case studies can be classified according to their objectives (Figure 1). A first category of programs helps accelerate the commercialization of technology issued from R&D, often still at the pre-venture stage (Catalyst RN). A second category focuses on accelerating the growth of early stage ventures, hence on “commercializing” entrepreneurs rather than commercializing R&D (TechStars). Yet, a third focuses on accelerating growth in revenue-generating small and medium enterprises (SMEs) (IMP3rove). Many serve more than one of these objectives.

**Programs vary in their level of engagement with network creation, coordination and management.** At one extreme some programs focus on building strong internal pools of professionalized mentors, brokers and advisors, who they complement with external network members (MaRS). These internal network members can be mobilized quickly and intensively when a need arises, and are usually pro-active, acting as “project scouts” within a research institution. At the other extreme, one program, IMP3rove, adopts a hands-off approach to network facilitation by creating incentives to join a network in the form of standardization of service offerings, professional certifications and market visibility. In between those two extremes lie programs that draw individuals from existing networks – either from social networks (TechStars) or alumni networks (MIT VMS) – and formalize them into networks that serve their specific objectives. Where there are no such pre-existing networks to draw from, other programs assemble and manage new external networks. New networks are necessary in communities where the entrepreneurship community is not dense (Octantis), and where the networks need to span vast geographic areas (INC Japan nationally, and Endeavor globally).

**Addressing Market and System Failures**

The programs in the case studies play the following four roles in promoting innovation and entrepreneurship:

- Improve entrepreneurial capacity through experiential learning.
- Reduce transaction costs and improve search efficiency between entrepreneurs and the resources they need to succeed.
- Increase public and private resource efficiency by helping business ideas fail early, often and inexpensively.
- Leverage network externalities by expanding and strengthening networks.
Building capacity for innovative entrepreneurship mostly translates to providing business skills through experiential learning and improving internal business processes. Although some programs such as MaRS have classroom learning events and training workshops, most learning takes place through mentorship. Learning involves both concrete entrepreneurial skills such as business planning, business plan development, business management, accounting and legal, marketing, financing, and hiring staff, but also more tacit skills such as negotiating with investors and approaching potential customers (Box 1). In the case of IMP³rove, capacity for innovative entrepreneurship is not built through learning as much as it is through building more effective internal business processes (Box 2). Several of the programs in the case studies have education as their primary objectives (MIT VMS). The educational role of all mentor networks has high externalities. It is not possible for any single investor to fully capture the returns of mentoring an entrepreneur. Most entrepreneurs fail several times before building a successful business. Future investors will thus free-ride on any investment in skills acquired through mentoring during previous ventures. This relates to the public good aspect of building entrepreneurial capacity.

---

### Program Objectives and Business Models

<table>
<thead>
<tr>
<th>Program Objective</th>
<th>R&amp;D Commercialization</th>
<th>Venture Acceleration</th>
<th>SME Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intensity of Program Engagement with Network</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalize the network &amp; consolidate informal networks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catalyst RN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaRS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC² India</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMART</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Trust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Larta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Octantis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovate VMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INC Japan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VBDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endeavor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create &amp; manage new networks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIT VMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TiE EAP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TechStars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consolidate existing networks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facilitate new networks through standards &amp; certification</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**IMP³rove**
Box 1: Building entrepreneurial capacity through experiential learning.

Brendan McNaughton is the founder and chief technical officer of Lifemagnetics, a biotechnology firm spun out of his research at the University of Michigan with the help of Catalyst RN. The company has five employees. It is currently commercializing technology for bacteria identification and measurement of patient responses to antibiotics, which will help doctors target treatments at patients more quickly.

In establishing Lifemagnetics Brendan required substantial help with starting and managing the business, and then getting connected to people with the expertise and experience he needed to grow the company. Catalyst RN helped with Brendan’s and Lifemagnetics’ development in both of these areas.

While he was at the university Brendan was guided by a mentor (who eventually became Lifemagnetics’ CEO), and then a business start-up specialist who helped him to write a business plan and assess the potential market for his research. He was then connected to consultants and other experts who were central to the formation of the business and management of the technology.

Catalyst RN also helped Brendan to find vital sources of funding at each stage of the commercialization process. At the start he received USD 150,000 through two funds at the University of Michigan that enabled the technology to be prototyped. The network then connected him to the Walter Coulter Foundation, which gave him a total grant of USD 350,000 over three years for support in growing the business. Finally, the network introduced him to a venture capitalist, which has invested in the firm.

Source: Interview with Brendan McNaughton.

Box 2: Building innovative capacity through management consulting.

Perficable is a metal-cutter and manufacturer of metal parts for cars, furniture and general appliances based in Spain. It was founded in 1999. Before it approached IMP³rove its objective was to become more innovative so that it could expand into new industries.

Perficable had several industry niches that it wanted to target and joined IMP³rove for the help it could provide in improving its internal processes for encouraging and managing innovation. IMP³rove highlighted two areas for improvement: the creation of an innovation plan and the need for collection and analysis of customer feedback in order to improve customer satisfaction. The first issue that IMP³rove thus helped with was the specification of problems that needed solving.

To try and improve Perficable’s processes in these two areas, IMP³rove helped the firm to develop an innovation plan that involved all the staff and explored the generation, development and evaluation of innovative ideas. In order to improve the flow of customer feedback, IMP³rove helped Perficable to both manage and analyze the client responses that they were receiving but previously not managing adequately.

The innovation and feedback management plans are still being implemented but it is hoped that they will have several important effects, particularly in Perficable’s ability to encourage the creation, selection and marketization of innovative ideas. It is also hoped that Perficable will soon have customer satisfaction strategies in place that are based on customer feedback.

Reducing transaction costs implies connecting entrepreneurs with relevant and trusted resources (e.g. lawyers, consultants, investors, business partners, potential employees, potential customers). Transaction costs can be deal-breakers between early-stage ventures and the external resources they need to succeed. Entrepreneurs with limited experience do not know what types of resources they need, how to formulate their needs, and who to trust. The same may hold true for SMEs in the area of innovation management. From their viewpoints the providers of “resources” see early-stage ventures and SMEs as a very fragmented market that requires prohibitive business development costs. Moreover, there are information asymmetries due to the lack of efficient market signals: investors, business partners and customers cannot easily distinguish promising opportunities from poor opportunities. All programs include mechanisms to reduce transaction costs. Some are passive (IMP³rove’s consultant database) while others are active (IC²’s brokers). Programs centering around mentors ensure that transaction costs are minimized on both the supply and demand sides. For example, they will only connect a venture to a trusted investor if and when the venture is investment-ready.

Rapid market validation leads to increased public and private resource efficiency. The role of the programs is to continuously connect entrepreneurs to resources (experienced entrepreneurs, industry leaders, potential customers, potential investors, technical experts, consultants, etc.) that can provide them with rapid feedback on their business ideas and on their ventures. The programs allow entrepreneurs to limit the time and resources they spend on bad ideas, and improve them or abandon them. They also allow for entrepreneurs to quickly recognize their own failure if they do not have the required willingness or ability to take their ventures to the market. Importantly, they help governments minimize the public resources spent on supporting ventures and business ideas that do not have a future in the market. A comprehensive study of new business development in the United States over a 50 year period found that 3,000 ideas only lead to one market success.¹ The role of the program is hence to reduce the time and resources spent on the 2,999 ideas that never make it to the market. They help business ideas fail early, often and inexpensively.

Market validation plays a particularly important role for young firms and new markets. Young firms do not have the start-up capital or time for careful market research (Box 3). And for disruptive innovation, classical approaches to market research are often not very informative since the markets to be researched do not yet exist. Rather what is needed is testing the idea quickly to have market judgment from individuals with unique abilities to “interpret” the market. This may include talking to potential customers, investors, peers and experts at an early stage, which can be accelerated by tapping into a mentor’s network to help identify potential customers and markets.

Resource efficiency is best exemplified by the “sounding boards” in the program cases studies. These groups of individuals provide earnest and rapid feedback to entrepreneurs. These boards are different from the typical advisory boards that individual companies have.

¹ Stevens G and Burley J. (1997) 3,000 Raw Ideas = 1 commercial Success, Industrial Research Institute.
In a seminal study on the origin and evolution of the fastest growing businesses in the United States, Amar Bidhé found that they often employ fast-paced strategies of opportunistic adaptation based on rapid market validation: “Entrepreneurs who start uncertain businesses with limited funds have little reason to devote much effort to prior planning and research. They cannot afford to spend much time or money on the research; the modest likely profits doesn’t merit much; and, the high uncertainty of the business limits its value.

Sketchy planning and high uncertainty requires entrepreneurs to adapt to many unanticipated problems and opportunities. One entrepreneur likens the process of starting a new business to jumping from rock to rock up a stream rather than constructing the Golden Gate Bridge from a detailed blueprint. Often, to borrow from Elster’s discussion of biological evolution, entrepreneurs adapt to unexpected circumstances in an “opportunistic fashion: their response derives from a spur of the moment calculation made with the intention of maximizing immediate cash-flow. Capital-constrained entrepreneurs cannot afford to sacrifice short term cash for long term profits. They have to play rapid-fire pinball rather than a strategic game of chess.”


Leveraging networking externalities implies absorbing entrepreneurs into high-value networks. Social networks can be difficult to penetrate for newcomer entrepreneurs, even in dense and highly-connected clusters such as Silicon Valley. Connections to entrepreneurial networks help to achieve the three program roles stated above on a sustained basis. Social networks help entrepreneurs improve their skills, reduce their transaction costs and validate their ideas. Mentors are the key gateway to entrepreneurial networks. They develop the trust relationships with their mentees that are required for network entry. As network members themselves, mentors epitomize the benefits of leveraging networks: they sometimes keep their roles as mentors after the program, they sometimes invest in their mentees, they sometimes join their ventures as managers, and they sometimes help them broker relationships with investors, customers, business partners or service providers. In programs with mentors in residence, such as the University of Michigan Catalyst Resource Network, a mentor will frequently serve as the start-up company’s “acting CEO.”

Impact

The rationale for venture acceleration networks is grounded on market failures, and studies on angel investing suggest that mentoring has a positive effect on investment returns (Box 4), but there has yet to be a rigorous evaluation of their economic impact. Only a few of the programs in the case studies make any attempt to measure impact. Larta is the only program to publish its impact assessments. They suggest that the programs do make contributions to the progress of the venture in several areas. These include forming new partnerships and deals, raising investment and raising revenue. Anecdotal evidence from the case studies suggests that many of the entrepreneurs benefited in similar ways from other programs.

---

2 There are now numerous “bridging organizations” in Silicon Valley whose role is to connect outsider entrepreneurs or inexperienced entrepreneurs to relevant networks.
Box 4: The effect of mentoring on angel investment returns

Attracting investment is a key part of the growth of any startup, but so is the expertise that it can draw on. Entrepreneurs negotiating the stages of founding and developing a business can benefit substantially from the advice of experienced investors, hence the potential effects of mentoring during angel funding and other early-stage investments. A recent study examined some of the effects of this mentoring on the performance of startups that had attracted angel investment in the United Kingdom.

The study examined the activities of angels in 31 investment groups. It specifically looked at the exits they had made from their investments, mostly from the year 2000 onwards. There was substantial knowledge in the group, as the median level of experience of investing was five years while the median number of years spent with a large company was 13. In the sample there were just over 1,000 separate investments with 406 exits. The average investment size per investor was £42,000 and the average number of investments was six. The median pre-investment valuation of the firms that received money was £875,000 while the mean was £1.7 million.

Among the investors in the sample more entrepreneurial experience was significantly correlated with better investment outcomes. In particular, those who had been involved in three or more ventures were less likely to lose money and were better able to make several-fold returns on their investments. Furthermore, angels who made investments in areas in which they had already had prior involvement were also much less likely to see their investments fail. This suggests that acuity for spotting and then guiding the growth of a venture is important to its success. In places where there are few entrepreneurs with much depth of expertise it thus makes sense for the ones who do to provide much-needed mentoring.

The study examined both the amount of due-diligence performed by the investors and the level of involvement they took in their investments. The study found that investments where the investor had spent at least 20 hours of due diligence were much less likely to fail (another study in the US found that investments that were subject to more than 20 hours of due diligence showed an overall return of 5.9 times while those subject to less than 20 hours showed an overall return of 1.1 times). Therefore, mentors, if given the time to properly work with a venture, can use their expertise to investigate its fundamentals and provide commensurately detailed and useful advice.

The study also found some interesting results for investor involvement. It found that board membership, where appropriate, had strong positive effects on outcomes, as did regular involvement with the venture. The 40% of passive investors in the sample experienced more failures than the active investors, and the more active an investor was in terms of frequency of interaction the more likely the investment was to have a positive outcome (in the US study, investors who interacted with the managers of a venture a few times a month recorded an overall investment return multiple of 3.7 times; those who only interacted a few times a year produced an overall multiple of 1.3 times).

All of this evidence would suggest that more involvement is always better than less, if it were not for the results where angels had taken management roles. However, in the UK study, the 13% of investments where this had happened enjoyed significantly poorer returns. Clearly, this would suggest that the involvement of an experienced mentor can contribute substantially to the growth of a venture, but that the degree of involvement needs to be managed appropriately.

2. Using Networks to Support Entrepreneurs

Key findings

- To manage trust and expectations, programs clearly differentiate mentors from service providers.
- Brokers are of limited efficacy unless complemented with mentoring roles.
- Mentors act as gateways to other forms of support and as connectors.
- Mentors from the wider business community are more likely to sustain and evolve their relationships with their mentees than full-time professional mentors.

Individual Roles within the Networks

The case studies reveal the existence of the four roles displayed in Figure 2: mentors, brokers, service providers and sounding boards. As shown in the figure, although network members can serve several of these roles simultaneously or consecutively, this is not the case of mentors and service providers. Mentors do not serve as either current or prospective service providers (i.e. receiving upfront payment for a service) for the companies. Table 3 summarizes the typical profile and incentives of the different roles in the networks. Most networks combine a mix of roles but emphasize one over the others (Table 4).

Figure 2: Overlapping roles in venture acceleration networks

<table>
<thead>
<tr>
<th>Role</th>
<th>Typical profile</th>
<th>Main incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sounding board</td>
<td>A variety of industry expertise</td>
<td>Giving-back, entrepreneurial excitement, keeping up with tech. trends, investments, business opportunities</td>
</tr>
<tr>
<td>Service provider</td>
<td>Specialized expert</td>
<td>Business opportunities, salary, fees</td>
</tr>
<tr>
<td>Broker / Connector</td>
<td>Business development professional, management consultant with strong networks</td>
<td>Salary, fees, entrepreneurial excitement</td>
</tr>
<tr>
<td>Mentor</td>
<td>Serial entrepreneur with strong networks</td>
<td>Giving-back, entrepreneurial excitement, keeping up with technology, angel investing, management roles</td>
</tr>
</tbody>
</table>

Table 3: Relationships between advisor roles, profiles and incentives
Sounding boards validate or deny assumptions made by the ventures and provide strategic insight. The role of sounding boards is played to at least some extent by most advisors in the programs. A key function of mentors is to act as sounding boards. But the relationship of a sounding board with an entrepreneur need not be as deep and sustained as with a mentor. Sounding boards can provide valuable business or technical feedback while having limited interactions with entrepreneurs. Many entrepreneurs in Larta’s programs consider the Industry Feedback Session, which occurs only once during the course of a program, the highlight of the program. During these sessions individuals from a wide range of backgrounds ranging from IP lawyers to industry experts provide group feedback on the entrepreneur’s business strategy. VBDC’s Business Advisory Boards meet with the entrepreneurs for as little as six times per year for 90 minutes. Throughout the TechStars program, ventures have opportunities to setup meetings and network with individuals who provide them with targeted feedback on their business ideas. Most are successful entrepreneurs or represent companies in related sectors.

**Table 4: Program network roles**

<table>
<thead>
<tr>
<th>Programs</th>
<th>Sounding boards</th>
<th>Service providers</th>
<th>Brokers</th>
<th>Mentors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Trust</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catalyst RN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endeavor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC² India</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMP³rove</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INC Japan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovate VMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Larta</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIT VMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Octantis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMART</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TechStars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIE EAP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VBDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Network focus: ■ = primary, □ = secondary.

**Service providers** provide a wide range of services and have arm’s length relationships with companies. Two programs, IMP³rove and Carbon Trust, are entirely dedicated to fostering relationships between service providers and companies. Other service providers span areas ranging from law to banking, technology validation, marketing and graphic design. In the case of MaRS and IC², some of the business services providers are part of the program staff. The program staff and mentors often play a key role in connecting early stage ventures to trusted resources and helping them articulate their demands. Without proper references, inexperienced entrepreneurs can easily fall prey to disreputable service providers.

The role of brokers (or connectors) is to orient and introduce the companies to individuals with relevant value added. In most case studies the program management staff play
the role of brokers, by matching companies with appropriate mentors, service providers and investors. In the case of Carbon Trust, subcontracted consulting companies connect the ventures with trusted service providers while the staff connect them to sources of capital. Brokers seldom appear in a pure form in the case studies. Connections to relevant individuals often comes tied with coaching on why and how to approach them. In the case of the IC² India program, US-based brokers prepare Indian entrepreneurs for meetings, attend the meetings with them and offer feedback after each meeting. Endeavor’s Mentor Capital Program is dedicated to connecting middle-income country entrepreneurs to sources of capital but as its name indicates, includes a predominant mentoring component. The need for brokers also depends on the accessibility of local resources. InnovateVMS for example operates in a mid-sized town with a very strong tight knit networked community where everyone knows everyone. Brokers, as a separate group, are not needed.

Mentors have the broadest roles, acting as sounding boards and brokers, and bringing in knowledge and psychosocial support. While they act as sounding boards by challenging the entrepreneur’s assumptions, they do not judge their business ideas but rather guide them through the idea validation process through repetitive interactions. As one mentored entrepreneurs stated “it’s good to bounce ideas off experienced people.” As brokers, they generally draw from their social networks to make appropriate introductions. This leads to a reputational stake in the quality of the entrepreneur. In this way mentors are much more than advisors or coaches. They are trusted collaborators. As educators, they help build the mentee’s competencies in areas such as management. Marketing, IPR, etc., through learning by doing, rather than form curricula. And their their final closely related role is psychosocial support. This relates to value systems, self-worth, personal advice and issues of interpersonal relationships. In the city of Austin in the United States, the IC² mentors coach Mexican entrepreneurs of the techBA on the cultural side of doing business in the US. Many mentors report this as the largest challenge for innovative ventures entering the US market. Finally, mentors act as role mentor and help further a local culture of entrepreneurship.

Some part-time mentors continue their relationships with their mentees after the course of the programs, through continued mentoring, as angel investors or in management positions. Often, when mentorship is not done as a full-time occupation, such as in IC² or MaRS, the interest of the mentor in the venture goes beyond the life of the program. Many keep an informal relationship with the mentee, thus raising the value-for-money of the program. In the case of TechStars, one of the mentors invested in at least two companies over a few years. Some mentors view the mentorship program as a “very-long interview” for prospective investments. In other cases, the entrepreneurs realize the value-added of the mentors and invite them to join their companies in management positions. However, in none of the case studies were any of these outcomes explicit objectives of the programs. To the contrary, most programs made efforts not to raise the expectations of the ventures as to the future role of the mentors in their companies. Ventures are often discouraged from proactively seeking investments from their mentors in order to maintain a relationship of trust.
In their networks, each program relies on a different mix of sounding boards, service providers, brokers and mentors. Each of these has a different expected impact on the entrepreneur (Table 5).

### Table 5: Program focus and expected impact

<table>
<thead>
<tr>
<th>Program focus</th>
<th>Expected impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Networks</td>
</tr>
<tr>
<td>Sounding boards</td>
<td></td>
</tr>
<tr>
<td>Service providers</td>
<td></td>
</tr>
<tr>
<td>Brokers</td>
<td></td>
</tr>
<tr>
<td>Mentors</td>
<td></td>
</tr>
</tbody>
</table>

Impact: ■ = high, ■ = moderate.

The typical venture acceleration network is organized around a professionally-staffed nucleus, a core network of mentors or brokers, and an extended network of service providers and technical experts (Figure 3). Members of the core network have direct institutional, personal or contractual ties to the program management. Members of the extended network either have ties to the program management or to its core network. In most programs, the beneficiaries, early-stage ventures or small businesses, are in the same community as the core and extended network members. These are either geographic communities or communities by way of a common institution (e.g. university graduates). With exceptions, the mentors or brokers in the core network do not have direct market relationships with the ventures they serve in the form of either service fees or equity stakes. The case studies show that the most effective mentor-mentee relationships are guided by social norms (Box 5), although mentors often have professional (i.e. non-social) motives. Members of the extended network are typically service providers or relate to beneficiaries on the basis of market norms, i.e. they have or expect clear business opportunities with the beneficiaries. Sounding boards are in a more ambiguous situation, between the core and extended networks.
Box 5: Social norms versus market norms

We live simultaneously in two different worlds – one where social norms prevail, and the other where market norms dictate behavior. Social norms are those based on intangible costs or benefits such as a feeling, reputation and how we think of ourselves, while market norms revolve around more concrete costs and benefits such as wages, prices or rents. In communities based on social norms, people often contribute because of their passion for the topic or devotion to a product, group or individual. They provide feedback and ideas because they want to see the group or individual succeed.


Program Processes

Clear program milestones and timelines infuse performance pressure on the ventures. Most programs support entrepreneurs over predetermined timeframes, from as little as three months (TechStars) to 24 months (Catalyst RN). Some of these programs have informal or formal pre-defined milestones that entrepreneurs are expected to meet. The TechStars program is divided into a mentor match-making phase, a product development phase and a pitch phase, which ends with an investor pitching event. In Larta’s programs, entrepreneurs are expected to work on semi-tailored strategic documents during the course of the program and present their strategies in pre-scheduled industry feedback sessions. That said, in both of those programs there is considerable leeway to tailor the mentorship or advice to entrepreneurs’ needs. Milestones are used to put pressure on the entrepreneur and accelerate the failure of “bad” ideas and the regeneration of new ones.

Some programs do not incorporate standardized milestones but agree to them on an individual basis with the venture. These milestones typically relate to specific aspect of the ventures, such as fundraising, marketing, strategic planning, etc. A few of the programs are completely open-ended and have no time limits, such as MIT VMS, IMP3rove, MaRS and Endeavor. Regardless of program timeframes and milestones, in all cases where there is a mentorship relationship, the mentor requests the venture to do some incremental “homework” before the next meeting. The mentor always expects something back from the company. Pressure to deliver this “homework” ensures that ventures that are not committed to the program opt out.

Minimum guidelines for meeting frequencies can ensure that programs not lose momentum. These can vary from every week (TechStars) to every six to eight weeks (VBDC). Weekly meetings require more commitment from the mentor, and therefore a strong network. In the case of the Larta programs, mentors are expected to meet for 22 hours over a 9 month program but they typically exceed this amount. In a few cases (MIT VMS) the entrepreneurs and their mentors agree on the meeting frequency on their own.

Programs based on service providers tend to be open-ended in their objectives. In those programs, there is no engagement timeline or milestones for the venture. Rather, the venture is entitled to a certain number of hours of service provider “credit” which they can use as they see fit. This entitlement is either formally specified by the (Carbon Trust) or provided on
Matching entrepreneurs with several mentors can offer a broader variety of perspectives and connections than a single mentor, and creates checks and balances on conflicts of interest. SMART Singapore assigns two mentors per venture, MIT VMS assigns three to four while VBDC finds that eight to ten is an optimal number. In the case of TechStars there is typically a lead mentor, who spends more time with the venture, and non-lead mentors, who only meet occasionally. MIT VMS and VBDC offer group mentoring sessions, whereby entrepreneurs meet with several mentors simultaneously. This ensures that entrepreneurs benefit from discussions from mentors who do not agree on certain points. Some entrepreneurs expressed their confusions when faced with differing opinions among mentors, but also acknowledged the benefits of different viewpoints. Importantly, meeting in groups can help protect entrepreneurs from conflicts of interest. In groups, mentors are subject to peer pressure and less likely to try to exploit their position for unethical gains, such as selling a service to the mentor or investing in a competing company. Assigning multiple mentors also increases the chances that ventures will be left with some mentorship if mentors are too busy to attend many meetings. VBDC assigns eight to ten mentors per venture knowing that only 70 percent will likely attend any particular meeting. But large groups can also introduce rigidities in the program due to coordination problems. For this reason VBDC schedules a minimum of only six mentor sessions per year.

3. Creating Strong Networks

Key findings

- Networks built around highly-networked individuals and prestigious institutions result in network member commitment and in longer-lasting bonds.
- Networks built on financial compensation can be rapidly mobilized but their internal bonds are ephemeral and trust can be lower.
- Successful networks start small and high-quality and progressively build attracting power.

Features of Attractive Networks

To be effective, programs need to create strong networks that are attractive to both their members and the entrepreneurs they serve. Networks need to have a high enough value proposition to attract high-quality members and keep them engaged. The case studies reveal a variety of strategies (Table 6):

- Remunerating network members: Most examined programs do not remunerate their external network members, and when they do it is for a fee that falls short of the actual value of their time. Larta and Octantis compensate their mentors. In the case of Larta, a possible reason is the tight time constraints under which programs
operate under government contracts. As soon as they win a contract Larta must rapidly mobilize mentors to serve hundreds of firms and are accountable for their mentors vis-à-vis their government clients. This is not the case for programs such as MIT VMS where mentors do not commit to specific hours spent with the ventures. Remuneration is also required for service providers who are expected to conduct research or analytical work for the ventures (Carbon Trust, Catalyst RN). It is also used to quickly build up a network and its beneficiaries up to a critical mass. During its startup phase, IMProve paid consultants to conduct assessments and short consultations with enterprises. As for full-time mentors and brokers, they are always paid at market rates (MaRS, IC²). Sounding boards are never paid as their strength lies in being completely independent and representing potential business partners, customers and investors.

**Offering networking opportunities:** Many of the programs, specifically those that are rooted in local communities, attract their members by offering them networking opportunities with other mentors and service providers. MIT VMS hosts periodic meetings for all of the mentors. TiE hosts networking events for its members. Many of Endeavor’s local mentors are attracted by the prospect of networking with its global mentors who are global business leaders. The value of networking is highest when the network is exclusive and associated with a prestigious brand name or a network “champion”, which connects to the next point.

**Leveraging a prestigious brand:** Although a high-value brand is difficult to build from the ground up, programs that benefit from one can generally create a more attractive and hence selective network. For example, being associated with the MIT brand offers an attractive value proposition to mentors. Over several decades TiE has built up an exclusive “by-invitation-only” brand. In new EU member states, consultants were also attracted to the “EU” branding that they could leverage by participating in the IMProve network.

**Leveraging local social capital:** Some of the networks that have the greatest attractive power have at their core highly-connected super-achiever “champions”, typically the founder or manager of the program. They have social and business roles in their communities that bestow upon them significant social capital and hence the capacity to mobilize a network. They play the roles of mentors, connectors, brokers, sounding boards, business partners, investors and sometimes even politicians in their local communities. TechStars and its four founders is a case in point. Accumulating this type of social capital can be easier in tight-knit entrepreneurial communities such as Boulder, the home of TechStars. To a lesser extent, most other mentor programs in the case studies leverage an internal champion’s social capital. As social capital often diminishes with geographic distances, it is more difficult to leverage beyond local community networks.

**Providing access to unique ventures:** Mentors tend to be more willing to work with promising ventures that have a chance to succeed, i.e. ventures with unique market or technological value propositions. One reason is that mentors put their own reputation at stake by
connecting their mentees within own social networks. A second is that unique ventures offer opportunities for learning about new markets and technologies. A third is that mentors derive more excitement from the prospect of success. And a fourth is that some mentors are interested in investing or taking up management positions in high-potential ventures. All of the programs hence have some amount of selectivity with their ventures. Sounding boards typically have some of the same interests as mentors, for example finding new ventures to invest in. Service providers may also have incentives to lock-in relationships with promising ventures that will grow to become their customers in the future, which relates to the next point.

**Providing access to customers:** When service providers are included in the network, it is always the case that they are drawn by potential customers. This is not the case for mentors. Sounding board members may also be in search of customers, but this does not appear to typically be their primary intentions.

**Offering learning opportunities:** some of the programs enhance the attractiveness of their networks by offering entrepreneurship or innovation-related learning opportunities to their participants through short training courses and presentations. This is the case of TiE and IMProve.

### Table 6: Strategies to build a mentor/advisor network

<table>
<thead>
<tr>
<th>Program</th>
<th>Remuneration</th>
<th>Brand</th>
<th>Social capital</th>
<th>Ventures</th>
<th>Customers</th>
<th>Networking</th>
<th>Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Trust</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catalyst RN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endeavor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC² India</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMProve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INC Japan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovate VMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Larta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MaRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIT VMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Octantis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMART</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TechStars</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TiE EAP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VBDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Market Relationships in Human Networks

The case studies reveal that upfront financial compensation is not sufficient to build strong mentor or sounding board networks. Mentors who see value from networking within their entrepreneurial community do not need additional financial incentives. Moreover, the introduction of financial compensations limits the sustainability of the mentor-mentee relationship. When the mentor-mentee relationship is predominantly based on market-norms the relationship can weaken when the program comes to an end and financial rewards are terminated. At the far end of the financial compensation spectrum are mentors and brokers who are employed by a program on a full-time basis. In such cases, the relationship with the firm seldom outlasts the program. In the case of MaRS, professional mentors occasionally left for other careers,
leaving the ventures “orphaned” during some time.

Sounding boards do not expect to commit much time –their marginal costs of participation in the program are low - and do not expect fees. In fact, the most effective sounding boards have genuine interests in the ventures they are advising as networking, learning and investment opportunities.

In contrast, service providers expect to have or to develop commercial relationships with the companies. Developing a mentor network and a service provider network require very different approaches. To services providers, small businesses –and to an even greater extent early stage ventures- represent a fragmented market that imposes high business development costs. For innovation management consultants, the costs of “educating” SME clients to stimulate demand are prohibitive. Thus, service providers have high incentives to reduce their search costs and transaction costs by joining a network that offers them ready access to clients.

Building an effective network of service providers is easier to achieve although less scalable through trusted referrals than through standardization and certification. Demand for innovation management consultant training and certification can be weak without first building a critical mass of demand from enterprises. Conversely, opening a network to un-vetted service providers decreases the overall attractiveness of the network. The case studies suggest that referrals from trusted mentors and brokers are effective at connecting entrepreneurs to trusted service providers. They are more likely to guide entrepreneurs towards service providers that match their needs and face a reputational risk in the mentor’s or brokers business networks. However, this bottom-up approach is not easily scalable in the short run.

Network Development Typologies

The case studies bring out three approaches to developing venture acceleration networks.

- “Personality-driven” networks: regional, bottom up, pro-bono program guided by social norms, often coupled with professional motives.
- “Institution-driven” networks: regional, institution-based program guided by social norms, often coupled with professional motives.
- “Market-driven” networks: national and transnational, top-down program guided by market norms.

Most programs use elements of each approach.

Personality-driven networks have at their core highly-networked individuals who are champions for the programs. These champions have high-standing as business leaders or successful entrepreneurs in their regional communities, inspire trust, and have significant social capital (Box 6) to draw from. The exemplary “personality-driven” network is TechStars. The co-founders are prominent entrepreneurs and investors in the tight-knit Boulder, USA business community. They draw members of their mentor and service provider network from their close primary social network and trusted referrals from that network (Figure 4). The network is sufficiently interconnected to be self-policing. Any violation of trust or unethical behavior via the mentees will be socially sanctioned. The quantity and quality of the members and inter-
Nurturing Innovation: Venture Acceleration Networks

linkages in the network, and the credibility of the network “champion” makes participation in network activities such as mentoring and advising an attractive prospect. Hence, relationships between the mentors and ventures in the program become network relationships and benefit from its high level of embedded social capital. As such, these relationships are typically long-lasting, extending beyond the life of the venture program. Unlike in fee-based market relationships, mentors invest themselves as partners of the ventures.

Box 6: Entrepreneurship and social capital

Social capital is a concept that refers to the value derived from connections within and between social networks. These relationships are built on mutual belonging and trust. Benefits from social capital are derived through the goodwill that members of networks feel toward each other.

The question of whether entrepreneurs are more likely to succeed if they have access to greater resources and information has been extensively studied – for the social capital field this has meant looking at the connections that entrepreneurs have to networks of people who have been in business, are party to knowledge on a sector that might be useful, or can provide connections to financiers. Studies have shown that the personal networks that entrepreneurs can draw on add “external resources” to the “internal resources” of ambition and ideas that they already have.

One prominent theory divides the relationships that provide these extra resources into three types: structural, relational and cognitive. The structural aspect is essentially the ability that entrepreneurs have to access things through a network. The more access and the bigger or more extensive the network, the better it is. The relational aspect refers to the quality of the relationships in that network – how much mutual respect, trust and friendliness there is between the people involved. Finally, these networks are changed by the extent of shared norms and ideas – the cognitive aspect. A good example of this is the tolerance of entrepreneurial spirit and the risks attached to it. The more it is accepted the more a network is likely to be open to failure.

Interestingly, some studies have found that these factors work together in certain ways and that some of them might benefit particular types of entrepreneurs more than others. For example, there is evidence to suggest that budding entrepreneurs need to first start using their ties, then to start contributing to the norms and views of their network, and by doing so develop bonds of trust with people who can provide valuable support. Furthermore, high-tech entrepreneurs have been found to gain substantially from relationships and networks that have strong, trusting connections which give them the access to information and knowledge that they need.

Institution-driven networks have at their core organizations that confer a sense of social prestige and a common identity among its members. This is at the root of their attractive power. Universities can create rallying points for networks. Loyal alumni sometimes engage in activities such as offering personal recommendations, participating in alumni functions and in some countries providing financial support based on strong continuing feelings of association with the institution. This is the case of the MIT VMS program. It attracts alumni who have a sense of virtual community and non-alumni who wish to be associated with the university for a variety of reasons (prestige, culture, exclusive networking opportunities, etc.). TiE, the global South Asian entrepreneur organization, has created a sense of exclusivity through its invitation-only network, long before it formalized its mentor program in Bangalore. When these networks pair mentors and mentees in the same communities they create sustained relationship (Figure 5).

Market-driven networks rely on direct financial incentives to attract individuals and entice them to support entrepreneurs. They typically involve establishing contractual relationships with disparate individuals based on consultancy fees and salaries (Figure 6). These networks become guided by market-norms rather than social norms and are more ephemeral than the personality-driven and institution-driven networks. These networks are useful for programs that need to mobilize individuals who do not share a common geography or institutions, or highly-specialized expertise. The Carbon Trust Catalyst Program is an example of a market-driven network. The program hires contractors who help guide and direct entrepreneurs to subcontracting service providers nationwide.
Selection of Network Members

While sounding boards, service providers and brokers have a wide variety of backgrounds, mentors typically have extensive backgrounds in small business entrepreneurship. The case studies highlight that what makes a mentor is not an MBA or management consulting experience, but extensive experience with entrepreneurship and running a business. Most of the mentors in the case studies are themselves serial entrepreneurs who have succeeded and failed several times. Both success and failure are valued traits of a mentor, since this combination of experience provides the most complete insight on what works and what does not. Mentors tend to have at least a couple of decades of experience in entrepreneurship, although there are visible exceptions among mentors of web-based ventures (particularly social media) in view of the sector’s short history. Mentors are typically in fields closely related to that of the entrepreneur.

When entrepreneurs have several mentors, they bring in complementary skill sets rather than specialized entrepreneurship experience. Several of the case study programs match entrepreneurs with groups of mentors. Under those circumstances it is common that only a few of the mentors have small business entrepreneurship experience. The rest bring in complementary skills that the entrepreneur will need to draw on: technology expertise, regulatory knowledge, marketing experience, etc. This is the case of VBDC and MIT VMS.

Mentors are typically drawn from the local business community, but some programs incorporate long-distance mentoring. Mentoring is a predominantly local process for a variety of reasons. First, mentors leverage their personal networks to support their mentees. Personal networks tend to be mostly local since geographic proximity facilitates repeated interactions, information transfer and reputational risk. Second, it is easier to recruit local mentors. They may be specifically interested in giving back to and networking in their community to accumulate more localized business knowledge or grow their personal networks, and they may also be interested in finding investment or management because they wish to stay in their current location.

Nonetheless, a few programs offer long-distance mentoring. This occurs because, the program requires national coverage and it is not possible to have mentors in every single company location (Larta); or the program offers expertise that is not available in the local community (Larta, SMART, IC² India). In the latter case, the expertise is unique because it offers mentorship from entrepreneurs with
extensive experience in a specific sector; or mentorship by entrepreneurs who understand the global market and have foothold in the right business networks. Innovative clusters act as “nodes” of access to dense localized sources of knowledge on global markets and privileged business networks that are connected globally. Two examples are Silicon Valley and Boston. The rapid connections they offer enable the rapid validation of business ideas, the rapid access to business partners and hence the ability to accelerate ventures towards success or failure. Larta’s long-distance mentoring program provides for an initial first face-to-face contact between the mentor and the company to establish a human relationship and the trust that comes with it. Entrepreneurs and mentors report being comfortable with long-distance mentoring over email or the telephone. In some cases, when interactions with mentors is limited to a short program over the telephone and mentoring is performed across national borders, there can be difficulties in establishing a relationship of trust between the mentors and the mentees.

**Being a mentor is rarely a full-time position.** One of the values that mentors bring is their current knowledge of the marketplace and their personal networks. To be updated and useful, both of these require that the mentor be fully integrated and active in the marketplace. Mentors are active in a variety of professions. Many still run ventures of their own, some are work as consultants, investors or lawyers. They typically spend only a small fraction of their time mentoring one or a few companies. Some programs such as TechStars discourage mentors from working with more than one company. In a few cases mentors are full time positions (e.g. MaRS which has 10 full-time advisors).

**Successful programs start with small high quality networks.** There is a positive reinforcing relationship between the quality of the network and the quality of the entrepreneurs enrolling in the program. A low-quality network will attract low-quality entrepreneurs, who will in turn make it difficult to attract high-quality network members. For this reason, programs start with a small handpicked network and a small number of ventures and scale up slowly over time. Small programs such as TiE EAP and SMART Singapore struggle to find the right match of mentors for their ventures, but prefer to face this struggle rather than to decrease the quality of the network. For the time being, TechStars has decided not to scale up its program outside of its four existing locations of 40 companies per year, in order not to compromise its mentor network. Some programs build up their networks by first attracting a few highly recognized individuals, making it easier to attract others.

**Program managers screen their network members through their social networks, with mentors receiving the most scrutiny.** All of the programs use informal processes to identify and invite sounding boards, brokers, service providers and mentors to their networks. The only program which incorporates a formal screening process is IMProve, with a multi-level training and certification scheme for innovation management, but to date, no consultant has yet to be certified and the platform remains open to all consultants having gone through IMProve’s brief training program. Among the programs in the case studies, mentors are screened the most carefully. They are the centerpiece of most programs and their effectiveness relies on the trust they establish with the mentees. Some program managers typically only accept
mentees who they know personally or are recommended by a trusted source (TechStars). At MIT VMS, new mentors are accepted by invitation only from existing mentors, who put their reputation at stake. At TiE EAP, mentors are selected from among the Charter Members of the TiE network, which is by invitation of existing Charter Members only. In mentor-based programs, the mentors themselves typically play a role in referring the entrepreneurs to their trusted personal network of service providers.

**Match-making of mentors and mentees is critical to a program’s effectiveness and is best achieved through an iterative process.** All mentor-based programs match mentors from within their networks with entrepreneurs on the basis of their profiles. Mentors are typically asked for their preferences first. In several programs they are free to turn down companies they do not wish to work with (TechStars, VBDC). Several programs do not provide many mentor options to entrepreneurs and this is reflected by uneven satisfaction among mentees. Several programs consider mentor-matching to be the centerpiece of their effectiveness. In effect, personal chemistry plays an important part of the productivity of the relationship. In both TiE EAP and TechStars ventures meet with many mentors for several weeks before establishing a mutually-agreed relationship with a mentor. TechStars refers to this process as “mentor-dating”.

**Small firms often need external match-making with consultants, due to a lack of understanding of the market.** Although the IMP³rove program allows firms to select from within a descriptive database of consultants, some small firms express the need to be actively matched to the right consultant by an independent party. As small firms, they do not often understand their needs or what types of consultants are right for them. This match-making role is played by the subcontractors in the Carbon Trust program.

**When well managed, larger networks are more effective, but there is no optimal size.** Networks range from fewer than 10 people (VBDC) to several hundreds (TechStars and IMP³rove) (Table 7). In general, the larger the network-to-beneficiary ratio the easier it is to find a right match between a network member and a company, a critical success factor for mentor networks. Programs find it difficult to grow a large network without compromising on quality. Thus IMP³rove’s large network suffers from uneven consultant quality while TechStars cites growing the network to be a barrier to scaling up its program.

**Table 7: Size of network in each program**

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of people in the network</th>
<th>Network/beneficiary ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Trust</td>
<td>variable</td>
<td>variable</td>
</tr>
<tr>
<td>Catalyst RN</td>
<td>variable</td>
<td>variable</td>
</tr>
<tr>
<td>Endeavor</td>
<td>&gt;2000</td>
<td>up to 4*</td>
</tr>
<tr>
<td>IC India</td>
<td>variable</td>
<td>variable</td>
</tr>
<tr>
<td>IMP³rove</td>
<td>501</td>
<td>0.18</td>
</tr>
<tr>
<td>INC Japan</td>
<td>variable</td>
<td>variable</td>
</tr>
<tr>
<td>Innovate VMS</td>
<td>140</td>
<td>2.4</td>
</tr>
<tr>
<td>Larta</td>
<td>54**</td>
<td>0.15</td>
</tr>
<tr>
<td>MaRS</td>
<td>70</td>
<td>0.7</td>
</tr>
<tr>
<td>MIT VMS</td>
<td>140</td>
<td>0.64</td>
</tr>
<tr>
<td>Octantis</td>
<td>200</td>
<td>8</td>
</tr>
<tr>
<td>SMART</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>TechStars</td>
<td>278*</td>
<td>6.95</td>
</tr>
<tr>
<td>TiE EAP</td>
<td>40</td>
<td>10-20</td>
</tr>
<tr>
<td>VBDC</td>
<td>8 - 10</td>
<td>8 - 10</td>
</tr>
</tbody>
</table>

*varies by country  
**core mentors only

**Network to beneficiary ratios vary across programs, but this is partly due to network utilization rates.** While certain programs such
as TechStars and Octantis retain a continuous large pool of networks, from which some will be much more engaged in the program than others at different times, other programs operate on a just-in-time network basis. This is the case of VBDC and SMART, where mentors are recruited from the local community as needs arise. Some programs, such as Larta and IMP\textsuperscript{3}rove have very small annual network-to-beneficiary ratios (Table 7). This means that network members need to be engaged with more than one company throughout the year, sometimes serving multiple companies at a time. In order to readily secure network members for large numbers of companies these programs need to include strong incentives in their models. Both rely at least partially on market norms. Larta’s mentors are paid and IMP\textsuperscript{3}rove’s consultants expect immediate business opportunities from their involvement in the program.

4. Selecting Ventures

Key findings

✦ Many programs avoid picking winners but include mechanisms to help non-performers self-select out.

✦ For programs focusing on R&D commercialization, picking the “right” technology is as important as the team. For programs involving early-stage ventures, picking the right team is more important.

The number of companies in a program varies considerably with the program’s business model. It varies from one per year to several hundreds per year (Table 8). “High touch” programs that involve a high degree of support and coordination from management staff tend to have fewer participants. This is the case of TechStars, where the program staff interacts with startups on a weekly basis, organizes networking and educational events, and monitors startups to ensure that they reach key milestones. The IC\textsuperscript{2} India program is also of limited size, as it involves heavy business development and coaching by program advisors. In contrast, many ventures enrolled in the MIT VMS have never met the management staff and schedule meetings with their mentors at their own pace. IMP\textsuperscript{3}rove’s approach is to act as a network enabler rather than a network manager, it is hands-off and automated, and is hence able to scale up.
Larta’s approach is more structured and intensive than MIT’s VMS, but has been effectively scaled up through by leveraging junior program management staff. Other programs are typically only staffed by a duality of senior staff and administrative staff.

Table 8: Average annual number of companies participating in each program

<table>
<thead>
<tr>
<th>Program</th>
<th>Participating companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Trust</td>
<td>40</td>
</tr>
<tr>
<td>Catalyst RN</td>
<td>10</td>
</tr>
<tr>
<td>Endeavor</td>
<td>506</td>
</tr>
<tr>
<td>IC² India</td>
<td>60</td>
</tr>
<tr>
<td>Improve</td>
<td>283</td>
</tr>
<tr>
<td>INC Japan</td>
<td>200+</td>
</tr>
<tr>
<td>Innovate VMS</td>
<td>58</td>
</tr>
<tr>
<td>Larta</td>
<td>350+ in several programs</td>
</tr>
<tr>
<td>MaRS</td>
<td>100</td>
</tr>
<tr>
<td>MIT VMS</td>
<td>221</td>
</tr>
<tr>
<td>Octantis</td>
<td>25</td>
</tr>
<tr>
<td>SMART</td>
<td>10</td>
</tr>
<tr>
<td>TechStars</td>
<td>40 in 4 locations</td>
</tr>
<tr>
<td>TIE EAP</td>
<td>2 to 4</td>
</tr>
<tr>
<td>VBDC</td>
<td>1</td>
</tr>
</tbody>
</table>

While most programs screen beneficiaries, many are careful not to “pick winners”. Together, the programs in the case studies serve a broad variety of beneficiaries. Some are individuals who aspire to commercialize R&D, start a new company, or both; some are medium-sized companies in traditional sectors in search of new modes of growth; yet others are early stage companies with no particular R&D expertise but new business ideas to conquer new markets. Although all have in common a drive for entrepreneurship and innovation, none of the case studies combine all of these groups into a single program. In sum, each program have elements of beneficiary selection, whether very loose or very restrictive. Programs use three types of criteria to screen beneficiaries, as shown in Figure 7: affiliation, profile and potential for success.

Affiliation with an elite institution can help attract high-quality mentors. Some programs are exclusive by nature and require that the venture be affiliated with an educational institution or with a region. Programs that are affiliated with educational institutions, such as MIT VMS and Catalyst RN, are open to students, alumni, faculty and researchers. Their aim is explicitly either focused on the commercialization of university R&D (Catalyst RN) or educational (MIT VMS). In the case of MIT VMS, where the goal of the program is one of entrepreneurial education, keeping the network exclusive makes it possible to attract high-quality mentors. This is particularly true for attracting those mentors who are MIT alumni and wish to give back to the institution.

Programs that require regional affiliations generally have in their mandates broader economic development goals (MaRS) that go beyond R&D commercialization or education. They are funded by regional governments and aim to create jobs and wealth in their communities. Other programs are completely open and invite any ventures to apply (TechStars).
Programs are generally tailored to specific firm profiles. All case study programs are designed for particular venture profiles. IMProve stands out as being the only program that addresses the needs of companies in their later phases of development only. The program excludes companies that are less than two years old. This is linked to the different nature of support required for early stage companies that are still validating their business models and learning general entrepreneurship skills from more mature companies that are searching for a growth “algorithm” through strategic planning.

Most programs addressing early stage ventures are focused on a particular stage of their development. In the case of SMART and Catalyst RN, the technology at the core of the business idea is still in the laboratory. Their focus is to prepare technology projects before they enter the market, rather than to help entrepreneurs face the brutal realities of the market. TechStars focuses on very early stage ventures, most of which do not yet have angel funding. Many TechStars ventures consist of a team of aspiring entrepreneurs who have yet to even register their companies. In contrast to SMART and Catalyst RN, TechStars entrepreneurs are fully dedicated to their ventures, and are hence fully “immersed” in the market. Still, other programs such as VBDC are only open to revenue-generating companies. This is a requirement for paying for VBDC’s incubation services. Endeavor supports firms that have already proven that they are “winners” with existing growth and revenue streams of more than USD 1 million per year.

Among the programs addressing early stage ventures, some focus on single sectors. In the case of VBDC and Carbon Trust, focus sectors reflect the strategic priorities of their sponsoring national and regional governments (biosciences and low-carbon technologies). VBDC’s focus on a single sector is also based on its stakeholders’ aim to build a regional innovation cluster. TechStars focuses on web-based and software ventures, mostly due to the background of the program’s founders and the incubation aspect of TechStars, which groups ventures under one roof with ample opportunities to interact. As a three-month program, TechStars is also more suitable to the fast pace of ventures that aim to create new markets from existing technologies (i.e. ICT).
than the long development time and capital requirements associated with the development of entirely new technologies. Web-based ventures are also particularly well suited for a short time to market since they do not rely on a putting together complex supply chains. Several programs are specifically tailored to R&D-based ventures (Larta, IC² India) associated with their R&D commercialization roles. Others have a mix of R&D and non-R&D ventures (Octantis). Programs that focus on specific sectors are able to support their ventures with a smaller pool of mentors, since they do not need to span as broad a range of expertise.

The beneficiaries of programs concerning early stage ventures tend to have a limited amount of entrepreneurial experience. They mostly do not have either the skills or network to start and grow successful ventures. Nonetheless, even entrepreneurs with several years of experience can benefit. One TechStars entrepreneur was starting his second venture and yet attributed significant value to the program.

**Most of the programs aim to support companies with the highest potential for success.** Some of the programs are engaged in “picking winners”, others actively try to attract and retain winners through self-selection, while others yet are open to all firms. Programs have two motivations for supporting ventures that will become successful.

- The first motivation is to secure the reputation of the program from among its financial sponsors and investors. For programs that are funded by public sources or private donations (MaRS, InnovateVMS) successful ventures can be used as a reflection of the program’s value added. For programs that are funded by investors (TechStars), only successful ventures will yield financial returns.

- The second motivation is to attract high quality mentors and advisors in their networks. In most programs, with the possible exception of IMProve, mentors and advisors are attracted to the program because of opportunities to work with entrepreneurs who are highly motivated, are eager to learn, have business ideas that can help keep them keep abreast of latest technology trends, and offer potential opportunities for a management or investment position in a successful firm. These factors explain why many innovation acceleration programs are eager to focus on potential winners.

Programs have two focus points for actively picking potential winners: the technology and the team. Programs focused on R&D commercialization or “technology push” (SMART, Larta, Carbon Trust, IC² India) examine first and foremost the technology and its market potential. Programs focused on creating new markets (TechStars, Endeavor) tend to put much more emphasis on the entrepreneurial team. The business idea is important, but secondary. Teams that show the ability to “interpret” the market and execute their business strategies are selected. Endeavor’s multi-stage interview process is highly involved and can last up to a year.

Some programs aim to attract ventures with the highest prospects for success but do not actively select them among applicants because of either a mandate to serve their constituents (MaRS) or, in addition to this, a belief that it is impossible to pick winners (MIT VMS). MIT VMS accepts any venture that “is legal and
does not defy the laws of physics”. Nonetheless, MIT VMS already has an important quality screening filter in the form of an institutional affiliation with MIT. MaRS accepts all ventures but their mentors apply “tough love” from the very beginning of the program, assigning demanding tasks to ventures between mentor meetings. Ventures that are unable or unwilling to complete this “homework” generally do not see a point in remaining in the program and opt-out on their own. If needed, mentors can discuss this with ventures and advise them to discontinue the program. Nonetheless, these programs still have minimum filters. Ventures that have not demonstrated a minimum level of prior effort in establishing a business concept are turned down.

In the case of IMP³rove, there is no attempt to screen firms. The program’s value is enhanced with the number of firms taking the innovation management assessment, since this increases the benchmarking database and creates a larger pool of demand that can attract consultants to the platform.

**So how should program beneficiaries be screened?** The answer depends on the objectives of the program. The opportunity space for innovation can be divided into three horizons:

- **Horizon 1** opportunities include technologies already used by the enterprise and markets already served by that enterprise.
- **Horizon 2** opportunities include technologies not yet used by the enterprise and markets not yet served by that enterprise.
- **Horizon 3** opportunities include technologies or markets that have not yet been created.

**Figure 8: Opportunity horizons of the programs**

All of the programs are uniquely tailored to ventures tackling horizon 3 opportunities, with the exception of IMP³rove, which serves a broader set of enterprises (Figure 8). A fundamental difference between IMP³rove and other programs is that while IMP³rove is focused on helping companies with internal processes to create a favorable environment for innovation, the other programs focus on external processes to accelerate the validation of new market and technology ideas. This second group of programs focus on companies that do not yet have many, or any, internal processes to improve. They help ideas fail early, quickly and inexpensively. The case studies reveal that the quickest way to accelerate market validation is by focusing on
ventures that emphasize creating new markets rather than new technologies (TechStars). When programs are dedicated to commercializing new technologies, the potential payoffs can be higher due to higher market entry barriers, but the process takes longer and ventures do not have the flexibility to completely reinvent themselves since they are wedded to a technology (SMART, Carbon Trust). Most programs operate somewhere in the middle, promoting ventures that seek opportunities in either new markets or new technologies.

The case studies show that network programs can accommodate a broad range of sectors. When programs screen for specific sectors, this is typically related to a higher-level objective related to strategic priorities. The TechStars model shows that mentor programs are particularly well-suited for fast-paced sectors such as ICT with limited supply chains, low capital requirements and that rely on creating new markets.

The case studies also show that screening beneficiaries can help attract higher quality mentors, and hence enhance the value of the program for beneficiaries and stakeholders. This can be done by requiring an affiliation with a prestigious university, by selecting ventures on the basis of their technology (a risky approach), by selecting ventures on the basis of the entrepreneurial team, or by allowing ventures to self-select. Publicly-managed programs do not have a history of being successful at picking winners. For these programs institutional affiliation and self-selection are more suitable options. In all cases, recruiting ventures that are local—at least for the duration of the program—can facilitate the creation of stronger networks.

5. Financing the Program

Key findings

- Program costs can be very low for minimalist programs.
- It is not clear that programs can become financially-sustainable on the basis of returns from equity stakes of beneficiaries.
- Most programs, even private programs, rely heavily on public subsidies, private donations and corporate sponsorships.

Program Costs

Program costs vary highly, from a few thousand to tens of thousands USD per year (Table 9). Costs vary mainly on the basis of the amount of required program management attention. “High touch” programs such as TechStars tend to be much more expensive than “light touch” programs such as Larta or than “hands-off” programs such as IMP³rove.

IMP³rove differentiates itself from other models in its low marginal costs per participating company. The vast majority of costs are fixed costs related to the initial development of the online platform and the initial population of the benchmarking database. The marketing of the program and training of consultants are the only variable
costs. Once it is able to reach a critical mass and stir up demand from SMEs and consultants, IMP³rove can be expected to run at a rather low annual cost.

### Table 9: Program cost estimates

<table>
<thead>
<tr>
<th>Program</th>
<th>Average cost per venture (USD 1000’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Trust</td>
<td>115</td>
</tr>
<tr>
<td>Endeavor</td>
<td>32*</td>
</tr>
<tr>
<td>iC² India</td>
<td>23-100</td>
</tr>
<tr>
<td>IMP³rove</td>
<td>~3**</td>
</tr>
<tr>
<td>Larta</td>
<td>4 to 13</td>
</tr>
<tr>
<td>MIT VMS</td>
<td>2</td>
</tr>
<tr>
<td>Octantis</td>
<td>2.4</td>
</tr>
<tr>
<td>TechStars</td>
<td>40-60</td>
</tr>
<tr>
<td>VBDC</td>
<td>2</td>
</tr>
</tbody>
</table>

*varies by country
**marginal costs are estimated to be much lower

### Sources of Funding

The case studies show that financial self-sustainability for a standalone venture acceleration network program is not a trivial task. Almost all programs rely on some form of financial or in-kind subsidies or support from or from their parent institution (Catalyst RN). Principal sources of funding include:

- Subsidies from, or contracts with, public sources (Larta, IMP³rove), from partnering universities (Octantis) and donations from philanthropists (MIT VMS, Endeavor).
- Sponsorships from (typically private) organizations in return for brand visibility or privileged role in the program (VBDC).
- Cross-subsidies from other activities performed by the host organization (MIT VMS).
- Returns from equity investments in ventures (TechStars).
- External investors (TechStars).

### Participation fees are rarely a financing option.

In very few of the case studies are early stage ventures asked to pay program participation fees, and when they are, these are very low and reimbursed by public support measures. Ventures, even those recognizing the high value added of the programs, generally expressed their reluctance for paying program fees for two reasons: the first being that early stage ventures do not typically have the revenues or access to credit to pay for such programs; and the second being that for many ventures the precise value added of mentoring is that it was not based on pure market relationships but on social norms and trust. Some ventures expressed discomfort with the prospect of paying for a mentor program, or paying mentors directly, on the premise that it would reduce the transparency of the relationship with mentors by introducing doubts onto their and the program’s ulterior motives (i.e. moral hazard). While ventures showed reluctance to pay for the programs, in some cases, they were willing to incur out-of-pocket costs associated with the program, such as travel.

In contrast to early stage venture programs, the only network program for mature companies among the case studies, IMP³rove, requires that participating firms pay consultants. Yet, the program recognizes that willingness to pay for innovation management consulting is very low among SMEs and institutes various incentives such as free innovation assessments to lure in companies. Participating consultants also recognize this low market demand and generally offer SMEs a free initial working session following the innovation assessment. In order to attract sufficient demand for the program in its initial development stage, IMP³rove also subsidized consulting sessions. IMP³rove has also found it
difficult to raise revenue through training and certification services and remains dependent on EU subsidies to date.

Subsidies and donations account for the lion’s share of most program budgets. All of the programs associated with universities received at least in-kind subsidies from the host institution (free rent for MIT VMS) and in some cases outright financial subsidies (Catalyst RN). In some cases, programs receive subsidies from universities with which they collaborate (Octantis). Regional programs such as VBDC and MaRS received most of their funding from public subsidies. Endeavor raises significant funding from private donations and from their board member contributions. Both MIT VMS and MaRS were launched with seed capital from private individuals.

Cross subsidies from other activities can be useful supplements. Some programs are able to draw from revenues generated from non-mentoring activities. A notable example is TiE EAP which receives no public subsidies and functions autonomously, although a pool of angel investors and venture capitalists have pledged support to EAP. Its revenues are largely covered through monthly membership fees. Members, who include seasoned entrepreneurs, have access to a wide range of entrepreneurship training, networking and mentoring opportunities which they are willing to pay for. Because TiE membership is by invitation only, the network’s exclusivity increases its value. In contrast to the other programs, TiE’s formal mentoring program in Bangalore, TiE EAP, grew out of the TiE network, and not vice versa. Both MIT VMS and MaRS also draw revenues from consulting services when they support the development of other mentoring programs.

Corporate sponsorships can also be used creatively to complement operational budgets. Sponsorships differ from donations in that sponsors typically expect to something in return. Sponsors include private individuals as well as organizations such as companies. Several programs offer an array of sponsorship schemes, ranging from several thousand USD to several tens of thousands of USD (TechStars, VBDC). Sponsors typically benefit from added visibility (e.g. logos on the website) and access to ventures during social and networking events. In the case of VBDC, sponsors participate in the governance of the program and in selection committees. Both TechStars and VBDC accept in-kind sponsorships through business services. In the program case studies, sponsors only covered a small share of total costs.

Returns from equity investments in ventures are an option rejected by some programs and embraced by others. Several programs and ventures made moral hazard arguments with regards to equity stakes in ventures. In effect, in many cases, an investor’s profit-maximizing strategies are not aligned with the investee’s (Box 7). Hence, many of the programs (MIT VMS, Larta) prohibit mentors from taking equity in the firms during the course of the program. Their aim is to protect inexperienced ventures from predatory investors wishing to exploit their trusted mentorship positions to their individual benefit. However, no program prevents mentors from investing in the ventures if they recuse themselves from mentoring the venture or once the venture has exited the program. Only one program, TiE EAP, is based on mentor equity stakes in the ventures. This program is still relatively new and in its second year experienced difficulties in matching mentors and ventures, so it is unclear whether this is a viable business
model. In another program, TechStars, although mentors are prohibited from investing in the ventures, the program itself took 6 percent of common stock equity stakes in participating ventures. TechStars has at least broken-even on its 2007 program through investment returns from. Subsequent years have not generated as many exits but this could be largely a function of the global financial crisis which imploded the US angel and venture capital (VC) markets.

External investors can help raise financing when the program takes venture equity stakes. TechStars’ equity stakes in its ventures opens up a source of funding that is unavailable to other program: private capital. TechStars raises funding for each of its programs from private investors. The founders of TechStars invest in the program using their personal wealth, but funding is also raised from external investors. These investors are not disclosed to the public.

Should a venture network aim for self-financing without donations or subsidies? Most of the programs in the case studies where not financially self-sustainable. IMProve, in spite of very low marginal costs is still not self-sustainable after more than four years of operations. TechStars was at least profitable for one of its first four years, but the financial crisis and the typical holding time for angel investments obscures whether this will be so in the long run. TiE EAP’s self-sustainability relies on being embedded in a unique and highly successful global entrepreneurship network. It is also a very small program so the network can absorb its costs. In sum, there is no overwhelming evidence that any standalone venture acceleration network programs can be self-sustainable, let alone outside of innovative regions with existing strong communities of entrepreneurship such as Boulder, the home of TechStars.

Box 7: Investor motives and venture growth

There are scenarios where angel investors may advise their invested companies to take decisions that will not favor the company in the long run. Consider the case of an angel investor advising an investee on seeking additional capital at time \( t_{capital} \). The angel investor may believe that additional capital will allow the company to grow faster and improve its chances of exit (line \( b \) in the chart) but may still advise against it to maximize his or her individual profit at a greater risk (line \( a \) in the chart). If the investor advises the company against seeking additional capital at time \( t_{capital} \) his or her equity will be worth \( V_1 \) investor at time \( t_{exit} \). If instead, the investor advises the company to seek additional capital and a new investor dilutes the angel’s equity share in half, the angel’s equity at time \( t_{exit} \) will be worth \( \frac{1}{2} V_2 \) investors, which is less than \( V_1 \) investor.

Whether the program’s aim is to be financially self-sustainable - i.e. free of in-kind or financial subsidies or cross-subsidies - should be a reflection of both its objectives and the innovation ecosystem in which it operates.
Several program objectives are not compatible with self-sustainability:

- The more upstream a program operates in the innovation process the lower the share of private returns with respect to social returns, due to the well-known externalities associated with innovation. Hence, it is likely that on average, network programs aiming to commercialize R&D from research institutions cannot be structured to turn a profit.

- Programs that are open and serve an educational function are unlikely to reach self-sustainability. Although MIT VMS is the most explicit about serving an educational function, most of the other programs inherently do so and hence generate substantial learning externalities that cannot be captured by the investor. Entrepreneurs participating in mentor programs will have acquired stronger entrepreneurship skills and stronger networks that will ultimately benefit investors in any subsequent ventures they decide to launch, without passing on these learning and networking costs to those investors.

If a program aims to be financially self-sustainable without grants or donations, equity stakes appears to be the only option to explore. The case studies suggest that raising funding from participation fees is not realistic and that commercial sponsorships can only cover a small fraction of costs.

The case studies also suggest that some programs and entrepreneurs are uneasy about equity stakes, so equity stakes could result in lower demand for the program and hence a lower quality of participants. This may be particularly true in environments where there is limited social capital or trust within the business community. One place to look for hints on types of returns to expect from equity stakes are angel groups, although not all angel groups have structured mentoring processes and they often invest in ventures that are at later stages than some of the men programs in the case studies. Data from studies of angel groups in the US and the UK show that more than half of the investments result in a loss. Only a small share of exits result in considerable returns, and only after a long holding period (Box 8). Hence, venture acceleration networks hoping to rely on equity revenues to self-finance should have large investment portfolios and patient capital. Nonetheless, it is too early to judge whether this is a viable strategy. And in most countries, investment returns to angel investing are likely to be much lower than in the US and UK.
6. Choosing an Organizational Structure

Key findings

✦ There is no “right” program organizational structure. It depends on the program’s objective and the local context.
✦ Program can be operated with very lean staff and flexible structures.

Program Delivery Model

The case studies illustrate five program delivery business models: 1. in-house, 2. partially outsourced, 3. outsourced, 4. consortium, and 5. franchise. The case studies do not reveal any particular program delivery model trend in relation to the type of organization (public, private, academic, NGO) that founded or seeded the program (Table 10).
Table 10: Program delivery models

<table>
<thead>
<tr>
<th>Delivery Model</th>
<th>Instigator</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-house</td>
<td>Non-profit</td>
<td>MaRS, TiE EAP</td>
</tr>
<tr>
<td></td>
<td>University</td>
<td>MIT VMS, Catalyst RN, SMART</td>
</tr>
<tr>
<td></td>
<td>For-profit</td>
<td>TechStars</td>
</tr>
<tr>
<td></td>
<td>Government enterprise</td>
<td>INC Japan</td>
</tr>
<tr>
<td>Partially outsourced</td>
<td>Government enterprise</td>
<td>Carbon Trust</td>
</tr>
<tr>
<td>Fully outsourced</td>
<td>Government</td>
<td>IMPprove, Larta</td>
</tr>
<tr>
<td>Consortium</td>
<td>Mix</td>
<td>Octantis, IC² India, VBDC, Innovate VMS</td>
</tr>
<tr>
<td>Franchise</td>
<td>Non-profit</td>
<td>Endeavor</td>
</tr>
</tbody>
</table>

In-house programs are run by all types of organizations. As non-profit organizations, MaRS was founded and launched by philanthropic business leaders, and TiE by entrepreneurs. Both operate as flexible organizations governed mostly by private sector representatives. Two universities, MIT and University of Michigan, operate their programs as integral units of the universities. MIT under the Provost’s Office, the highest possible management structure, in order widen its reach to fragmented stakeholders (e.g. engineering school vs. business school). The University of Michigan mentoring program is operated out of its U-M Tech Transfer office, an integral unit of the university. This provides it with the ability of integrating mentoring functions as part of other technology transfer service such as licensing, and offer full-package solutions to university researchers. TechStars, the only private sector program in the case studies, is established as a limited liability company. In each city, it establishes separate time-limited companies that raise their own funding for one or more cohorts of startups.

This allows TechStars to tap into investors and sponsors with ties to particular cities and run the programs as investment funds. On the government side, INC Japan, a publicly-owned VC fund, operates its own innovation network program. The program has had difficulty obtaining buy-in from the investment are of INC Japan who are responsible for more mainstream activities.

Outsourcing specific program components can provide access to specialized external capacity but program fragmentation can also reduce effectiveness. The Carbon Trust operates a mentoring, brokering and advisory service program through its own staff as well as through contractors and subcontractors. This enables it to draw on the experience of several organizations throughout the UK with extensive experience in the R&D commercialization, as well as of private consultants. This partial outsourcing model results in a fragmentation of the brokering and mentoring components of the program. Other programs demonstrate that both functions are best done in synergy.

Full outsourcing provides governments with flexible ways to experiment with and deliver programs, but do not always shield programs from bureaucratic constraints. Several government agencies in the US and abroad outsource their mentoring programs to Larta. This creates economies of learning and economies of scale since Larta relies on a single pool of staff, mentors and advisors. IMPprove, operated through a consortium contracted by the EU, also relies on a single pool of consultants and on benchmarking data that spans the EU and beyond. Those examples also show that in some cases, government clients prescribe contractual conditions that favor short-term measurable outputs (e.g. strategic
Nurturing Innovation: Venture Acceleration Networks

plans delivered; size of the consultant networks) over long-term outcomes (e.g. investment raised by companies over five years; sustainability of the consultant network).

Implementing network programs via consortia of public, private and academic sectors helps mobilize a wide range of complementary assets and ensures that the stakeholder incentives are aligned with the program’s objectives. VBDC was founded as a non-profit organization by such a consortium. Octantis and InnovateVMS were founded as non-profits by private sector associations and academic sector organizations. All of these programs source some of their ventures and mentors from local universities and private sector associations while aiming to benefit overall private sector development in the region.

A local franchise model can help with program scalability and ensure that there is sufficient local demand for the program. Endeavor’s approach is to launch mentoring programs in different countries through licensing agreements with local franchises. The franchises benefit from technical support, good practices, global services and global mentors from the Endeavor headquarters. Although Endeavor plays a role in coordinating the creation of the franchises, they are independently governed and funded. The franchises can benefit from Endeavor’s global experience while tailoring their programs to the local environment. The TechStars experience suggests that it might be more challenging to expand geographically through subsidiaries.

Program Management

Venture acceleration networks can be operated with very lean staffing structures. Larta serves several hundred companies per year with a dozen staff. IMP³rove serves more than two thousand with roughly the same number of staff (Table 11). These programs have over the years standardized many of their processes. Programs with smaller venture-to-staff ratios either carry out some of the mentoring and advisory work in-house (MaRS, Carbon Trust) or are have yet to benefit from economies of learning, and economies of scale (SMART, Endeavor’s new country offices). Programs that offer broad arrays of services also require more staff (MaRS, Endeavor). Finally selectivity has a price. Programs that are pro-active in searching for high-potential entrepreneurs and employ a thorough screening process require more management staff (Endeavor).

Table 11: Program staff

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of full-time staff</th>
<th>Venture to full-time staff ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Trust</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Catalyst RN</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Endeavor</td>
<td>166</td>
<td>3</td>
</tr>
<tr>
<td>IMP³rove</td>
<td>10</td>
<td>283</td>
</tr>
<tr>
<td>Innovate VMS</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Larta</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>MaRS</td>
<td>51</td>
<td>2</td>
</tr>
<tr>
<td>MIT VMS</td>
<td>3.5</td>
<td>63</td>
</tr>
<tr>
<td>Octantis</td>
<td>18</td>
<td>1.4</td>
</tr>
<tr>
<td>SMART</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>TiE EAP</td>
<td>1</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Program management staff have advisory roles too, and for this they need relevant profiles. In the vast majority of case studies, staff provides some level of guidance, direction or mentorship to companies. The TechStars
management spends significant amounts of time providing feedback to companies on their business ideas and pitch. Larta’s senior management staff act as mentors to some of the ventures in their programs. In some programs, staff act as facilitators during the mentoring sessions (VBDC, Octantis). These roles require some level of experience with entrepreneurship and business. Typically, the head of the program is an experienced former serial entrepreneur, investor or business leader. Like the mentors, few of the staff have formal educational backgrounds in entrepreneurship. They gain their knowhow through experiential learning.

An important function of program management is to manage trust with mentors. The success of a mentor program is largely related to the “chemistry” established between mentors and their venture mentees. In one case, a Russian entrepreneur mentored over the telephone from another country was suspicious that the mentor wanted to “steal” his technology because the mentor was advising on foreign licensing arrangements over foreign direct investment as a market entry strategy. Inexperienced entrepreneurs are particularly prone to manipulation by unscrupulous service providers (e.g. lawyers) and mentors and are also more likely to disclose little about their company, even when this could generate useful feedback. Program managers and mentors report that it is important to establish clear rules that set expectations between mentors and mentees straight. The MIT VMS Guiding Principles, for example, prevent mentors from actively selling services to ventures. Careful match-making processes in which both the mentors and mentees play a role also creates more trustful relationships. Some programs such as VBDC and MIT create self-policing through group mentoring sessions. “Personality-driven” programs, where mentors and service providers come from the trusted primary and secondary networks of program “champions” also reduce unethical behavior because of reputational risks. Programs where mentoring is done virtually found it beneficial to at least have initial meetings between mentor and mentees conducted face-to-face. Finally, when these instruments are not available some organizations manage risk through non-compete agreements and non-disclosure agreements.
7. Adapting to the Innovation Ecosystem

**Key findings**

- Venture acceleration network programs cannot function effectively without a number of complementary local factors.
- Creating networks that act as bridges to relevant markets can help overcome certain local innovation ecosystem gaps.

**Entrepreneurship Culture**

The culture of high-impact entrepreneurship varies widely across countries and regions. A culture of high-impact entrepreneurship is revealed by high growth potential start-up activity, a population’s favorable attitude to entrepreneurship, and entrepreneurial aspirations of growth, innovativeness and internalization. Entrepreneurship activity, attitude and aspiration indicators are shown for several countries associated with the case studies as well as for Russia in Figure 9. These indicators hide regional variations. One TechStars entrepreneur believed that one factor behind his success was the type of support he gained from Boulder’s entrepreneurial community. In his city of origin, Chicago, he would have been encouraged to work for a large established company instead.

![Figure 9: Global Entrepreneurship and Development Sub-Indices](image)

Venture acceleration networks are easier to launch where there is an existing culture of entrepreneurship. High entrepreneurial

---


aspirations and a supportive community can help generate the deal flow required for a venture network program. Similarly, an existing community of entrepreneurs makes it easy to recruit mentors and advisors. Where there is thriving entrepreneurship, informal networks already exist and need not be created from scratch, simply consolidated.

Where there is a limited culture of entrepreneurship, programs need to put more effort into creating and nurturing networks. TiE Bangalore spent many years developing its entrepreneurial network before it formalized its EAP mentoring program. It did so by hosting events where entrepreneurs could interact, learn from one another and obtain specialized training. INC Japan is just at the beginning of creating an attractive network through its Open Innovation Lab. Hence, many programs operating in regions of low entrepreneurship culture start with consolidating open-ended networks of potential mentors and advisors before launching a structured program. Once created, these networks will require continued nurturing by keeping them engaged in activities that go beyond the ventures they mentor.

Where there is limited entrepreneurship culture venture networks need to start small and be complemented by other support measures to stimulate a deal flow of ventures. Programs need to attract high-quality ventures from the very beginning or they will not meet the expectations of the mentors and advisors who will leave the network. If sufficient deal flow is not available the program will need to start very small. It will need to ensure that the ventures enrolled in the program garner sufficient attention in the community to stimulate more entrepreneurs to apply in the future. The case of MaRS shows that complementing mentor and venture network programs with large educational components is essential to serve nascent entrepreneurs. This can be done in partnership with universities. As illustrated by SMART, grants for feasibility studies can also be used to stimulate deal flow from research institutions. To stimulate demand for innovation management services, IMP³rove conducted extensive marketing campaigns and provided free benchmarking and consultancy services to businesses.

Managing Trust

To be effective, venture networks need to cultivate trust between network members, which can be a challenging in some contexts. Entrepreneurs will not be interested in joining venture networks if they do not trust the program’s management and the network members who interact with them. The lack of trust can be directed at either technical credibility or partiality. On one hand, credibility is questioned when an entrepreneur doubts the value added, on a technical basis, of the advice, training and connections of network members. For example, the IMP³rove case study shows that most European SMEs do not perceive that innovation management consultants can offer them value that is worth paying for. On the other hand, partiality is questioned when entrepreneurs do not believe that network members have their best interest in mind. Trust issues are not as common in dense and tight-knit entrepreneurial communities such as Boulder, USA, home to TechStars. Where such communities do not exist and where unethical behavior is rampant in the business community it is more difficult to attract entrepreneurs.
In communities where trust is limited, programs can use a combination of formal and informal trust management mechanisms:

- **Start small.** Building trust relationships is easier to foster when groups are small. Information disseminates faster and at higher levels in small groups – including information about breach of trust.

- **Screen network participants through personal social networks.** Program managers and staff members can start by drawing from their close social networks for mentors and advisors. However, although program staff may have higher trust in network members, additional steps will be needed to ensure that program beneficiaries develop the same perception of trust.

- **Actively and patiently build relationships:** Programs can create spaces of trust by organizing networking events where network members and beneficiaries can interact on an informal basis. TechStars organizes networking dinners for example. Building relationships takes time and cannot be done over a single meeting.

- **Give entrepreneurs a say in who they wish to work with.** Entrepreneurs are less likely to be apprehensive when they participate in the selection of their mentors or consultants. TechStars gives them a month to get to know different mentors before they select a lead mentor. Carbon Trust works with entrepreneurs to select appropriate consultants.

- **Link people and not firms.** Entrepreneurs cannot build personal relationships with firms, only with people. Networks can hence maximize trust by involving individuals rather than “impersonal” companies. People may be more willing to learn and share ideas than companies who almost by definition have profit-maximizing objectives.

- **Use many-on-one mentoring.** Group mentoring, whereby several mentors have group meetings with one entrepreneur facilitates self-policing for breach of trust among mentors, especially if the program also encourages networking among mentors (VBDC). Involving program staff in mentoring sessions can also have the same effect.

- **Generate user and peer feedback.** Several programs ask entrepreneurs to evaluate their mentors and service providers. A different approach is used by Acceleration Coop, a company not covered in the case studies, which has formalized selection criteria and a peer-review process for mentors and experts in its network (Box 9).

- **Develop a code-of-conduct.** Guidelines on what type of behavior is and is not acceptable by the mentor and entrepreneur are a useful starting point in establishing a comfort level of trust.

- **Non-disclosure agreements.** NDAs are used by some of the programs. Although NDAs are legally binding their value may be more symbolic than practical in the case of small entrepreneurs. Startups may not have the time or resources to successfully engage in legal pursuits.

- **Training and certification.** Several programs have very basic training to ensure that mentors abide to a minimum standard of quality. One program, IMP³rove has more in-depth training for consultants. Consultant certification is also theoretically possible, and widely used in other management domains such as quality system management, although
significant marketing of the certification is required to reach a critical mass of brand recognition.

Clearly differentiate mentors from service providers. In all cases mentors were discouraged from attempting to sell “additional” services to entrepreneurs.

Cautiously experiment with mentor equity shares and mentor payment. The effect of equity shares and payment on trust may vary by culture. In several of the US programs mentors are prohibited to hold equity to ensure that they placed the entrepreneur’s interest before their own. In India, the Bangalore TiE program follows the opposite strategy, although its success is difficult to measure.

Box 9: Building trust through structured peer and user review mechanisms.

The Acceleration Co-op is a mix between the mentor and advisor models used by startup organizations, the consulting approach used by typical management consulting companies, and an agency-based method of matching clients to the right advisors. The Acceleration Co-op selects its experts through “crowd” assessment, which means that knowledgeable people from certain fields have their expertise and achievements judged by other experts. This use of peer recognition is designed to inculcate greater trust from clients in the Co-op advisors that they work with. Clients are also allowed to gradually select the experts they want through narrowing down from all of the experts on offer.

The Acceleration Co-op accepts self-certified experts. However, to make sure it gets the right people, the Co-op filters the experts in several stages. A prospective expert must first have a publicly available biography that outlines his or her background. He or she can then be assigned to different quality levels, depending on the strength of recognition for their achievements from their peers. The highest level experts are certified as having the experience and knowledge to be a part of a company board. The Acceleration Co-op views this approach as both increasing the quality of advice on offer and inculcating trust among clients that their potential advisors have been selected against the standards that prevail in given sectors.

The “crowd” approach is also used in client selection of experts. Clients can start a “dialog with experts” through the web-based platform when they want to discuss the broad aspects of a project. In doing so they can start their consultation by drawing on the input of all the Co-op experts in a relevant area, but also by starting with the general idea of the project clients avoid having to give away an uncomfortable level of detail too soon. After this group consultation clients can then select the experts they want to work with and through several rounds of interaction gradually select those they most trust and who have the right knowledge. The Acceleration Co-op sees this as central to both the right matching of expertise with clients, and development of trust among clients that they are working with appropriately knowledgeable people.

Source: www.accelerationcoop.com and interview with the founder.
Complementary Assets

An established local base of R&D-oriented universities can help facilitate the growth of venture acceleration networks. They can contribute on the support side through their alumni networks and educational resources, and through the demand side through alumni, R&D projects, students and researchers. At both MIT VMS and Catalyst RN, university alumni play the roles of both mentors and beneficiaries of the mentoring services. Both universities have strong alumni networks that the programs can draw from. And although many ventures do not rely on university R&D but on recombining existing technologies (e.g. most TechStars and Endeavor ventures), university R&D is a source of ventures in most of the case studies. Regions with more R&D are likely to benefit (Figure 10).

Figure 10: R&D expenditures as a share of gross regional or domestic products

Without the right complementary assets a venture acceleration network is not a panacea for regional economic development. Some useful complementary assets include an enabling business environment attractive to VC funding (Table 12), universities and local market demand for innovation. And while venture acceleration networks are regional, their spillovers are more widespread. The case of TechStars suggests that even in a city with a well-established entrepreneurship culture such as Boulder, USA, half of the program graduates had moved away to other locations offering more financing or business opportunities. The same behavior can be expected of successful companies from “second market” cities in middle-income countries, who will gravitate towards more globally-connected innovation hubs.

Table 12: Global Venture Capital and Private Equity Country Attractiveness Index 2011 Ranking

<table>
<thead>
<tr>
<th>Country</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>1</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2</td>
</tr>
<tr>
<td>Canada</td>
<td>3</td>
</tr>
<tr>
<td>Singapore</td>
<td>4</td>
</tr>
<tr>
<td>Japan</td>
<td>6</td>
</tr>
<tr>
<td>Germany</td>
<td>10</td>
</tr>
<tr>
<td>Chile</td>
<td>29</td>
</tr>
<tr>
<td>India</td>
<td>30</td>
</tr>
<tr>
<td>Poland</td>
<td>36</td>
</tr>
<tr>
<td>Russia</td>
<td>41</td>
</tr>
</tbody>
</table>


Regions that lack complementary assets can still benefit from venture acceleration networks by building bridges with other markets, through, for example, global mentor and broker networks (IC² India). The case
studies show that social capital is more easily generated at the local level and that it is hence easier to create and nurture networks locally. Thus, most programs operate at the regional level. The example of SMART in Singapore illustrates that even in a global hub of technology and business finding mentors, with relevant knowledge and connections for highly specialized R&D locally, can be difficult. For this reason, SMART pairs venture teams with both local and foreign mentors.

Octantis in Chile draws some of its mentors from existing diaspora networks. Larta, Endeavor and IC² connect ventures with mentors and brokers in the US, where there is high demand for innovative products and expertise to draw from (Box 10). The benefits of these “global bridges” goes beyond finding business partners and finance. They are largely about connecting individuals who are deeply embedded in the relevant innovation networks and can provide the rapid market validation that would be difficult to obtain elsewhere. Nonetheless, these networks are much more difficult to maintain than local networks since network members do not interact with one another outside their program functions.

Box 10: Building bridges to the US market for an Indian biomedical entrepreneur

Dr. Jairaj Kumar is the founder and Managing Director of CGN Research Labs, a company that manufactures medical devices which use infra-red technology to image inflammatory pain and diagnose early stage cancer.

Dr. Kumar was a university researcher and the program helped him to quickly understand how to run a business. After winning an award for his medical invention in 2009 he was approached by Philips but did not know how to respond. He joined the India Innovation Growth Program supported by IC² in 2010.

IC² gave Dr. Kumar a two-week entrepreneurship training workshop which schooled him in the basics of running a business, including attracting investment and product commercialization. Dr. Kumar’s technology was also assessed using IC²’s proprietary Quicklook method, which analyzed the commercial potential of his research. The program also allocated Dr. Kumar a US-based broker who coached him through his meetings with experts, financiers and potential customers in the US.

The program connected Dr. Kumar with markets and expertise that he would never have been able to reach otherwise. Through these connections and the assistance of a broker he was able to convert his university research into a marketable product and a viable business. CGN now employs 50 people in India and has annual revenues of USD 10 million.

Source: Interview with Jairaj Kumar.
8. A Role for the Public Sector in Russia

Key findings

- In spite of existing private sector venture acceleration network efforts in Russia, there is still a clear rationale for state support in their further development.
- The first step to structuring a state support program for venture accelerating network is to clarify its objectives: short-term R&D commercialization, sustainable entrepreneurship networks, or market for innovation-related services.

Venture acceleration networks can help fill important entrepreneurship gaps in Russia’s innovation ecosystem. Russia has a large pool of high-skilled labor, large base of universities and research institutions, and a government committed to innovation, as demonstrated by its support of initiatives such as Skolkovo, RVC and RusNano. High-impact knowledge-driven entrepreneurship is largely missing from the mix. Venture acceleration networks can address the entrepreneurial capacity, connection –national and global – and market validation challenges that remain barriers to entrepreneurship. Surmounting these barriers can help spur a culture of entrepreneurship and self-sustainable networks throughout the country.

There is a rationale for public sector intervention to support venture acceleration network experiments in Russia. Russia already has incipient informal and formal mentoring and advisory initiatives, the challenge is to take them to the point where they can have demonstration effects and catalyze new ones. Y-Combinator, the US-based pioneer venture accelerator, launched in 2005 and now imitated throughout the US, is a case in point. Some examples in Russia include StartupPoint founded in 2008, Glavstart founded in 2010, and Runet Labs which will launch is launching its first program in 2011. All of these initiatives are led by private entrepreneurs. These budding initiatives raise questions about the rationale for public sector intervention in the creation of venture acceleration networks. There are three points to consider to address this issue:

- In view of the public spillovers of building entrepreneurial skills, fostering network linkages in entrepreneurial communities, and creating an entrepreneurial culture, the private sector will under-invest in Russia, as they will in other countries.
- Private sector venture acceleration initiatives in Russia and other countries are mainly in the ICT sector. As illustrated by the TechStars case study, the ICT sector benefits from fast product turnaround times, which can be incubated faster than biotech for example, low capital intensity, which requires lower upfront early-stage investments, and simple supply chains in the case of web-based technologies. All of these factors also provide ventures to more easily reinvent themselves during the market validation process. In Russia, web-
Based ventures benefit from a large Russian-speaking internet market. Public sector support in Russia is likely to be needed in sectors that do not share these characteristics of the ICT sector.

While mentor networks exist, the market for specialized innovation management consultants and experts is still fragmented and underdeveloped. Demand is low and the quality of service providers is uneven. Helping increase transparency in the market can drive up quality, decrease search costs and stimulate demand. These are public goods.

**The exact role of the public sector in supporting venture acceleration networks depends on its strategic objectives.** If the public sector’s objective is to spur the commercialization of R&D in the short run, its role is to create a comprehensive set of support measures around the selected technology projects. If its objective is to build a strong innovation ecosystem for the long run its role is to support entrepreneurial capacity and the creation of self-sustainable networks. If its objective is to develop markets for innovation-related consultancy, its role is to build and help differentiate service provider capacity and stimulate demand in the market place.

To foster sustainable entrepreneurship networks, the role of the public sector is to facilitate existing experiments and incite the creation of new ones. Given the nature of self-sustaining networks, a “light” touch of the public sector will be warranted. In the case studies, only the Carbon Trust and INC Japan’s networks are created and managed by central governments. Neither of these has shown any evidence of spurring self-sustainable networks. The Carbon Trust is based on contracting and sub-contracting relationships between network members, hence does not foster the type of social capital observed in successful networks where support and interactions occur without financial compensation. The INC Japan initiative was launched only one year ago. The case studies suggest that an effective role of the government can be to support bottom-up private sector or academic initiatives rather than to create and manage a network. This could be achieved using two strategies:

- Creating networks of existing programs to foster learning and diffusion of good practices (the TechStars Network model).

To foster the short term commercialization of R&D the government can supporting existing efforts, launch new efforts through consortia or outsource their implementation. MaRS is an example of regional and federal governments providing financial support to a private-sector initiative without playing a role in its governance. VBDC operates as a non-profit launched by regional and municipal governments and its board includes a broader range of local private sector and university stakeholders. One question for the public sector to address will be whether to support in-house university programs such as Catalyst RN, or support those that serve a critical mass of universities such as Innovate VMS and MaRS. In an environment of limited deal flow, the latter approach may be more suitable. One challenge to R&D commercialization programs will be their global nature. Any mentor, advisor, broker or sounding board will need to be plugged into the global innovation networks to be effective. Here, one option is to outsource the global networking aspects of the program (Larta, IC²).
Spurring new program initiatives by facilitating coordination between potential program champions (Endeavor’s franchise model).

In both cases, creating linkages with global markets will be required.

To foster markets for innovation-related consultancy and advisory services the government can leverage existing personnel training and certification systems (IMP³rove and others) and stimulate demand for innovation among SMEs. Leveraging existing schemes will require partnerships with the organizations managing those schemes. Schemes can be appropriately adapted to different segments of the Russian market. International experience (e.g. US and UK technology extension programs) shows that stimulating demand for innovation among SMEs will require tackling information and knowledge gaps first, before financial gaps. To be effective any market-demand program must include pro-active awareness-raising, demonstration, benchmarking, and service sampling schemes.

For local players intending to launch venture acceleration networks, the following steps can be used:

- Determine program objective.
- Identify and assess program champions (individuals and institutions) and explore consortium approach.
- Evaluate feasibility of building program around existing initiatives.
- Identify and understand market demand.
- Examine innovation ecosystem gaps and requirements for complementary - Program services.
- External support measures.
- Select target market and its needs.
- Examine options for nurturing a network.
- Assess feasibility of different funding models and organizational structures.
- Identify program output and outcome indicators and establish monitoring system.
- Create a business plan.

While careful planning can enhance a network program’s chances of success, there are still risks to be mitigated (Figure 11). Many of these risks can be mitigated by drawing on lessons learned from the case studies. Table 1 at the beginning of the report suggests some prerequisites for building venture acceleration networks and possible enablers of success, which are detailed in the report. Since every innovation ecosystem is different it is not possible to predict - even with good planning – the likelihood of success of a venture network program. Programs will need to retain the flexibility to experiment with these success factors.
Nurturing Innovation: Venture Acceleration Networks

Figure 11: Possible risks of building venture accelerator networks
Individual Program Descriptions
Virginia Biosciences Development Center

Industry Advisory Boards

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>8 to 10 per company</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>1 per year on average (&gt;10 since 2003)</td>
</tr>
<tr>
<td>Number of staff</td>
<td>2</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>none</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>1 year</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>~$2,000 per company</td>
</tr>
<tr>
<td>Program start year</td>
<td>2003</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Companies are mentored by eight to ten advisors with complementary skills, in group meetings.
- The program director plays a role in facilitating the group mentorship sessions.
- The mentors are allowed to engage in business relationships with the companies during the course of the program.
- Corporate sponsors of the incubation program have privileged access to mentorship positions.
- Corporate sponsors of the incubation program have representatives in its Board of directors and its tenant selection committee.

Lessons Learned

- Mentorship by a group is useful as it offers different and often complementary viewpoints.
- Mentors in unrelated sectors can play a useful role by introducing a fresh viewpoint and asking difficult questions.
- Mentorship programs can still be effective without confidentiality agreements.
- Being well-connected in the local community can facilitate the recruitment of mentors.
- It is more effective to recruit mentors that will attend meetings rather than high-profile mentors.
1. Business Model

The objective of the Virginia Biosciences Development Center (VBDC) Business Advisory Boards\(^4\) program is to offer start-ups strategic advice and help them expand their business networks. Business Advisory Boards consist of groups of 8 to 10 subject matter experts and entrepreneurs who meet with and advise early-stage companies on a periodic basis. Board participants receive no remuneration and have no future special obligations or rights.

The VBDC is a private non-profit business incubator for early-stage companies funded through public and private sources. It is based in the city of Richmond, on the East Coast of the United States. The VBDC was founded in 1995, together with the Virginia BioTechnology Research Park, where it is located. The VBDC launched the Business Advisory Boards program in 2003. Apart from the Business Advisory Boards, the VBDC offers its tenants other forms of business assistance. These include educational programs, professional services, consulting, business interns and networking events. There are currently 14 companies in the incubator who lease office and laboratory facilities.

The Operational Model of the Business Advisory Boards

There are six steps involved in starting up and running a Business Advisory Board:

1. The incubator director identifies the startup company’s needs.
2. The incubator director identifies potential Board members, within his personal network and beyond, and obtains the consent on a final list of Advisors from the company.
3. The incubator director invites the selected individuals to join the company’s Business Advisory Board.
4. During the first Business Advisory Board meeting, the Advisors and the company familiarize themselves with one another and the incubator director introduces them to the program.
5. During the second meeting, two to three weeks later, the Advisors develop an action plan of issues to address during all following meetings.
6. Subsequent meetings are timed at six to eight week intervals.

The typical duration of Business Advisory Boards is one year. They rarely last more than one year. The VBDC considers that at that point the company does not require such a large group of advisors.

2. Financial Model

Total Program Implementation Costs

It is difficult to disaggregate the cost of running the Business Advisory Boards from the overall operational costs of the VBDC. In its 2008 fiscal year, the state (region) of Virginia incurred expenses of roughly $200,000 to support the VBDC’s operations.\(^5\) The Business Advisory Boards’ main costs are the staff time of the incubator director and of the administrative assistant. The annual costs of managing the program can be estimated as approximately

\(^4\) These are also referred to as “Kitchen Cabinet Advisory Boards”

$2,000 per company.\(^6\) This does not include the cost of unrelated activities that help to recruit advisors, such as networking events and the marketing of the incubator.

The incubator uses a sponsorship program to raise additional non-rent resources and offer discounted professional services to incubator tenants. Sponsors agree to provide financing and/or a pre-specified amount of discounted professional services to the incubator tenants. Sponsorship schemes range from $1,000 to $20,000 in cash or in equivalent discounted services per year. Discounts cover 30 percent of services hours offered by the sponsors to the incubator companies. As of March 2011 the incubator had raised more than $100,000 through annual sponsorship contracts. The types of services offered by sponsors include legal counsel, patent counsel, accounting and audit, advertising, business consulting, banking and financial services, as well as other specialties.\(^7\)

In exchange for their contributions, sponsors receive a number of benefits:

- Preferential access to the incubator tenants: the incubator recommends the sponsors to its tenant companies, although these are free to select unsubsidized services from other firms.

- Preferential opportunities to participate in VBDC programs such as the Business Advisory Boards and educational events.

- Brand visibility through the research park and incubators’ websites, press releases and networking events.

- Major sponsors receive preferential access to network with VBDC tenant companies.

- Up to five one-year director positions, out of a total of seven, are appointed to the VBDC board from among the major sponsors.

- Up to five positions on the Incubator Tenant Selection Committee are allocated to major sponsors.

**Participant Financing**

Their Business Advisor Boards program does not require any financial transactions between the incubator, the companies and the advisors. Advisors offer their services pro-bono and companies do not pay a fee to participate in the program. Companies pay only the fees related to their tenancy in the incubator. No equity is taken in the companies. Nonetheless, client companies are free to buy services from Business Advisory Board members outside of the Advisor’s Board duties. This can include, for example, attorney fees.

---

\(^6\) Assumptions are as follows: the incubator director spends 2 hours per business advisory meeting and spends 16 hours recruiting advisors for each company, the administrative assistant spends 6 hours scheduling each meeting, there are 8 meetings per company annually, there is 1 company participating in the program annually, the salary of the incubator director is $40 per hour, and the salary of the administrative assistant is $15 per hour.

3. Beneficiaries

Recruitment and Selection of Participants

Participation in the Business Advisory Boards program is only open to companies that are admitted in the VBDC incubator. Incubator company selection is based on a rolling application process. The prospective tenant provides a written application and makes a formal presentation at a bi-monthly Tenant Selection Committee Meeting. Applications are selected on the basis of space requirements, detailed company information, business plan, financial statements, future revenue streams, projected milestones and required services from the VBDC. The VBDC gives preference to high-growth companies in the healthcare marketplace. Applicants are notified of their acceptance to the program within one week of their presentation.

Participating Company Profile

Only VBDC companies with limited entrepreneurial experience participate in the Business Advisory Boards program. On average, only one company per year participates in the program. Generally, these companies are in their first year in the incubator. The program is less relevant to experienced entrepreneurs. Nonetheless, the incubator tenants are all generally revenue-generating companies or have investors since they are required to pay their incubator lease. Some are very early stage while others have been established for several years. Three of the 14 were already in the incubator as far back as 2003.

All companies participating in the program are in the biosciences sector. Most offer scientific services and customized solutions and a few are conducting and commercializing R&D.

Program Impact

It is not possible to disaggregate the impact of the Business Advisory Boards from that of the incubator altogether. Moreover, the type and depth of support offered by the incubator

---

Table 13: Major sponsorships provided to the VBDC

<table>
<thead>
<tr>
<th>Sponsorship level</th>
<th>Number of sponsors</th>
<th>Sponsor examples</th>
<th>Total funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20,000</td>
<td>3</td>
<td>Law firms</td>
<td>$60,000</td>
</tr>
<tr>
<td>$10,000</td>
<td>4</td>
<td>Accounting, law and business consulting firms</td>
<td>$40,000</td>
</tr>
<tr>
<td>$1,000-5,000</td>
<td>7</td>
<td>Business and engineering consulting, law and business services firms</td>
<td>$7,000-35,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$107,000-135,000</strong></td>
</tr>
</tbody>
</table>

varies with the needs of the tenant companies. Most do not participate in the Business Advisory Boards program. So far, the 68 current and past VBDC companies have collectively raised more than $170 million in grants and capital, and three are now publicly traded.

4. Human Network

Scope of Advice

Business Advisory Boards offer companies the type of advice that boards of directors would offer in large companies. This includes solving issues that are strategic for the company (e.g. how to commercialize a technology). They help companies develop action plans to work through their challenges. They also help companies network. The Business Advisory Boards make introductions and help connect the companies to relevant business contacts.

Delivery of Advice

An individual Business Advisory Board is assembled for each company. Meetings are typically attended by three-quarters of the Board members. Advisors are asked to commit to attending at least six meetings per year. The incubator director, with the consent of the company, appoints a chair for each Board who leads the meetings, while the incubator director himself facilitates the meetings.

The eight to ten members of a Business Advisory Board meet with the company they are advising as a group for 90 minutes every six to eight weeks. The frequency of the meetings is established according to the needs of the company. The time and place of each meeting is determined by the Board.

The agenda of the first two Board meetings are predetermined in the program, while agenda for the following meetings depend on the more specific needs of the companies. The first meeting includes an icebreaker for all of the participants to meet each other, as well as an introduction to the program and program guidelines by the incubator director. The meeting also includes a business plan presentation by the founders of the startup company. Advisors do not yet provide any feedback on the business plan. During the second meeting, typically two three weeks later, the company discusses its progress since the last meeting, and the Board provides feedback on the business plan. Each Advisor is asked to provide one positive aspect of the business plan, as well as an area of concern (e.g. the company is pursuing the wrong market). From this discussion, two to four key issues are identified and become the topic of the next meetings.

Advisor Profiles

Each Business Advisory Board includes a mix of skills that are likely to be relevant to a specific company. A Board is typically constituted of eight to ten people with the following profiles:

- **Service providers**
  - An attorney.
  - An investment banker or venture capitalist.
  - An investment consultant

- **Managers**
  - An experienced entrepreneur.

---

Nurturing Innovation: Venture Acceleration Networks

- The CEO of a high-technology based company.
- The CEO of a manufacturing company.

Others
- A reimbursement expert from the pharmaceutical industry, if relevant.
- A dean from the Engineering school.

In addition, each Business Advisory Board includes a “strategic thinker” who is not in a relevant industry sector and does not offer any particular expertise but can contribute a fresh point of view. These individuals are more likely to ask difficult or creative question and prevent “silo thinking” in the group.

The level of involvement of the Advisors with the VBDC varies but they generally serve on no more than one Business Advisory Board. In some cases they serve on different Boards year after year. Advisors are permitted to invest in the companies they advise as well as to engage in commercial activities with them outside of the scope of their work in the Boards. Advisors are free to withdraw from the Board at any time.

In general, the constitution of the Business Advisory Boards is not made available to the public by the tenant companies. This is discouraged by the incubator since the Advisors are volunteers. However, most incubator companies use this information in their fundraising pitches.

Recruitment and Selection of Advisors

Advisors are recruited from the incubator director’s personal network as well as from the broader community. When the Business Advisory Boards were first launched in 2003, the incubator director relied mainly on recruiting Advisors from his personal network, the network of the research park director and from among the VBDC’s sponsors. Only individuals within this close network were invited. Since then, the director has recruited Advisors from a much broader network. Some prospective Advisors hear about the program through word of mouth, and approach the director to participate. Some are recruited by approaching large companies in the region, as well as higher education institutions. The incubator director serves on a number of organizations’ boards in the community, including businesses, and uses these organizations to promote the Business Advisory Boards. In other cases, the Advisors are recommended by members of a Business Advisory Board who feel that they are missing a skill set. Another source of Advisors are job seekers who approach the incubator for career opportunities and are redirected to the Business Advisory Boards.

The incubator director recruits from among the prospective Advisors through individual meetings where he presents them with short documents on Business Advisory Boards. Advisors must commit to attending at least six Board meetings per year. Advisors that are more likely to attend meetings are given preference over high-profile advisors who may not attend many meetings. The director also discusses the company to be mentored with the prospective Advisor to understand the fit and level of interest. Typically, 80 to 90 percent of invitations to serve in a Business Advisory Board are accepted.

The incubator director initiates and coordinates the assignment of Advisors to the
Business Advisory Board. As a first step, the director identifies a tenant company’s needs. This is done on the basis of the entrance application form, of the entrance interview and of an orientation meeting when the company joins the incubator. During this process the director also identifies skill sets that are lacking in the company. As a second step, the incubator director discusses the required skill set of the Business Advisory Board with the company. After reaching an agreement with the company on the required skill sets, the incubator director identifies a list of 10 to 12 people who could serve on the Business Advisory Board. As a third step, the company reviews the director’s recommendations and agrees on who to invite. Once 8 to 10 members agree to serve on the Business Advisory Board the incubator director selects a chair, with the approval of the company.

5. Organizational Model

The VBDC is a private non-profit organization whose mandate is to provide administrative support to start-up biotechnology companies. It was founded by the Virginia BioTechnology Research Park, where it resides. The Virginia BioTechnology Research Park itself is a non-profit organization founded by the Virginia state (regional) government, the city of Richmond and the Virginia Commonwealth University. The Virginia BioTechnology Research Partnership Authority is a government agency tasked with financing the construction of the Park and contracting goods and services. The Board of Directors of the VBDC is chaired by the Executive Director of the Virginia BioTechnology Research Partnership Authority (who is also the Research Park’s President and CEO), and includes representatives from the university, corporate sponsors and venture capital.

The VBDC and its Business Advisory Board program are operated with a very lean staff. The staff consists of the incubator director and an administrative assistant. The VBDC director has a scientific educational background in addition to an MBA, and has worked in industry for most of his career, including in leadership positions. He is also on the board of directors of several local companies.

There are no financial or confidentiality legal implications for participating companies and Advisors (Figure 12). The Advisors work on an entirely pro-bono basis. Discussions are held with the companies and Advisors to explain that the entrepreneurs have the ultimate responsibility for any decision, that Advisors have no liability exposure and do not negotiate directly on behalf of the company. There are no confidentiality agreements, which the VBDC consider as introducing unnecessary complexity and administrative burdens. The incubator director verbally requests the Advisors to keep all information discussed during the meetings confidential. The only contract between the various parties is the tenancy contract between the companies and the incubator, which specifies the tenant company’s incubation activities.

6. Innovation Ecosystem

The VBDC is located in the Virginia BioTechnology Research Park in the city of Richmond, a small city of 204,000 people roughly 150km South of Washington D.C. The

---


Park harbors more than 60 life science companies, research institutes and state/federal labs, employing over 2,000 scientists, engineers and researchers. The Park is adjacent to a medical campus of Virginia Commonwealth University, one of the country’s largest university-affiliated teaching hospitals. The University is a major research center, with more than $200 million of sponsored research annually. There are two other technology parks nearby with larger companies. Nonetheless, Richmond is not among the country’s leading biosciences cluster or innovation cluster. There are no top tier universities within the metropolitan area. The city is classified within the “Shrinking pool” area of the McKinsey innovation cluster map.

15 http://vabiotech.com/about/about-the-park/
Figure 12: Organizational structure of the VBDC

VBDC

Board of Directors
(government + sponsors + research park + university representatives)

Executive Director +
Executive Administrator

Sponsors

Sponsorship contracts

Tailored incubator tenant contract

Business Advisory Boards

Mentorship

Early-stage companies

Subsidized and non-subsidized business services
**TiE Bangalore**  
**Entrepreneurship Acceleration Program**

<table>
<thead>
<tr>
<th>Quick Facts</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of advisor</strong></td>
<td>40 active mentors (total pool of 100)</td>
</tr>
<tr>
<td><strong>Number of beneficiaries</strong></td>
<td>2-4 selected per year</td>
</tr>
<tr>
<td><strong>Number of staff</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Financial arrangement with beneficiaries</strong></td>
<td>Mentors take 1-5% equity on case-by-case basis</td>
</tr>
<tr>
<td><strong>Typical program duration</strong></td>
<td>12-24 months</td>
</tr>
<tr>
<td><strong>Program start year</strong></td>
<td>2006</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Leverages an existing network of members.
- Provides a structured approach to pairing entrepreneurs with mentors.
- Mentors are compensated with equity in company.
- Companies which mentors have invested in have high success rates.
- Most mentor-mentee relationships are continued beyond program duration.
- TiE Bangalore is part of an international network.

Lessons Learned

- Young entrepreneurs need more than capital – they need experience and advice. This is especially the case in India where cultures vary in village-to-village and therefore experience in understanding India’s diverse market is crucial.
- Mentorship increases the success of the entrepreneur but the mentor-mentee relationship must have the right chemistry. Finding the right match is difficult. Some entrepreneurs have taken months to find the right mentor and in some cases, have failed to secure a suitable mentor.
- To understand expectations and roles and to avoid possible conflicts of interest, a memorandum of understanding (MoU) is negotiated and signed between mentor and mentee before mentoring begins. Given each situation is unique, the MoU is designed on a case-by-case basis.
- The provision of equity ownership in companies helps motivate mentors to become more actively involved in companies however the relationship is more than monetary. Mentors give their time as they are eager to impart their experience to the entrepreneurial community. However this means they also have their own reputations to uphold which is more valuable than the small equity stake they take in the company.
- The success of the program is based on the quality of the “innovation ecosystem” in Bangalore, including entrepreneurs, mentors and investors. As the TiE network grows, so does the pool of available mentors and entrepreneurs which in turn contributes to the success of the EAP.
1. Business model

Program Background

The Indus Entrepreneurs (TiE) is a global not-for-profit organization which aims to promote entrepreneurship through advice, networking and mentoring. It provides a platform to support an ecosystem for entrepreneurship by facilitating linkages between entrepreneurs, investors, mentors and professionals. The Bangalore, India chapter was founded in the year 2000 and is part of a wider network of over 15,000 members in 53 cities (15 of which are in India). TiE Bangalore offers a number of services, in addition mentoring, including conferences, networking events, training and education. TiE also supports targeted programs for specific groups as women entrepreneurs and clean technologies.

Program Overview

Building on the success of TiE in India and the emergence of a flourishing technology sector in Bangalore, in 2006, TiE created the Entrepreneurship Acceleration Program (EAP). The motivation behind the EAP was to formalize the less structured approach to TiE Bangalore’s existing mentoring program. Sharing similarities with Toronto’s TiEQuest program, the EAP is a systematic vetting process to match aspiring entrepreneurs with seasoned mentors. TiE acts as a facilitator by identifying the most promising entrepreneur, pairing them with an appropriate mentor within its network. The result is the establishment of a more formalized and active relationship between mentor and mentee, which translates into a higher success rate for businesses seeking to secure follow-on funding from qualified investors.

Operational Model of the EAP

TiE leverages its network of charter members consisting of experienced entrepreneurs and senior management professionals, and pairs them with promising high-growth business ideas. The entrepreneurs behind these businesses are often young and lack the experience to transform their ideas into scalable businesses. The EAP is designed to accelerate the growth of these ideas by ensuring high-potential entrepreneurs and matched with the required mentoring expertise. This is achieved by the following process (Figure 13):

- TiE advertises the EAP program both within and outside its network via its website, newsletters, conferences and other events. The application process is held annually with entrepreneurs invited to present their ideas in a “Business Plan Executive Summary” involving eight key questions (See Annex).
- The TiE board reviews the applications and creates a long-list of candidates who are invited to prepare a full business plan.
- The pool of applicants is further reduced by the board based on the full business plan submissions and short-listed candidates are invited to prepare 30 minute presentations for a face-to-face pitch with a panel of judges and an audience of mentors, angel investors and VCs.
- Judges then select the final entrepreneurs who are chosen as EAP beneficiaries. Mentors at the event have the opportunity of meeting with the selected entrepreneurs directly.
The list of winners is circulated to the wider community of charter members and mentors by email and at events. TiE also uses its database to identify mentors with specific sectoral experience. Entrepreneurs arrange meetings with a number of mentors until the best match is identified. Typically it takes 2 to 3 meetings with a mentor for an agreement to be reached.

A memorandum of understanding (MOU) is then signed between mentor and mentee outlining the roles, expectations and responsibilities and any financial arrangement between the two parties.

Mentors and mentees meet at least once a month and once every quarter with the TiE board. The formal mentoring process usually takes between 12-24 months or until follow-on funding is secured by the business, however most mentor relationships continue beyond the scope of the program.

Program Success

The success of the program is measured primarily by a) the successful pairing of an entrepreneur and mentor and b) the growth of the company and therefore its ability to raise follow-on funding from investors including mentors, angels, VCs and other institutions. The program’s success is also defined by:

- Number of quality applications received
- Time taken to find mentor match
- Growth in memberships, network and broader entrepreneurial community

2. Financial Model

Program Costs

It is difficult to disaggregate the cost of running the TiE EAP program from the rest of the Bangalore TiE budget. Although a major cost of TiE consists of the salary of the staff member managing the program, TiE EAP’s effectiveness relies on “externalities” generated by the many activities organized by the TiE network in Bangalore.

Participant Financing

TiE sustains its operations via membership fees. There are two membership structures:
a) Regular membership: Consisting of entrepreneurs and junior professionals at approximately USD 100 per year.

b) Charter members: Consisting of experiences/seasoned entrepreneurs and senior level professions at approximately USD 300 per year.

Participating in the EAP is free for entrepreneurs however mentors are provided with equity ownership in the entrepreneurs’ business in exchange for their time and advice. This typically ranges from 1-5% depending on the type of business and the level of engagement offered by the mentor. The percentage equity is negotiated and outlined in the MOU signed between the mentor and mentee. Mentors also sometimes invest in the companies they advise for an additional equity stake. However this is not expected by the entrepreneur as an outcome of participating in the EAP. This financing typically ranges from USD 100-250k. Follow-on investment in EAP companies by angels and VCs is upward of USD 1m.

In 2010, 80 companies applied for the EAP by submitting a business plan executive summary. About half of these were asked to provide a full plan with 22 being selected to prepare a presentation in front of TiE judges. Of these, four were selected for the program. In this way, the EAP acts as an attrition process for entrepreneurs so that mentors are presented with the best and most promising ideas. The selection of the mentor is facilitated by TiE however it is the responsibility of the entrepreneur and mentor to find the best match and agree on the terms of the relationship.

Participating Company Profile

Potential beneficiaries of the EAP are entrepreneurs at various levels of sophistication and scale. Some have only ideas that are at the pre-company stage, while others already have operating businesses. The selection process forces entrepreneurs to refine and narrow their thinking on the type of mentoring and thus mentor that would best suit their idea, growth plans and personality.

3. Beneficiaries

Selection of Participants

Beneficiary entrepreneurs of the EAP are selected via a competitive application process. The criteria for final EAP selection are as follows:

- Quality of the entrepreneurial team.
- Magnitude of the opportunity being addressed.
- Uniqueness and maturity of the idea.
- Capability of team to execute the business plan.
- Fitment towards known criteria of angel investors (tech area of focus, geographic focus, etc.).
- Probability of exciting a VC to invest in 18-24 months.

Limited information is available on impact results. As mentioned above, the criteria for success for the program includes a) the successful matching of mentors and mentees and b) the ability of the company to grow and secure further funding support. These two are
often inextricably linked given that in many cases the mentors act as the angels who financially support the company.

The model for the EAP has proved successful in a number of cases. Of the 15 companies that have qualified for the EAP over the last four years, about half survived and three to four have grown significantly. However the overall results have been mixed. In some cases, entrepreneurs were not successful in finding right mentor match. In other cases entrepreneurs were not able to secure follow-on funding while others failed because partners parted ways or the business simply did not gain significant traction in the market. Many of these factors however are outside the control of TiE who maintains that the EAP facilitates linkages to increase and/or accelerate the growth of a company, but this does not translate into success on all occasions.

4. Human Network

Scope of Advice

There is no limit to the scope of the services provided by mentors however TiE aims to link entrepreneurs’ needs with the sectoral background and skills of the mentor. An example of services provided by mentors can include anything from market research, business strategy, human resourcing, to more hands-on roles such as active management, seed funding and in some cases, sharing overheads such as administrative support and office space. Mentors also assist young entrepreneurs in navigating the contextual challenges in India including understanding how to structure delivery models that can account for the cultural disparities between India’s many villages.

Delivery of Advice

While TiE recommends that mentors meet with entrepreneurs at least once a month many mentors meet with entrepreneurs on a more regular basis. Given that TiE Bangalore’s member base is local, this facilitates the ability of mentors to meet with mentees face-to-face. However the specific expectations and guidelines on the delivery of advice are negotiated between entrepreneur and mentor on a case-by-case basis and outlined in the MoU. These clear expectations and guidelines of the relationship also help avoid any conflicts of interest given mentors have an equity ownership in the companies they advise. In one situation, the entrepreneur’s business operated in a similar market to the mentor’s own company. While this provided the opportunity for creating synergies between the two companies, the MoU helped define the operating relationship to avoid any potential future conflicts of interest. The TiE board also maintains oversight throughout the EAP by meeting with the entrepreneur and mentor every quarter. Mentors are also encouraged to keep TiE informed of key progress and milestones via email.

Advisor Profiles

As previously mentioned, mentors are charter members of TiE Bangalore who are typically seasoned entrepreneurs or senior professionals (Box 11). They are invited by TiE to be charter members and potential mentors. Mentors are often accomplished business people who wish to spend their time and resources giving back to the community. Although they negotiate a small equity stake in
the companies, the relationship with the entrepreneurs is more than economical. By sharing in the success of the companies they advise, mentors also build their own reputation and are often asked to coach or partake in events beyond TiE and the EAP.

**Recruitment of Advisors**

TiE uses its network of charter members to connect successful EAP entrepreneurs with mentors. This is done both formally via the EAP pitch event and informally through other TiE networking events, emails and personal connections. TiE’s database of charter members also organizes potential mentors by area of experience and interest so that a better match can be made with entrepreneurs.

**5. Organizational Model**

TiE has a global structure that feeds down into the specific TiE chapters around the world. At the very top there is a Board of Trustees, under which there are five Global Committees each headed by someone from the Board. These deal with the central functions of the organization, such as governance, finance, chapter support and new initiatives.

For the day-to-day running of the organization there is a Global Management level which consists of a CEO; Directors of chapter support and “Global Systems”; managers with responsibilities for finance and administration, and communications and chapter support; and an administrator.

---

**Box 11: Mentor profile: Muki Regunathan, Founder and CEO, Pepper Square**

Muki Regunathan founded several companies since 2001 including Pepper Square, a full service digital media and design company based in India. He has a passion for assisting other entrepreneurs and has a vision of helping create 1,000,000 entrepreneurs in India: “There is a need for small and medium enterprises (SMEs) in India to bridge the gap between small and large industries as creativeness in larger companies is limited.”

Via the EAP, Muki Regunathan has mentored creative design platform start-up, Jade Magnet, whose entrepreneurs, Sitashwa and Manik are very appreciative of his guidance: “Muki has given very hands-on and active mentoring. We attend meetings with him regularly to not only understand the industry better, but also how he does business.” Muki Regunathan has also invested his own money in Jade Magnet and continues to mentor Sitashwa and Manik beyond the EAP.

The Bangalore chapter of TiE is organized through three layers: an overall management team, a group of directors and managers, and a handful of committees. The management team consists of the President, the Secretary and the Treasurer. Below them are the six directors and managers, some of whom have direct responsibility for issues such as membership and finance. There is then a Membership Committee, a Programs Committee, a Mentoring Committee, a Communication Committee and a Sponsorship Committee. Most of these are headed by people not already involved with the management of the chapter. The TiE EAP program has a single staff member.
6. Innovation Ecosystem

The Bangalore TiE chapter works in cooperation with other chapters across the world. TiE’s members actively participate in regional and international conferences and workshops and are encouraged to connect with members in other chapters. In some cases, EAP beneficiaries have contacted TiE members in other countries to facilitate activities abroad including advice on market entry opportunities. TiE also acts as a platform for the sharing of best practice. Therefore the EAP program has benefited from the experiences of similar programs globally such as Toronto’s TiEQuest.
## TechStars

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>278 mentors + 28 advisors (in 4 cities)</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>30 in 2010 (68 since 2007)</td>
</tr>
<tr>
<td>Number of staff</td>
<td>8 core part-time staff + approximately 16 contractual short-term staff in all 4 cities</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>TechStars receives 6% equity and startups up to $18,000</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>3 months</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>$400,000 to $600,000</td>
</tr>
<tr>
<td>Program start year</td>
<td>2007</td>
</tr>
</tbody>
</table>

Note: Data as of March 2011.
Special Features of the Program

- The program takes equity in startups in return for mentorship, seed funding, and facilities.
- The program is highly structured.
- Startup entrepreneurs interact with a large number of mentors and advisors over a short amount of time (three months).
- The focus of the program is on networking as much as it is on mentorship.
- The program includes a practical educational component.
- Highly competitive startup selective process.
- The program’s management plays a key role in the delivery of advice.
- The program leverages networking among its participants and with program alumni.
Lessons Learned

- The quality of the mentors drives the quality of the entrepreneurs and vice versa. Effective mentors have experience in both starting businesses and angel investing.
- The reputation and network of a startup accelerator’s founder plays a significant role in the success of the program.
- It is not clear that a venture accelerator mentorship program can be scaled-up without comprising its quality.
- The success of a mentorship program relies on a strong sense of community among entrepreneurs.
- It is possible to run a successful and tight mentorship program without contractual or confidentiality agreements between the host organization, mentors and beneficiary companies.
- A successful venture accelerator can have a positive effect on the local culture of entrepreneurship.
- There is no formula for identifying high-potential startups but the profile of the startup team plays a greater role than the idea of technology on which the business is based. Selecting startups is both science and art and relies on the experience of a mentor program’s manager.
- Establishing early success through exits can lead to a strong brand for the mentor program, which in turn attracts better mentors and entrepreneurs.
- A startup accelerator mentorship program needs to be long enough for founders to develop demo products and pitch it by the end of the program.
- Matching companies with appropriate mentors is a long and iterative process.
1. Business model

Program Overview

TechStars is a for-profit “startup accelerator”\(^\text{16}\) that aims to invest in and accelerate the development of very early stage companies to a point where they can secure angel or venture capital financing, be acquired or grow to profitability. To achieve this, TechStars offers startups mentorship, an extensive network of business contacts and an opportunity to pitch their business ideas to investors. It offers educational sessions, some basic business services, a small grant to cover living expenses and working space. TechStars offers this support over three-month programs each year in several cities in the United States. Ten startups are selected in each location through a very competitive process. In each city, TechStars relies on a network of more than 50 mentors to provide support to the startups. TechStars is an intensive experience and requires a significant amount of personal effort from the startup founders to meet the program’s milestones.

To entrepreneurs, the value added of TechStars is to provide ready access to an extended community of key individuals during a very limited timeframe. These individuals offer “know-who”, “know-what” and “know-how”. Importantly, they offer sounding boards to startups, helping them continuously refine and even reinvent their business ideas. New entrepreneurs do not often have access to these individuals through their existing social and business network. The time associated with identifying, connecting and leveraging relevant individuals can be an important cost for early stage businesses with limited resources.

To its founders and investors, the main business value of TechStars is to provide support to startups in batches for efficiency and to leverage the local and national business communities. In contrast, angel investors and seed funds need to provide mentoring and networking support to their companies on an individual basis. TechStars also provides its founders and investors with an opportunity to source a high-quality deal flow for their personal angel investing or as part of their venture capital firms. They are able to interact closely with and review a number of startups during the course of the program. TechStars founders also gain satisfaction from the non-financial rewards of “giving-back” to the community and improving the local entrepreneurial ecosystem. The success of TechStars has increased the local and national visibility of its founders in business and political communities.\(^\text{17}\)

Background of TechStars

TechStars was launched in 2006 and ran its first program in the small city of Boulder, Colorado in 2007.\(^\text{18}\) Since then, it has launched programs in Boston, Seattle and New York. The TechStars founders include its current CEO and three other serial entrepreneurs/early-stage investors from the Boulder area. The four founders are highly successful and well known in the Boulder area and even nationally.

In January 2011, TechStars launched the TechStars Network, a global network of independently owned and operated

\(^\text{16}\) Also known as a “venture accelerator” or “seed accelerator”

\(^\text{17}\) This need not imply that this was their initial intention

\(^\text{18}\) The greater Boulder metropolitan area has slightly less than 300,000 residents.
organizations that operate startup accelerators along the same line as TechStars. Its purpose is to provide networking, training and support opportunities to startup accelerators. Twenty member accelerators have jointed the TechStars Network.

At the time TechStars was launched, there was only a handful of startup accelerators in the United States functioning along the intensive-mentorship seed fund model, notwithstanding university venture accelerators which have a greater focus on technology transfer. There are now more than 60 venture accelerators and this number is growing continuously. Y-Combinator, launched in Silicon Valley in 2005, is arguably the pioneer of the startup accelerator approach espoused by TechStars and others in the United States and beyond. Y-Combinator operates in continuous three-month program cycles and has funded more than 250 startups to date. Unlike TechStars, it does not offer companies office space. TechStars and has now become one of the most developed startup accelerator programs outside of Y-Combinator.

Startup accelerators differ from traditional business incubation programs in that:

+ Their primary focus is on intensive mentoring and networking.
+ They do not charge rent or fees.
+ They do not always offer work space.
+ They provide small grants to cover living expenses.
+ They take a small amount of equity.

+ They are often for-profit.
+ Their program timeline is much shorter with clear milestones.

**The Operational Model of TechStars**

TechStars offers free facilities and business services to its startups in city centers of its four locations. The facilities provide the startups with common office space, meeting space, lounge space, and utilities. The startups are nonetheless free to work from home or from coffee shops if they wish. Through its sponsors, TechStars also offers startups a number of free services, including webhosting, media public relations and legal council.

TechStars operates according to a fairly well structured model when compared to other mentorship programs. A few months before a program starts, TechStars accepts applications from entrepreneurs. Early applicants are invited to spend a day interacting with TechStars staff, mentors and alumni in the TechStars premises. Finalists are accepted to the three-month program. TechStars facilitates mentorship and networking through three channels: social events with speakers (a few times a week), educational presentations on specific topics, and meetings with mentors. The three-month programs can be divided into mentor-matching, product development and pitch phases (Figure 14):

+ **Mentor-matching:** during the first month an important focus of the program is on matching startups with appropriate mentors and offering them continuous feedback on their business ideas through networking. The first month, startups

---

19 http://www.techstars.org/network/

21 http://www.techstars.org/details/ accessed on March 17, 2010
interact with as many as 30 to 40 different individuals, with whom they can discuss their business ideas and receive feedback. These individuals including TechStars mentors, TechStars alumni, local investors, as well as people from outside the local business community, executives from large technology-based companies (e.g. Google, Facebook and Yahoo) and mentors from other TechStars locations. During half-hour meetings with mentors, startup teams pitch their ideas (the first month this is typically a 30 second pitch), receive feedback and discuss ways in which the mentors could help them. During the first month, startup founders can have two such meetings per day. These meetings provide opportunities for the startup founders and the mentors to get acquainted. Startup teams then identify which mentors they would like to work with during the rest of the program. If these one to two individuals, they become the “lead mentors”. TechStars Managing Directors follow-up closely on which mentors the startups have met and plan to meet and match startups with more mentors if necessary.

Getting the product ready: During the second month, TechStars continues to offer the same activities as in the first month, but the focus of the program shifts to getting the product ready for demonstration. This entails a lot of software programming work for the startup teams, but the teams continue to have networking and mentor meetings. The Managing Directors monitor the startups’ progress and provide feedback.

Refining the pitch: During the third month, the focus of the program is to refine the five minute pitch that each startup will have to give on Investor and Demo Day. Both the mentors and TechStars staff help the startups refine their pitch. Investor and Demo Day is the culmination of the program, where startups pitch to groups of investors from all over the country over a half-day event. Roughly half of the investors are angels and the other half VCs. This group is equally divided between local and non-local investors. In 2010, over 400 investors attended the TechStars Investor and Demo Days, of which 260 in Boulder alone.

Throughout the program, the TechStars Managing Directors and CEO have weekly half-hour meetings with each startup to follow up on their progress and ensure their needs are met. They encourage the startups to keep up with the milestones of the program. There is no daily schedule to follow apart from attending the educational and networking events. Companies can work on their products or on other activities from wherever and whenever they wish, but the program milestones impose significant pressure to demonstrate progress.

---

Figure 14: Typical TechStars timeline

Note: data estimates are shown for the entire program for 2011.

2. Financial Model

Total Program Implementation Costs

A TechStars program is estimated to cost between $400,000 and $600,000 per year to run in each city. This includes renting facilities for the program, hosting events, office supplies, utilities, part-time staff and management costs, and startup grants. This amounts to $40,000 to $60,000 per company. This amount is much smaller than the average angel investment of USD 174,000 in the United States, let alone the average VC deal of USD 4.3 million.24 25

TechStars is a for-profit company and finances its operations through investors and sponsors. Investors include the TechStars founders26 as well as external parties. There is a different mix of investors in each of TechStars’ four locations (New York, Boston, Seattle and Boulder). These include angel investors, some of which are CEOs of publicly listed technology-based companies, as well as VC funds.27 In 2010, its second year of operation, TechStars Boston raised $450,000.28 It has raised $2 million for

Financing,” University of Maryland working paper, 2008, p9
http://www.sec.gov/Archives/edgar/data/1486945/000148694510000002/xslFormDX01/primary_doc.xml

the 2011-2014 period, or $500,000 for each year.\footnote{29}

Sponsorship (i.e. donations) from outside organizations and individuals can range from less than one thousand dollars to tens of thousands of dollars (Table 14). In return for financial support, sponsors benefit from different schemes, including having their logo on the TechStars website, being recognized at events, and attending selected TechStars events. Sponsors gain brand visibility and get acquainted with future potential clients among the startups. Most of the graduates of the Boulder 2010 program are now in business relationships with some of the sponsors.

**Participant Financing**

TechStars takes equity in the startup companies and makes a return through exits. For each company TechStars takes a standard share of 6 percent of equity. This is common stock, not preferred stock. Common stock provides companies with more freedom than preferred stock since it does not imply a board seat or any special decision making rights.

A grant of USD 6,000 per founder, up to USD 18,000, is provided to each company. The grant is intended to help TechStars company relocate to TechStars and fully focus on their startup during the three months of the program and is not correlated to 6 percent of the assessed value of the company. The grant covers their living expenses. This minimal grant ensures that only entrepreneurs who really value the non-financial value of the program will be attracted, while others will self-select out.

TechStars itself does not provide follow-on funding to companies that exit the program but acts as a broker between startups and the early-stage investor community. This is done through the mentors’ personal contacts and through Investor and Demo Day. After the end of the three-month program, TechStars continues to help its companies raise funding from investors and takes a group to Silicon Valley once a year.

TechStars Founders and mentors sometimes also invest in startups on a personal level. According to TechStars, this does not have a negative impact on follow-on funding of TechStars companies that do not receive investments from the founders or their being labeled as “second-tier”.\footnote{30} This can be

\footnote{29} http://sec.gov/Archives/edgar/data/1511474/000151147 41100001/xslFormDX01/primary_doc.xml

attributed to the investor community’s understanding of the limited resources and specific investment profile requirements of angel investors. In contrast, a VC-backed seed fund would have more trouble securing follow-on funding for portfolio companies not invested by its VC parent. Lack of follow-on investment by a VC parent with significant resources would create a stronger negative signal in the investor community.

Program Return-on-Investment

In the short term, TechStars appears to have been turning a profit. As of May 2010, five of the ten companies from the first, 2007 round of the program had been acquired, two were otherwise still operating, one had produced another venture and two had failed outright. Four of the five companies have been acquired for more than USD 2 million. There is very little public information on how much the acquired companies were bought for and thus what TechStars’ equity in each of them would have been valued at, but according to the TechStars CEO the 2007 and 2008 rounds had turned a profit by September 2010. In effect, the worst case scenario assumption would be that four TechStars companies were acquired for barely more than USD 2 million, yielding a total acquisition volume of slightly more than USD 8 million. TechStars’ six percent equity share in each would hence be valued at USD 480,000 which would enable the 2007 program to break even.

There is no rationale for extrapolating the existing returns of 2007 to subsequent years. TechStars is relatively young so it is still too early to make firm conclusions on returns on investment to expect. The average length of an investment hold by US angel groups is 3.5 years and exits with superior returns tend to be held longer (eight years for ten times returns), so it is too early to draw conclusions from the return on investment of TechStars which started with a small sample of 10 companies barely four years ago. As of May 2010, TechStars retained equity in at least 27 companies that still have the potential to produce phenomenal returns or no returns at all. Moreover, the significant implosion of the VC market in the United States during the current global financial crisis obfuscates the full potential profitability of TechStars during periods of macroeconomic stability.

3. Beneficiaries

Selection of Participants

Joining the TechStars program is very competitive. The selection process starts with an online application. The online application requires basic information on the company, including its function - supported by a video of the entrepreneur - why it is unique, competitors, its business model and on the founders (see Appendix for the full questionnaire). The application process does not require a business plan. More than 2,000 teams have applied for 2011 and 40 will be selected (ten per TechStars program location) or a 2 percent yield rate. This yield rate lies between that of angel investors (between 3 and 5 percent) and that of the VC sector (1 percent) in the United States.  

31 http://www.techstars.org/results/

33 Wiltbank R and Boeker W, Returns to Angel Investors in Groups, 2007
34 MIT Entrepreneurship Center, Venture Support Systems Project: Angel Investors, MIT Entrepreneurship Center, 2000, p 35
receives an increasing number of applications each year. Applications are accepted over a six week period a few months before the start of the program. Figure 14 above displays a typical application timeline for the Boulder program.

The TechStars selection process has several stages. Applications are first reviewed and shortlisted by the TechStars management team and by TechStars’ investors. Shortlisted applicants that meet an “early-application” deadline are invited to take part in an event held at each TechStars location and entitled “TechStars For A Day”. There, applicants take part in various activities and network with TechStars mentors, staff and alumni. They attend information sessions, lectures, discuss their applications and obtain feedback on their business ideas. TechStars For A Day is an opportunity for TechStars staff to observe the applicants in a typical TechStars setting and interview them informally. After this event, TechStars Managing Directors continue to communicate with top applicants over email to gain a better understanding of their potential as entrepreneurs and their ability to leverage the program (e.g. willingness to learn and assimilate feedback constructively). In some cases, TechStars staff will hold an additional short meeting with the applicants before the final selection.

Startups are principally selected on the basis of the startup team, and to a lesser extent by their market and their business idea. Teams must have the potential to launch a business with national or global reach. TechStars focuses on the team’s dedication, mix of business, technical and other skills, and the readiness of the prototype. The business idea in itself is not the main focus of the selection process but rather the thinking and effort that lies behind. In some cases, TechStars startups completely rethink their business idea during the program.

**Participating Company Profile**

The vast majority of TechStars companies are centered around web-based or software applications. Many are social media companies. The program’s sectoral focus broadly reflects the entrepreneurial backgrounds of the four TechStars founders as well as the growing market for web applications. The program’s focus on web applications and software offers several advantages:

- These are not capital intensive sectors and do not require important resources at launch.
- Supply chains are simple, with companies often interacting directly with customers through a web platform.
- Prototypes can be developed over a short period, which keeps the program short and limits the time demand on mentors.

TechStars companies originate from different locations around the United States but each TechStars location tends to draw more applicants from their region. About half of the funded companies are local to the TechStars program.

Most TechStars companies are still at very early stages of development when they enter the program. They are generally still in stages of generating, validating and revising business ideas and have not yet secured angel financing or hired staff. They typically consist of two or three co-founders working on their first or second company. Many enter the program

---

without a product prototype. In some cases the entrepreneurs have not yet officially registered a company when they enter the program. Many have at least a few years of entrepreneurial experience and at least one of the co-founders has a technical background. Their age range is 25 to 40 years old.

Program Impact

TechStars has an exceptional track record, when compared to other early-stage seed funds or incubator programs. Of the 39 companies in the 2007 to 2009 cohorts, 34 (or 87 percent) were still active by mid 2010, an exceptional track record for startups. Sixty percent of TechStars graduates were able to raise external investor funding. Another five were profitable without external funding. Of those cohorts, six (or 15 percent) had been acquired by mid-2010, in one case by AOL (Figure 15 and Figure 16).

Although it is too early to determine how TechStars will perform in the longer run, its first batch of graduates have fared at least as well as the holdings of traditional angel groups. After three years, TechStars graduates exhibited similar failure rates as angel group holdings. One important difference when comparing the two groups is the much higher level of companies that were bought from the TechStars sample compared to the angel group average (Figure 17). This could be due to TechStars superior ability to prepare its companies and connect them to investors, or to the faster lifecycle of web-based startups compared to the average angel-invested startup. In some cases, TechStars mentors play a financing or management role in the companies after they graduate. One mentor invested in three of his mentees after the program. Many mentors continue to advise company on an informal basis after the program. Some become the company’s CEO.

Figure 15: Number of TechStars graduate companies by acquisition status, as of May 20, 2010

![Diagram showing acquisition status of TechStars graduates]


Figure 16: Number of TechStars graduates by external funding size as of May 20, 2010

![Diagram showing external funding size of TechStars graduates]

Source: www.techstars.org, accessed March 7, 2011.36

Note: funding includes angel and VC funding and acquisitions outside of family and friends.

The impact of TechStars is shared between the local community and for the wider national economy. By mid 2010, approximately half of the Boulder TechStars graduates remained in that city, while others had returned to their cities of origin or to other locations. Limited evidence from the Boston program suggests that the company retention rate is higher than in Boulder. This can be presumably attributed to the fact that Boston is a high-tech cluster with a very developed VC market while Boulder is much smaller and with a minimal VC market. Companies that originate from another city and end up staying in the TechStars program’s city often do so after creating rich business networks and have raised investments in that city. From a policy perspective, any community sponsoring a TechStars-type program outside of an existing leading high-tech cluster cannot expect to reap the full benefits. There are extra-regional spillovers.

4. Human Network

Scope of Advice

TechStars mentors play three roles with the startups:

✦ They provide basic business advice to companies (e.g. with the pitch, the business model, dealing with proprietary technology, finding financing).
✦ They introduce them to potential sources of knowledge, business partners, clients and investors.
✦ They act as sounding boards for the startups, allowing them to continuously redefine their business through rapid feedback, particularly during the first month of the program.
With feedback from the mentors, startups are able to deliver strong pitches on Investor and Demo Day. The pitches include personal stories, are visual and engaging, include a strong product demonstration to walk the audience through the problem and solutions and a well-articulated and clear structure.

Startups also receive more targeted and specialized advice from mentors and business leaders through educational sessions and informal networking events. Topics range from legal issues, investor financing, public relations, marketing, pricing strategy, hiring and many others. In some cases, TechStars helps companies create and submit company formation documents and investor documents. This can help protect first-time entrepreneurs from making early mistakes that will have costly repercussions in the future.

**Delivery of Advice**

As discussed above in Section 1, startup teams are matched with mentors in an iterative way during the first month of the program. Initial meetings are facilitated by the TechStars Managing Directors, on the basis of the startup and mentor’s profiles. However, the vast majority of companies do not end up working with these initial mentors. Ultimately, startups founders will select mentors on the basis of the “chemistry” between the two parties. Mentors are also free to express their preferences for certain companies and to refuse to work with particular companies. By the end of the first month of “mentor-dating” TechStars formally assigns one or two “lead mentors” to each company. They will meet with the companies for about one hour per week for the remainder of the program. Some lead mentors will put in more time with the company. In one case a mentor met with a company practically every day. Mentors are discouraged from becoming the lead mentor of more than one company at a time. Companies also continue to meet other mentors during the rest of the program, as required, in an ad-hoc way.

Mentoring sessions do not follow a prescribed structure. During these sessions, startups update mentors on their progress, mentors provide them with feedback and with recommendations for next steps.

Educational sessions are conducted quite informally, often over dinner. Presenters include entrepreneurs, investors, legal experts or local startups. Some sessions are conducted in the premises of local technology-based companies. The sessions take place in the early evening and include time for the startups to interact with the various mentors, advisors and speakers.

**Advisor Profiles**

Almost all of TechStars’ 278 listed mentors (60 for the Boulder program) are highly-experienced and successful serial entrepreneurs, typically of web-based or software companies. Many are also partners in VC funds or early-stage venture funds. TechStars also has a list of 28 Advisors with similar profiles, and in some cases backgrounds in large companies such as Google. Most of these mentors and advisors are highly successful and well-known in their business communities. They have a diverse mix of educational backgrounds that reflects the makeup of software entrepreneurs in the United States, some with degrees in liberal arts, others in physical sciences, others in computer science and law degrees. In addition, many have MBAs.
Apart from the mentors, TechStars brings in an entire community of human resources during the course of the program. These include graphic designers, lawyers and accountants. Throughout the program they give presentations, after which they are also accessible to startups for questions. In contrast to the mentors, their interest is more in finding new clients.

Apart from external mentors and advisors, the TechStars management, including its CEO, provides a lot of advice to companies throughout the program.

**Recruitment and Selection of Advisors**

The TechStars Managing Directors and founders recruit mentors from their social networks through informal processes. Typically, the Managing Directors either already know the mentor directly or they are referred to by a trusted source in their social networks. The typical selection process is quite informal, consisting of a short discussion with the mentor and due diligence through the internet and references. Mentors are selected for their extensive entrepreneurial experience. Academic credentials do not play an important role in the selection of mentors. TechStars also selects mentors on the basis of whether their interests are aligned with TechStars’. TechStars prefers mentors who are motivated by giving back to their community, deal-flow evaluation, looking for new entrepreneurship opportunities, staying abreast of technology, and networking with other mentors and startups. Mentors looking to develop relationships with companies in view of selling their services are not accepted. In view of TechStars’ growing popularity TechStars now receives hundreds of mentor requests. Mentors are attracted by the high-quality of the TechStars startups and of some of the other mentors serving in the program.

5. **Organizational Model**

TechStars is established as a limited liability company. In each city, the vehicle for the program is a limited liability company that raises its own funding for one or more cohorts of startups. In some cases fundraising is done on an annual basis, in which case a new TechStars company is registered as a one-year vehicle. In others cases, a TechStars location raises funding for a multi-year period (e.g. four years). Each location’s program is run independently with its own management structures, has fine-tuned its own model and has its own network of TechStars mentors. The three-month programs of each location are spaced out over the year so as to limit their overlap.

Considering its scale, media visibility and impact, TechStars has a very lean staffing structure. There are eight continuous staff members: the CEO, the CFO, four Managing Directors (one for each city), an accountant, a bookkeeper, the TechStars Network Director. In addition, each TechStars location is staffed by a temporary Program Manager and approximately three interns during the course of the program (Figure 18). Interns are unpaid and are typically graduate students in MBA or Law programs. Their tasks range from organizing events, meetings, taking notes, and helping companies with different tasks.

The management and founders of TechStars have backgrounds as startup entrepreneurs and most of them are also early-stage
investors. Most have founded several companies and mentored many startups. Their backgrounds contribute to the success of the program, since they need to be able to identify talented founders, guide them throughout the program and connect them with appropriate individuals.

With the possible exception of the TechStars CEO and the TechStars Network Director, other managers and staff members do not work on a full time basis year-round. Most of TechStars’ management is also engaged in managing other early-stage venture funds or in angel investing and work with TechStars on a full-time basis for five to six months of the year. This includes the three months of the summer program and two to three months before the program, selecting companies and mentors, finding sponsors and planning the program. At the end of the program, they typically spend a few hours a week over one or two months helping graduate companies raise funding. They do not receive salaries, but equity.38

The relationships between TechStars, the startups and the mentors are kept simple. There are no contracts, MoUs or NDAs between TechStars and the mentors or between the mentors and the companies. There are no contractual agreements, MoUs or NDAs between the startups and TechStars either. There are only verbal commitments between the different parties to participate in the three-month TechStars program. TechStars does not encourage its startups to disclose its trade secrets but the effectiveness of the program relies on sharing a fair amount of information on the business idea. This is part of the TechStars approach of valuing “idea execution” over “ideas”. Moreover, TechStars staff and mentors would run a high reputational risk if they were to disclose any information acquired from the startup companies, given that they all operate in tight regional entrepreneurship and investor communities.

6. Innovation Ecosystem

The four TechStars programs operate in cities with relatively well-developed entrepreneurship environments and cultures but still considered as “second markets” for startups when compared to Silicon Valley, which concentrates half of the country’s VC investments. New York, Boston and Seattle hold the bulk of the US VC market outside of California. Boulder stands out from the rest in that it only harbors a single early stage VC firm, is a small-sized city and does not have as many industrial and academic technology-based assets. It is home to a good public university, but not an MIT or Columbia University.

In spite of Boulder’s small size and “second-market” status, it offers entrepreneurs a supportive entrepreneurial culture that contributes to TechStars success. At the center of this entrepreneurial culture is a strong community of software entrepreneurs and investors, which creates the required framework for a broad and solid mentor network. Boulder’s recent startup phenomenon can be attributed to several factors. Importantly, it has the highest number of software engineers per capita in the United States and a substantial proportion of its workforce is involved in technology

The initial growth in technology expertise in the city is attributed to the University of Colorado and the fact that several national research laboratories are in the city. On top of that, budding entrepreneurs have been attracted by the lifestyle on offer in Boulder. These factors have combined with the presence of available capital and the entrepreneurial culture to create what is cited as a confluence of expertise, entrepreneurial verve and support. In the first three months of 2010 11 tech start-ups in Colorado raised a total of USD 57 million.

TechStars has no immediate plans to expand its program to more than ten startups and to four cities. This may be due to the central contributions made by the TechStars CEO to the implementation of the different programs. However, as mentioned in Section 1, TechStars has been spearheading the development of a global network of startup accelerators through the TechStars Networks.

---


Appendix to the TechStars Case Study

The TechStars Application Process

Source: www.techstars.org, accessed on March 9, 2011

PROGRAM

Which program(s) would you like us to consider you for? *
- New York City
- Boston
- Boulder
- Seattle

PERSONAL INFO

What's your name? *

What's your email address? *
Specify only one

What’s your phone number? *

YOUR COMPANY

Where is your team based, geographically? *
Please enter a zip code if in the US, otherwise enter a city and country name.

What will the name of your company be? *

If you have a web site or demo/prototype, what’s the URL? *
URL only.

Describe what your company does in 140 characters or less
(don't worry, we won't tweet it)

In more detail, what will your company do or make? *
It's strongly encouraged but not required that you send a 3-5 minute video explaining your company. You may also include a URL here.

What’s new, interesting, or different about what your company will do? *
Please provide information on current or likely competitors. Include key differentiators.*

Explain how the company will make money.*

Tell us about each founder *
(include their role, skills, education level, schools, past companies, past projects/URLs, etc)

What are some things that the team (or its members) have built on the web? *
Please provide URLs and brief descriptions.

Can each of the founders attend the entirety of the program, or do some of you have other obligations during the timeframe of the program.*
Please elaborate

Have you already taken any outside investment? *
Please describe if so.

Why should we choose your company? *

Where did you hear about TechStars?
# SMART Innovation Center
## Catalyst Program

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>26</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>26 projects</td>
</tr>
<tr>
<td>Number of staff</td>
<td>2</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>Up to USD 202,000 grants</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>Up to 18 months</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>N.A.</td>
</tr>
<tr>
<td>Program start year</td>
<td>2009</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Research teams are mentored by 1-2 advisors with complementary skills, in face-to-face meetings or via video or teleconference calls.
- Research teams benefit from partnerships with INSEAD and Chicago Business Schools for the development of go-to-market strategies.
- Research teams benefit from the alliance with MIT through exposure to US entrepreneurs and venture capitalists.
- The program director plays an important role in facilitating group mentoring sessions.
- The program plays an active role in recruiting CEOs to lead newly-formed companies.
- Business mentors help researchers prepare grant proposals.

Lessons Learned

- Mentorship is useful even at a distance, as long as the mentors and the mentees are able to communicate on an as-needed basis.
- Creation of partnerships with strong research and innovation centers as well as venture capital communities from abroad, particularly in the US, can be a powerful catalyst for the development of the local innovation ecosystem.
- Mentors can be recruited as volunteers even from abroad if a clear structure for the engagement is created and opportunities for networking offered.
- Alignment between catalysts, the research team and the Center Director with regards to project milestones and project monitoring are essential for a successful incubation and commercialization project.
1. Business Model

The objective of the Catalyst Program offered by the Singapore MIT Alliance for Research and Technology (SMART) Innovation Center is to help research teams accelerate their technologies’ migration from the laboratory to the marketplace. The Catalyst Program achieves this objective by pairing research projects with volunteer business experts from the same field over a period of 18 months on average and by making available funding of up to $202,000. The range of technologies includes primarily, though it is not limited to, biotechnology, biomedical devices, information technology, new materials, nanotechnology and energy innovations.

The government of Singapore has spent the last 10 years to build up a research base “from scratch,” by dedicating $6 billion\(^2\) to research funding through the National Research Foundation (NRF) and establishing the A*STAR research facility. In order to further promote research and encourage science-industry collaboration, building on Singapore’s successful research, the NRF partnered with MIT and established SMART in 2007. SMART is the first entity in the Campus for Research Excellence and Technological Enterprise (CREATE) being developed by NRF. It is also MIT’s first and only research center outside the United States. SMART was an outcome the Singapore government’s effort to position the country at the forefront of technological innovation and facilitate the transition towards a knowledge economy.

In 2009, SMART created its own Innovation Center, which is modeled after the Deshpande Center for Technological Innovation at MIT. Its main aim is to help researchers and their post-docs and graduate students commercialize their technology by licensing it to an existing company or spinning out a new company. The Innovation Center’s key activities in this regard can be summarized as select, direct and connect:

- **Select**: identify potentially game-changing technologies and researchers and develop initial go-to-market strategies.
- **Direct**: provide additional research funding in order to adjust research efforts towards commercially better-suitable direction.
- **Connect**: immerse the researchers into the network of venture capitalists and entrepreneurs and enable the realization of opportunities.

Similar to the Deshpande Center, the SMART Innovation Center has several programs, which facilitate the implementation of these activities:

a. **Grant Program**

The Grant Program offers three types of funding to SMART researchers and also to faculty at all Singapore Universities and Research Institutes, namely: Innovation, Ignition and Explorer grants. Since inception, the SMART Innovation Center has financed 26 projects.

(i) **Explorer Grants (up to $40,500)**\(^3\) are envisaged to assist individual students or student groups, with their faculty mentor, explore further development and commercialization of innovative work originated by the student(s) for a

---

\(^2\) The Government of Singapore has invested to date between SGD 6 and 8 billion into developing its research capabilities.

\(^3\) Explorer Grants amount to SGD 50,000 per project.
period of 6-12 months. So far, they have been offered to develop only web-based applications.

(ii) **Ignition Grants (up to $40,500)**\(^{44}\) are offered for faculty-initiated research for very early proof-of-principal work.

(iii) **Innovation Grants (up to $202,000)**\(^{45}\) are designed to de-risk the technology by developing prototypes or conducting proof-of-concept experiments and to determine a go-to-market strategy for the products or services being developed. The innovation grants are offered to faculty (principal investigators) and their research teams, which include post-docs and sometimes graduate students. The end product of the innovation grant is a well-defined business opportunity conducive to start-up company formation or to licensing to a commercial firm. The funding is offered for a period of 18 months.

\(^{44}\) Ignition Grants amount to SGD 50,000 per project.  
\(^{45}\) Innovation Grants amount to SGD 250,000 per project.

b. **Catalyst Program**

The Catalyst Program aims to provide mentoring services to the young entrepreneurs. “Catalysts” are volunteers either from Singapore or from the Boston entrepreneurial community who help assess ideas, identify the most effective paths to commercialization and assist the research teams in setting direction. They are involved in one or at most two grant-funded projects and interact with each research team on a regular basis to help establish a go-to-market strategy. Each team that receives funding from the SMART Innovation Center is expected to work with a Catalyst. Catalysts might be assigned to project teams later in the project cycle, depending on the team’s readiness and needs. The Innovation Center currently has a roster of 60 catalysts in Singapore and five at MIT.

c. **Educational Program**

The Educational Program offers short courses on entrepreneurship and innovation leadership. A “Bootcamp” was launched in April 2011 and it will become mandatory for all project teams who benefit from SMART Innovation Center Ignition or Innovation grants.

Furthermore, the SMART Innovation Center offers recipients of Ignition and Innovation grants the opportunity to work closely with business school students. In collaboration with INSEAD and Chicago GSB (both global top-ranked business schools with campuses in Singapore), the SMART Innovation Center has developed an “i-Teams” project, whereby business school students are partnered with SMART Innovation Center-funded projects and work together on developing go-to-market strategies. The end product of the i-Teams is a PowerPoint presentation that summarizes one of three types of recommendations: company formation, licensing and modification in research priorities (or even “give up” in some cases). SMART Innovation Center-funded projects have benefited already from the support of 10 i-Teams since 2009. The business school students have been primarily from INSEAD, Singapore Management University and National University of Singapore.

The Center also promotes networking with relevant enterprises from the Cambridge, Massachusetts area, which includes
Nurturing Innovation: Venture Acceleration Networks

presentations at the Deshpande “IdeaStream” event or participation in discussions at the MIT Enterprise Forum. The MIT Enterprise Forum, part of the MIT Alumni Association, is a platform for connecting technology entrepreneurs and the communities in which they reside. It offers over 400 educational and networking events across its 28 chapters globally.

The SMART Innovation Center “Flow of Project Development” is depicted in Figure 19. Projects that are selected through a competitive process (the selection process is described in Section 3), are managed by the research teams with the help of the assigned Catalysts. Projects are supervised by the Center Director to ensure that the teams meet milestones established in the Grant approval process to de-risk the technology, produce prototypes, conduct proof-of-concept experiments and formulate a go-to-market technology. The end goal of the SMART Innovation Center is to accelerate research projects to the stage of maturity where a company can be formed or a license identified. Company formation will be achieved by identifying VC in Singapore or Boston, and by bringing in a CEO.

2. Financial Model

The SMART Innovation Center is granted $1.62 million46 per year from SMART, which itself receives funding from the National Research Foundation of Singapore. These funds cover the costs of funding and running the Grant Program, described above. The Center accepts proposals for funding twice a year, and receives 15 applications per year, from which only 5-6 projects are selected. The type of grant that is awarded, whether Innovation or Explorer, depends on the stage of development of the research project. The grant is used to pay for the salaries of post-doc and graduate students and external experts or consultants. Although the grant is meant to direct researchers to an entrepreneurial phase, the Innovation Center maintains it as an academic grant (as opposed to a commercial investment) to create a safe environment for researchers. It is difficult to disaggregate the costs of the Catalyst Program since it is managed by the same staff and in the same premises as the other program components.

3. Beneficiaries

During the last 3 years since inception, the SMART Innovation Center has reviewed over 70 proposals and has funded 26 projects. Usually, applications come from local universities, such as National University of Singapore, Nanyang Technological University, the local Polytechnics, Singapore Institute of Management, Singapore Management University, Singapore University of Technology and Design, SMART as well as from MIT, when faculty members conduct joint research with Singapore. The MIT Deshpande Center on which SMART is based has evaluated over 500 proposals to date since creation and funded over 85 proposals. Of the proposals that received funding, 23 resulted in new companies being formed and in raising successfully venture capital.

46 The SMART Innovation Center has received SGD 10 million for the period 2009-2014, which amounts to SGD 2 million per year for its various programs and the administration of the Center.
Selectivity is a key principle of the programs both in Singapore and at MIT.47

Application Process

The application process for a SMART Innovation Center grant is straightforward and does not last more than 4 months (Figure 20). The application process consists of several stages:

1. Widely disseminated general call for proposals twice a year, which provide information about the types of research that it supports, who is eligible to apply and the amount of funding available.

2. Collection of Preliminary Proposals, or SMART Center Technological Innovation Grant Pre-Proposal. The Preliminary Proposals use the Deshpande application template and represent a 2-3-page summary of the proposed project. The Pre-Proposal includes a brief description of the opportunity, the proposed approach, the commercialization plan, the deliverables, the team composition and the required resources.

3. Review of Preliminary Proposals by the Selection Committee, with a “Yes” or “No” decision made for each proposal.

4. For approved proposals, a Full Proposal is requested and can be drafted with the
help of a Catalyst. The Full Proposal involves scoping the critical proof-of-concept development and outlining the go-to-market strategy. The Deshpande Center’s application template is used as a basis for the SMART Center Technological Innovation Grant Full Proposal.

5. **Peer review** of the Full Proposal at MIT or SMART by independent investigators as well as by a team of Catalysts who come from the industry.

6. **Presentation** by the research team and the faculty member to the Selection Committee, which includes the Center Director, several Catalysts and faculty members from MIT and SMART as well as a few government officials, followed by a Q&A.

7. **Decision of the Selection Committee to:**
   - approve
   - approve with revisions
   - ask the project team to resubmit during the next grant cycle with proposed revisions,
   - or reject the proposal.

8. **Final Clearance of background Intellectual Property (IP)** and preparation of an annual budget and milestones for final administrative approval by the Center Director.
Figure 20: SMART Grant Application and Award Process

Source: SMART Innovation Center Whitepaper
Project Team Assistance

A typical project team consists of the following members: (i) A principal investigator who is a faculty member; (ii) 2-3 post-docs or graduate students with no prior business experience; (iii) 1 Catalyst) and (iv) 1 i-team or 2-3 MBA students per semester. Projects normally last 18 months.

During the life of the project, the project team benefits not only from financial resources but also from professional guidance from the faculty, mentors, business students (i-Teams) and the Center Director. The latter has been instrumental in getting teams up to speed on running a start up. The teams meet with the Center Director weekly and have a lot of interaction via email as well. The Center Director also joins important meetings with i-Team members and contractors for the projects.

The SMART Innovation Center and INSEAD have recently (April 2011) launched a “Bootcamp” entrepreneurship course for project teams that receive funding. The Bootcamp consists of an intensive weekend of classes and workshops where the research groups are taught about the milestones in creating a business, the type of professionals or assistance to seek at the outset and how to go about raising more funds.

Program Impact

Based on MIT’s experience it is estimated that in the best case scenario 25% of the projects that receive support from SMART could result in the creation of a new company. Some research projects are also likely to result in the technology being licensed to a company.

As the SMART Innovation Center was launched only in 2009, no research projects have gone through the entire program yet. About 10 projects are nearing the end of their funding and it is expected that 3 companies will come be created as a result.

4. Human Network

Catalysts’ Responsibilities

Mentorship is a key component of the SMART Innovation Center experience. In order to ensure that project teams are able to achieve their milestones, the Center offers the possibility for Project Teams to receive guidance from Catalysts, who are from volunteer business experts from Singapore or from the MIT-Cambridge area in the United States. There is no difference between Catalysts based in Singapore and the ones based in the US aside from the format of their interaction with the project team, whether it is in person or virtual.

Catalysts fulfill a series of responsibilities:

- Review proposals for funding from SMART and MIT for small business research initiatives.
- Guide the research teams that were successful in securing funding through the technology commercialization process and help them bridge the gap between the research and the market place.
- Tap their own networks in academia, industry and finance to find the extra expertise needed for SMART-financed projects.
Provide feedback to i-Teams on their presentations with the pitch to the finance community for start up funding.

Ideally, teams would be offered two Catalysts. However, in reality, some teams receive one, others two, others none at all, depending on the technology at hand and the current roster of Catalysts. To date, it has proved more difficult to identify Catalysts in Singapore than in the US, because of the small size of the market and the novelty of the role.

Research teams normally interact with their Catalysts every two to four weeks, depending on the needs of the project. The location of the Catalyst is not considered important by the project teams or by SMART management. The distance with the US can be overcome through conference calls or Skype chats. Also, US-based Catalysts travel to Singapore twice per year for a period of 2 weeks at a time to meet with the teams in person. On average Catalysts spend between 10 and 20 hours per month per project.

**Catalyst Profiles and Selection Process**

The professionals who play the role of Catalysts are usually serial entrepreneurs, or people who have had extensive experience in a specific industry or in venture capital. They tend to come from the Singapore or Cambridge chapters of the MIT Enterprise Forum (about 1,000 MIT alumni between the two chapters) as well as from the TiE (Indian Entrepreneurs’ organization), which has a large chapter in Singapore, although no formal agreement with SMART. Catalysts are usually identified at venture community meetings or through references from current members of the SMART network. There is also an online application process for Catalysts. Professionals get involved with the SMART Innovation Center as Catalysts primarily because they are interested in learning about the technology pipeline. Should technologies become commercially viable, many of them would give up their roles as Catalysts and would get involved in the new venture as either partners or investors. The SMART Innovation Center also provides good opportunities to Catalysts for networking and meeting professionals from an array of industries.

The matching between the research groups and the Catalysts is done on the basis of the project needs and the technical expertise of the Catalysts. It is typically the SMART Innovation Center, and namely the Center Director, that does the pairing. There is flexibility built into the system, should the initial matching not work out.

**5. Organizational Model**

The SMART Innovation Center is an operating unit within SMART, both of which are based in Singapore. SMART itself is a not-for-profit Limited Corporation, owned by a single shareholder, which is MIT. The Innovation Center is run with a very lean staff. The staff consists of the Center Director and an Administrative Assistant. The Director follows closely the progress of each project and provides advice and connections to the project teams. The SMART Innovation Center has an Advisory Board, which includes a mix of venture capitalists, entrepreneurs, academics and government representatives and helps select and oversee projects (Figure 21).
The Director of the Center is a former academic as well as an experienced entrepreneur. He used to be the Assistant Dean at Johns Hopkins University Medical School and continues to be the CEO of a life science start-up. He is passionate about technology commercialization and fluent in both the researchers’ and businessmen’s language and attitude to technology innovation and commercialization. He has strong interpersonal skills, which enable him to constantly maintain and expand networks, coupled with this willingness to learn and adjust quickly.

Professionals who take up the role of Catalysts are required to sign an agreement with the SMART Innovation Center. The agreement covers two important areas: on non-disclosure and on conflict of interest. The non-disclosure clauses are meant to protect intellectual property. The articles on conflict of interest stipulate clearly that Catalysts are not to take any financial or business interest in the project while playing
this role. Should they be interested to pursue a different type of engagement with the project, they would have to step down as Catalysts.

6. Innovation Ecosystem

Singapore has created an environment conducive to fostering innovation and to attracting entrepreneurs. The regulatory environment is supportive of business creation, with Singapore ranking 4th (out of 183 countries) on the World Bank’s Starting a Business Indicator.\(^48\) There are also many tax benefits for start-ups, among the most notable ones being 0% corporate income tax for start-ups and a low 17% individual income tax. It also provides state of the art facilities for technology start-ups.

There is abundant funding for later stage companies. Temasek, a state-owned investment company, provides annually USD 1 billion\(^49\) into the venture capital industry. However, there is a funding gap for projects after the angel stage, which the SMART Innovation Center is trying to fill in by connecting project teams with the Boston-based VC community.

The main challenges to the technology innovation community are presented by the shortage of professional management talent for early-stage companies and also by the absence of an entrepreneurial community in the Singaporean academia.

\(^{48}\) http://doingbusiness.org/data/exploreeconomies/singapore

\(^{49}\) S$1.5 billion
# OCTANTIS

**Mentoring Program**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>200</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>25 / year</td>
</tr>
<tr>
<td>Number of staff</td>
<td>18 FT / 2 PT</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>10% equity option + venture pays a USD 2,400 service fee</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>8 –10 months</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>USD 2,400 / venture</td>
</tr>
<tr>
<td>Program start year</td>
<td>2004</td>
</tr>
</tbody>
</table>
**Special Features of the Program**

- The program has reached out to Chilean executives and entrepreneurs around the world and incorporated Chilean diaspora in the Mentoring Program.
- It offers a two-stage support process in which ventures who successfully go through a first business planning phase supported by mentoring, are then eligible for further support through an implementation phase.
- The program charges entrepreneurs a small participation fee, takes equity warrant, but makes grant funding available to entrepreneurs on a competitive basis.
- OCTANTIS is an initiative of academic and private sector organizations, and receives some public support from the government.
- Each program participant is assigned a program staff member who facilitates their support activities and participates in mentorship meetings with entrepreneurs and external mentors.

**Lessons Learned**

- Prestigious academic and private sector partners can boost the credibility of a mentoring program within the business community and help attract high value mentors.
- Communicating success cases early on in the program can attract deal flow and generate credibility.
- Creating effective mentoring relationships based on trust and mutual benefit rely on the mentor and mentee’s consent to work together, as well as on monitoring their relationship.
- In a country with a highly stratified social economic structure, where access to high-level executives is difficult for most aspiring entrepreneurs, mentors play an important role in helping entrepreneurs reach their full potential through social networks.
- Selecting "coachable" entrepreneurs who take advice constructively is key to the success of a mentoring program.
1. Business Model

Program Overview

The OCTANTIS Mentoring Program forms part of an 8 to 10 month Business Design phase to support early-stage ventures. The program helps entrepreneurs improve their business ideas and develop their business plans which they subsequently implement in a follow-up Acceleration program.

The Program’s supports entrepreneurs through external mentors who act as role models and help validate business ideas by asking relevant and difficult questions. Mentors. They bring support through connections with their own networks, strategic direction, and credibility. The Mentoring Program has been designed to operate in the Chilean business ecosystem, where creating and developing a high growth business requires connections to exclusive social networks.

Background on the OCTANTIS

Three stakeholders founded the OCTANTIS Business Accelerator in 2003: Universidad Adolfo Ibanez, IGT (a consultancy firm) and CEO (a non-profit organization composed of entrepreneurs in the ICT and biotechnology industries). OCTANTIS, provides value added to entrepreneurs on a networking model basis, but the incubator does not offer any physical space. Participating entrepreneurs, who are selected for their innovative business ideas and high growth potential, are given access to customers, partners, smart money (angel investors), mentoring, serial entrepreneurs, peer-entrepreneurs, government grants, venture capital, and other necessary resources to grow their business.

Operational Model

The Business Design phase of OCTANTIS includes two sub phases, Discovery and Opportunity⁵⁰, and Deepening Opportunity⁵¹, throughout which the following support is provided (Figure 22):

- Hands-on support: Generates evidence to validate business ideas and decrease levels of uncertainty around segmentation of clients, client needs, and value of the innovation in the consumer context.
- Discussion panels: Group or individual meetings with potential clients and people from industry as well as potential partners with the objective of initiating conversations that will allow the business to develop. At the end of these meetings the entrepreneur will have enough feedback to decide the next steps of the venture.
- Peer-to-Peer (P2P) activities: The objective is for entrepreneurs to interact among each other and stimulate their reciprocal support in the development and use of business networks.
- Workshops: These are practical sessions oriented towards establishing a common business language between entrepreneurial teams and OCTANTIS, related to the design of the business model, construction of the strategy and start-up phase (prototype, evidence, evidence, evidence).

---

⁵⁰ The main focus of the Discovery sub-phase is on collecting evidence to show that there is a promising business opportunity.
⁵¹ The main focus of the Deepening Opportunity sub-phase is to develop a business plan that is aligned with the market and can be implemented in the Acceleration phase.
opportunity, strategy, financial and others).

- Evaluation panels: Consist of formal presentations of the state of progress of the business before the OCTANTIS board and team. During the Business Design phase there are two presentations. The first during the second month includes the opportunity as well as evidence and prototype. The second during the fifth month includes key aspects of the business plan (e.g. business model, business strategy, marketing plan, and financials).

- Mentoring Program: Support by a mentor, typically during six sessions throughout the Business Design phase.

At the beginning of the business design phase each entrepreneurial team is assigned an entrepreneurial “trainer”, a staff member who facilitates the mentoring process and other services provided to the venture. When a start-up is first accepted to the OCTANTIS program, the entrepreneurial trainer is responsible for making a short list of possible mentors who fit the needs of the start-up with the help of the rest of the OCTANTIS team. The entrepreneurial trainer runs this list by the entrepreneur for feedback and selects an order in which the mentors will be contacted. The entrepreneurial trainer then contacts the possible mentor, provides basic information on the start-up and invites them to participate in the program. If the mentor has not participated in the program before, he/she receives a general description of the program and the role and main responsibilities of a mentor.

As a next step, a meeting is organized between the mentor and the entrepreneurial team, in which both parties get to know each other and decide whether they wish to work
Together. The meeting involves the mentor, mentee, entrepreneurial trainer and an OCTANTIS staff member close to the mentor. If the mentor and mentee decide not to work together after their initial meeting, the entrepreneurial trainer reaches out to the next mentor in the list and repeats the initial process.

When both mentor and mentee have decided to work together they agree on approximately six meetings (typically on a monthly basis), each of 1.5 to 2 hours long. The entrepreneurial trainer accompanies the mentor and mentee in these meetings.

During these six meetings the mentor places a strong focus on clients and action, networking and business relations and emotional aspects (motivation, optimism and ambition). The role of the mentor consists of guidance in the design of the business plan of the entrepreneurs.

OCTANTIS provides the following general guidelines for the Mentoring Program:

- In case the mentor has a conflict of interest associated with the entrepreneurs or the business, this situation must be cleared up during the first session.
- Each mentor should not work with more than one entrepreneur at a time.
- Mentor and mentee/entrepreneur must agree mutually to work together.
- The entrepreneur is responsible for taking notes at each session and submitting these to the mentor and also OCTANTIS.
- If a positive relationship develops during the course of the mentoring sessions, the mentor and mentee are encouraged to agree on their future business relationship, this may take the form of an advisory board member, investor, mentor, or other.

After completion of the Business Design phase, the most promising entrepreneurs are selected to move onto the OCTANTIS Acceleration phase, which provides further support. Very few entrepreneurs enter the Acceleration phase directly. Entrepreneurs that already have a business plan can enter a fast track Business Design program and in one to three months move onto the Acceleration phase. The Mentoring Program is only offered at the Business Design phase. In the Acceleration phase OCTANTIS continues to provide strategic guidance and connections to the venture through advisory boards. Boards meet monthly and board members are awarded a one percent equity warrant for their participation. Board members are often mentors or other individuals with relevant industry experience.

2. Financial Model

Program Implementation Costs

The operational costs of the Business Design phase are approximately USD 2,400\(^{52}\) per venture. This also include the costs of meeting rooms booked at OCTANTIS partner institution Universidad Adolfo Ibáñez, although these are provided as an in-kind contribution by the University as part of their partnership arrangements with OCTANTIS. In addition, within the Business Design phase,

\(^{52}\) CLP 1,200,000
OCTANTIS pays mentors a symbolic amount of USD 100\(^{53}\) (CLP 50,000) per session.

The “fixed” costs of the Mentoring Program are mainly related to the time associated to networking and reaching out to business networks and contacts from partners to raise awareness about the program and also set up informational meetings about the program. These activities are embedded in the everyday work of the staff.

**Participant Financing**

OCTANTIS requires a service fee and an equity warrant from entrepreneurs. The full cost of the Business Design phase (USD 2,400) is paid for as a program fee by the entrepreneurs themselves. Roughly 20 percent of entrepreneurs have been able to secure grants from different government (CORFO, Ministry of Economics, others) or multilateral organizations (Inter-American Development Bank, Corporacion Andina de Fomento\(^{54}\), World Bank/infoDev, others) to cover their service fees. OCTANTIS offers flexible payment options, such as 1, 6, 8 or 10 installments. On top of the service fee, OCTANTIS takes equity warrants of 10 percent. To date OCTANTIS has not received revenues from this stream.

Ventures participating in the Business Design phase are eligible to apply for a public seed funding grant program administered by OCTANTIS on behalf of the government. The Chilean Economic Development Agency\(^{55}\) (CORFO) runs the Innova Chile initiative, which aims to finance and support entrepreneurship and innovation in Chile. Innova Chile has developed a Seed Capital Fund to provide grants to innovative companies. OCTANTIS, as one of the organizations contracted to administer this fund, identifies grantees from among companies in its Business Design phase. Financial support is implemented in two phases: USD 10,000 as a first stage, to carry out market studies, validation of business ideas, client prospecting, basically the business plan development (this stage coincides with the Business Design phase of OCTANTIS). This grant funding may be used to cover the mentor’s costs. A second phase of seed capital of USD 80,000 covers the implementation of the business plan over a 12 month period.

If the entrepreneur does not receive funding from the Innova Chile Seed Capital Fund, payments must be made through other funding/grant options (CONICYT\(^{56}\), CORFO, Ministry of Economics, others) or directly out of the entrepreneur’s pocket.

OCTANTIS has reached a point where it can cover its costs on an annual basis. Revenues are distributed in the following manner: 1/3 seed capital grant funding from Innova Chile, 1/3 service fees and 1/3 special projects.\(^{57}\)

---

\(^{53}\) CLP 50,000  
\(^{54}\) http://www.caf.com/  
\(^{55}\) http://www.corfo.cl/  
\(^{56}\) http://www.conicyt.cl/  
\(^{57}\) Special projects include grants and funds related to entrepreneurship from organizations such as infoDev, CORFO, CAF and others.
3. Beneficiaries

Selection of Participants

One of the main challenges faced by OCTANTIS is to attract a high-quality deal flow of entrepreneurs. The organization receives applications for 800 to 1000 business ideas annually on average. Around five percent are selected for the Business Design phase and 50 percent of those are selected for the Acceleration phase as well (Figure 23).

Entrepreneurs submit their applications online. The main areas of the applications are the following:

- Description of project/idea.
- Description of the team.
- Progress made in project.
- What is needed to generate sales.
- Required support from OCTANTIS.

OCTANTIS staff provide each applicant with feedback, and each month those selected in a first round are invited to a selection panel where they present their business ideas to the OCTANTIS Board and management, who then selects the teams that are invited to participate in the Business Design phase. The selected teams agreeing with the terms and conditions of the Business Design phase and participate in the Mentoring Program.

The main selection criteria are the following:

- Ideas that have a sales potential of at least USD 100,000 during their first year in the market (typically during the Acceleration phase), and growth rates of 35% subsequently.
- A highly innovative, technology, service, or business model.
- Business that is friendly with the environment.
- Ambitious entrepreneurial team, with a preference for those with previous business experience.

Participating Company Profile

Most of these entrepreneurs join the program as a small team (2-3 people) with a business
Nurturing Innovation: Venture Acceleration Networks

idea, no established business entity and in need of funds. They are mainly professionals from Santiago over 35 years old. Very few have past entrepreneurial experience.

When OCTANTIS was first launched it did not focus on any industrial sector in particular due to a lack of critical mass of enterprises to generate sufficient deal flow. After a few years of operation, some trends have emerged and IT and biosciences have become more prominent among supported projects. The IT sector already had a critical mass of startups in Santiago, and the OCTANTIS Board made a deliberate decision to support biosciences due to its high-growth expectations. Other examples of sectors include food technology and design.

Program Impact

Since 2003, OCTANTIS has achieved the following results:

- More than 5,000 business ideas evaluated.
- Supported more than 300 projects.
- 80 new companies created.
- 60 active entrepreneurial initiatives in our portfolio.
- 12 international patents in process.
- Around USD 30 million in aggregate sales of OCTANTIS companies.
- USD 4.3 million in seed capital (Innova Chile public funding) and angel investment (private funding) for OCTANTIS companies.
- International network of contacts that includes collaboration efforts and alliances with Latin America, Spain, Australia, United States, among others.

On average approximately 25 entrepreneurs are supported each year through OCTANTIS Mentoring Program in the past 6 operating years. These start-ups go through the different early stages of their venture operations while creating their own network that will be the key tool to use to develop and grow their business. Impact is generally measured through revenues and investment figures of the participant start-ups.

Although results have been positive, efforts should be made to have a more organized control and monitoring of the business mentors, also to have periodical gatherings to maintain them engaged with the accelerator, because at any given time there are not more than 25-30 mentors working at the same time.

4. Human Network

Scope of Advice

Mentors are asked to develop the following business practices among entrepreneurs:

- Develop an offer: the ability to listen, offer, sell and satisfy clients.
- Anticipate and adapt to change: anticipate and transform the economic, technological and cultural changes of clients, competitors and the environment into opportunities.
- Create relations: integrate social networks for opportunities that strengthen the entrepreneur’s capacity in diverse areas (commercial, financial, productive, innovation and branding).
- Produce efficacy and quality: create commitment networks that assure the fulfillment of commitments with a
standard of quality and profitability that will maintain the entrepreneur in the market.

 Cultivate emotional strength: cultivate emotional predispositions that assure effective action in positive and negative situations, avoiding the smoothness of success and the resentment of failure.

Delivery of Advice

Once the entrepreneur is in the Business Design phase, the mentor and mentee agree to meet typically on a monthly basis. These meetings are scheduled by OCTANTIS and have a duration of 1.5 to 2 hrs. When mentors are finished with a specific team they are encouraged to become more involved with the start-up under future terms that are out of the scope of the Mentoring Program. Mentors remain in the OCTANTIS business network and if interested may be called upon for further opportunities with other entrepreneurial teams.

Advisor Profiles

OCTANTIS has a pool of approximately 200 mentors. These are alumni from Universidad Adolfo Ibanez, members from the CEO (partner of OCTANTIS) group of entrepreneurs mentioned previously, general networks from the OCTANTIS staff and members of the Chilean diaspora. In its early stages, OCTANTIS mainly recruited mentors from its three stakeholder organizations (University, IGT and CEO). Over time the pool of mentors has expanded, mainly through staff contacts from events, conferences and others, recommendations of current mentors, and general networks that have been formed by the OCTANTIS.

Mentors from the diaspora are successful Chilean businessmen/women who often hope to become involved in business relationships when they return to Chile. The new entrepreneurs supported by OCTANTIS may bring new business opportunities to the diaspora members who bring to the new entrepreneurs an international perspective from the early stages of their business.

Mentors usually have over 10 years executive experience in a specific industry and/or similar experience building and shaping new start-ups.

Recruitment of Advisors

When a new startup requires a mentor, OCTANTIS first attempts to identify one in its existing pool of 200 mentors. If there is not a good fit, it searches outside of its network, thereby further expanding its network.

The main partners of OCTANTIS played a critical role in the initial recruitment of mentors. Their prestige opened many doors. CEO is an organization of entrepreneurs in ICT and biotechnology who are committed to supporting other entrepreneurs, through activities such as mentoring. Universidad Adolfo Ibanez is a leading business school, and its alumni are high-level executives in the most important companies in Chile.

OCTANTIS has also reached out to Outplacement organizations for experienced executives that are looking to get involved in business through diverse paths (mentoring, investing, others). An important step towards reaching out to the Chilean diaspora has been working with ChileGlobal58 an organization for

58 http://www.chileglobal.org/
Chilean diaspora - mainly in the US. ChileGlobal has established networks to identify Chileans interested in supporting start-ups in Chile.

Recruitment is done by staff with individuals that have the potential of participating as a mentor in the Mentoring Program, OCTANTIS occasionally receives requests to participate in the program as a mentor and these are attended individually.

5. Organizational Model

OCTANTIS is legally part of the Universidad Adolfo Ibanez, which is the legal entity. OCTANTIS intends to form a separate non-profit corporation in the future. It is divided into four major organizational areas:

1) Business Design: works with the entrepreneurs to design a consistent growth vision and develop a world-class business plan.

2) Business Acceleration: provides entrepreneurs with more support to achieve business growth (advisory boards, strengthened entrepreneurial teams, access to potential investors, etc.) and implement their business plans.

3) Operations & Finance.

4) International linkages, which works closely with 1) and 2) in order to assure that every entrepreneur develops an international scope as well as to insert innovative companies into foreign business environments to accelerate their growths.

The OCTANTIS staff is multidisciplinary and includes 18 people from diverse professional backgrounds. This enables the program to deal with growth entrepreneurs come from a wide scope of industries and backgrounds. The CEO of OCTANTIS has an industrial engineering background, with diplomas in coaching and human resources. The leadership style is horizontal and based on personal responsibilities and delegation schemes. The board of directors is composed of six members, two from each partner organization (CEO, Universidad Adolfo Ibanez and Consulting firm IGT).

Entrepreneurs who enter the OCTANTIS program sign a proposal and a contract that contains the terms and conditions of the Business Design phase as well as payment arrangements and intention of equity warrant yield. There are no non-disclosure or conflict of interest agreements.

6. Innovation Ecosystem

Chile has a population of approximately 17 million inhabitants, with six million concentrated in the metropolitan area of Santiago where OCTANTIS is located. GDP has made rapid progress in its economic development in the past few decades, and had a growth rate of 5.3 percent in 2010. The Chilean economy ranks 30th out of 132 nations in the Global Competitiveness Index 2010-2011. Chile has a very efficient goods and labor markets (28th and 44th, respectively) and a relatively sophisticated financial markets (41st). The country also has solid macroeconomic policies (27th for macroeconomic stability) and transparent institutions (28th). On the downside, Chile needs improvement in its innovation
potential, an important component for this is the countries quality of educational system (ranked 101st for primary education and 45th for higher education).

As far as Starting a Business in Chile, according to the Doing Business Report 2011 it takes 8 procedures, 22 days and represents 6.8% of income per capita as opposed to Australia where it takes 2 procedures, 2 days and represents 0.7% of income per capita. Efforts in reducing times for starting up a business as well as closing them are necessary to give more dynamism to the entrepreneurial culture.

According to Global Entrepreneurship Monitor (GEM) about 16.8% of the adult population is involved directly or indirectly in initial stages of entrepreneurial activities. Most opportunities are based on differentiation and less so on innovation. Also, most entrepreneurs are looking for nationally centered businesses, which have lower potential of growth. A main challenge for OCTANTIS has been to attract high growth potential entrepreneurship. Moreover, contrary to high-income economies, less than half of the country’s R&D is performed in the private sector.

http://www.gemchile.cl/
# MIT Venture Mentoring Service

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>140 mentors</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>900+ entrepreneur groups, 80+ start-ups</td>
</tr>
<tr>
<td>Number of staff</td>
<td>3.5 FT (paid), several PT volunteer staff</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>Mentoring service is provided to beneficiaries for free</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>Mentoring period varies; up to 7 years so far</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>Estimated at USD 500,000 or USD 2,000/venture</td>
</tr>
<tr>
<td>Program start year</td>
<td>2000</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Voluntary, free mentoring services with lean, low-cost management structure.
- Accessible to ventures at any stage of development, in any types of activities.
- Long-term engagement and flexible format adapted to the evolving needs of ventures.
- Focus on educating entrepreneurs, not on immediate wealth creation.
- Internal guidelines and peer pressure mechanisms to minimize mentors’ conflict of interests.
- Referral-based, “prestigious” mentor network, autonomously attracting high profile mentors.

Lessons Learned

- It is possible to run a mentoring program with some level of success without picking winners.
- Low cost, self-sustainability, scalability can be achieved by cultivating and attracting mentors to a prestigious network.
- The success of VMS depends on the presence of MIT and the Boston innovation cluster. VMS cannot thrive in a vacuum but MIT can thrive without a formal mentoring program.
- It is difficult to assess the impact of a mentor program with an educational objective since most of the skills acquired by the entrepreneurs are tacit and difficult to measure.
- A flexible program structure and format can help address the needs of different types of mentors.
Nurturing Innovation: Venture Acceleration Networks

1. Business Model

Program Overview

MIT VMS (Venture Mentoring Service) is a voluntary-based, education-oriented, non-selective mentoring program with more than 10 years of history in operation. VMS’s mission statement is as follows:

“MIT VMS is an educational program, based on the belief that a fledgling business is far more likely to thrive when an entrepreneur with an idea can draw on the advice and guidance of a group of mentors with proven skill and experience. Through active support of entrepreneurs, MIT VMS contributes to the entrepreneurship education of the MIT Community, strengthens MIT’s role as a leader in innovation, and helps to broaden MIT’s base of potential financial support.”

The VMS program is administratively flexible while philosophically strict – while guiding principles are imposed and potential breaches are actively monitored, the relationships between mentors and ventures is not rigidly structured in terms of the number of mentors assigned to each venture, the frequency and format of meetings, the type of the advice provided, and so on. These evolve over time and the mentors are assigned to ventures as long as ventures wish.

Background on MIT VMS

MIT VMS was initially proposed in 1997, and launched in 2000 after a few years of contemplation and adjustment by an MIT alum and an MIT professor. It formalized a practice of informally matching prospective entrepreneurs with communities of experienced professionals that had existed long before at MIT. The VMS network started with a founding group of seven mentors. In 2000, VMS enrolled 20 venture teams and provided advice through 21 mentors. It has since then rapidly expanded, but appears to be approaching steady state since the past couple of years (Figure 24, Figure 25). Programs in many universities and municipalities (e.g. MaRS, InnovateVMS) consider MIT VMS to be a model of best practices and have tried to adopt its design principles.

60 In 1997 Former MIT provost Robert Brown suggested a meeting between Alec Dingee, an MIT Sloan School of Management alum, and MIT Professor David H. Staelin, the two who later became the co-founders of MIT VMS. While an initial proposal was made to establish VMS as a joint venture between MIT Sloan School and Engineering schools, with the MIT Entrepreneurship Center expected to be its host, it took until 2000 to decide key people and funding, and VMS’s formal structure directly under MIT office of provost. (http://web.mit.edu/vms/about_vms.html)
VMS’ growth is largely on “auto-pilot”. It relies exclusively on references and word of mouth for recruitment of volunteer mentors and participating ventures, and on mentors’ self-discipline, culture of “giving back” and non-financial incentives (e.g. reputations among peer mentors, opportunities of satisfactory engagements with ventures) for their involvement in the program.

Operational Model of MIT VMS

MIT VMS’s approach to mentoring services follows four principles:

- The services are free and have no strings attached.
- The advice is unbiased and mentors must follow clear guidelines.
- The advice is educational and about guiding entrepreneurs rather than directing them.
- MIT VMS does not exist to pick winners.

Free Services

Ventures do not pay or surrender equity to participate in MIT VMS. Operational costs are financed through the founders’ seed funds, donations, sponsorships and consulting activities. Mentors offer advice to ventures for free.

MIT VMS attracts mentors through the “prestige value” of being affiliated with its exclusive network. New mentors are recruited only through referrals of existing mentors. This is designed to ensure the quality of mentors since referring mentors puts their own reputations at stake.

MIT VMS gives mentoring relationships particular flexibility. Mentoring relationships can continue for several years, as long as the venture wishes, offering different type of advice depending on the developmental stages of the business.

Strict guidelines for mentors

The features that managers of the VMS program consider critical to its success is the trust relationship between ventures and
mentors. “Guiding Principles,” drafted by the founders, discussed with the deans and faculty members and approved by MIT’s General Counsel, are designed to ensure relationships of trust.

- Mentors and entrepreneurs are subject to MIT rules and regulations.
- Student entrepreneurs are encouraged to finish their studies.
- Mentors are prohibited from investing in ventures that they are also advising.
- Further consulting roles for the mentors must only arise through solicitation from the venture.
- MIT VMS and mentors must respect the sensitivity of proprietary information and maintain its confidentiality.
- Mentors must be vigilant towards potential conflicts of interest.

These principles aim to eliminate any potential conflict of interests, keeping mentors from associating any of their advice with their commercial or personal career interests.

*Educational*

As clarified in its Mission Statement, MIT VMS aims to advance MIT’s mission in entrepreneurship education. VMS managers see the focus of mentoring as being on “developing entrepreneurial leaders, not developing enterprises.” The underlying premise is that by having the opportunity to use the skills and knowledge of a business mentor, an entrepreneur with a good idea will be better able to navigate the often daunting prospects of competition, financial planning and the like that are all part of starting a business. Ventures entering the programs are often at a stage where they have only very preliminary start-up ideas, and through the mentoring process, they may decide to give up the idea rather than rush to establish a new company. MIT VMS treats this as a part of an educational process, which is why the guideline asks “students shall be encouraged to stay in school”.

*Not picking winners*

MIT VMS does not either focus on specific sectors or set targets in promoting specific thematic areas. The enrolled ventures span across a broad range of activities, not limited to research-oriented, technology-driven start-ups but also including retail services and not-for-profit or social enterprises.

*Consulting services*

Since 2007, in addition to mentoring of MIT-affiliated ventures, MIT VMS also provides fee-based advisory services, called “Outreach Services”, to organizations that intend to establish similar mentoring programs. Its service menu includes:

- 3-days workshop (USD 20,000 for up to 5 participants, who must include the key individuals responsible individuals for operating the new mentoring service).
- A half-day workshop (USD 1,500 per person)
- Customized on-site support by VMS professionals (fee varies).

Examples of countries that have designed mentoring services with VMS’s help include: Canada, Chile, Colombia, the Netherlands and Switzerland.
2. Financial Model

Program Implementation Costs

VMS management estimate the three largest program cost components to be:

- Staff costs.
- Food and drinks for the mentors meetings.
- Parking for mentors meetings.

Rough estimates\(^\text{61}\) indicate that MIT VMS's operating budget is at most USD 500,000 or USD 2,000 per venture per year.

Most of the staff works on the management of the program on a voluntary basis. Staff costs cover 3.5 full-time equivalent (Operations Manager, Office Manager, Venture Advisor x1.5). The office is housed within MIT's administrative buildings, and provided at no cost by the university. MIT VMS also enjoys non-financial benefits from being under MIT's Provost Office: monthly mentor meetings take place in what is considered to be one of the most prestigious conference rooms in MIT, directly under MIT's famous “dome,” imparting on the program and its affiliated mentors a definite sense of high stature.

Because mentors’ incentives to participate largely rest on the quality of their experiences and their access to the network of peer mentors, “taking care of the mentors” is one of the critical elements for the program’s sustainability. Food, drinks and parking, incurred from monthly mentor meetings, are therefore non-negligible cost components.

MIT VMS draws revenues from:

- Founders’ seed funds.
- Donations / Sponsorships, mostly from wealthy individuals from MIT’s alumni network.
- Consulting services (the Outreach Program).

Participant Financing

The beneficiary ventures do not incur any costs for participating in the program. Entrepreneurs’ response to the question “have you paid for VMS service if it were not free?” during a focus group were nuanced. The group mostly agreed that they would not pay for mentoring. Some suggested that interactions with paid mentors would involve totally different mindset, with a much higher commitment level. Others believed that paying a mentor would negatively affect trust by turning a social relationship into a market relationship.

3. Beneficiaries

Selection of Participants

The only requirement to the applicants is that at least one member of the team should be an MIT affiliate (e.g. student, faculty, staff, alumni). As clarified in the guiding principle “do not pick winners” no criteria is applied in terms of the type of venture’s activities, as

\(^{61}\) While MIT VMS budget is not disclosed, MIT discloses salary bands of administrative staff (http://web.mit.edu/hr/compensation/salary_admin.html). Assuming that the Venture Advisors, with 25 and 35 years of experience respectively, are at a high grade while Operations Manager and Office Manager are at a middle level, 3.5 FTE can be estimated to be between USD 300,000 to USD 400,000. Food, drinks and parking for monthly meeting with 80+ attendants are estimated to cost $800 to $1,000 per month.
long as the proposed idea “is legal and does not deny the law of physics.” The application can be turned down if “the idea is not well defined yet,” but the interviewed manager indicated that the screening is not necessarily rigorous. During recent years, VMS has accepted 10 to 15 venture teams per month.

Program candidates follow the steps described below:

- Complete and submit a questionnaire\(^{62}\) to provide basic information about the team and the venture or the idea the team is pursuing.
- The program’s “intake specialist” contacts the entrepreneur and conducts a phone interview.
- Once accepted, the entrepreneur signs a form agreeing to abide by the VMS rules and principles.
- A team of mentors is assigned to the entrepreneur, and the first mentoring session is scheduled.

**Participating Venture Profile**

Participating companies or teams vary both in terms of their nature of business and their stage of development. Many are located around MIT, and 40 percent of the teams are comprised of MIT students. As of the end of 2010, more than 70 ventures are launched and executed among the 220 ventures enrolled in the program. This means two-thirds of the enrolled firms could be expected to establish a company in the future.

Many teams participate with immature ideas, some just give up, and others go on to establish companies and continue to engage with VMS for several years. Ed Roberts, an MIT professor and the founder of MIT Entrepreneurship Center, a separate program, describes this dynamics as follows:

“Prospective entrepreneurs often come to VMS at very early stages in their idea process—usually before there is a business plan, a strategy and revenue model, a team, or any funding.

The VMS staff and volunteers don’t screen to pick winners; rather, VMS’s mission is to use any plausible idea as the focus for education on the venture creation process. The process of forming a viable company can take anywhere from a few months to as much as five years. Eighty-eight new companies, or more than 17 percent of the ventures that have signed up as VMS “clients,” already had formed operating companies by mid-2007.

Ultimately, many of the prospective entrepreneurs find their ideas are not practical as ventures, but they have learned much about being entrepreneurs and forming ventures. Some of them return with another venture concept that does turn into a company. The ventures served during the first seven years of VMS have raised total funding that significantly exceeds $350 million. This includes venture capital and angel investments, grants, and other seed capital.”


\(^{62}\) http://web.mit.edu/vms/VIF%20Form.doc
Program Impact

Evaluating the impact of MIT VMS is not straightforward. One may argue that the more than 70 companies established and the USD 350 million of funds raised by ventures in the program attest to the program’s impact. However, there is no counterfactual to isolate the impact of the program. There is no way of knowing to what extent in Cambridge’s thriving VC, angel investing, technology and entrepreneurial community the same entrepreneurs would not have established the same companies and raised the same amount of funding without mentoring.

A more modest question would concern the educational effect of the program rather than its impact on the entrepreneur’s start-up decision and its connection to relevant mentors: i.e. did the mentoring through VMS help entrepreneurs make better informed decisions, or even more broadly, learn about entrepreneurial processes, as VMS states in its mission? While participating entrepreneurs and other stakeholders indicate that the beneficiaries’ appreciation of their mentors vary, this in itself is also not a determining factor of the program’s quality. VMS casts a wide net and is not selective of its ventures, and some of the prospective entrepreneurs in the program may simply not be willing or able to accept the mentors’ advice constructively.

Start-up decision and mentor link-up effects

In a report on the entrepreneurial impact of MIT, Ed Roberts conducted a survey of MIT alumni entrepreneurs, regarding the factors that were important for them to launch start-up companies. The study suggests that VMS’s influence on the entrepreneurs’ start-up decisions have been almost negligible (Table 15). VMS was only established in 2000 and the survey was conducted in 2003, so a visible influence of MIT VMS can be expected. This might or might not be a valid argument. As a comparison, influences of other key components of MIT’s innovation ecosystem are shown in Table 16.

MIT Enterprise Forum started its key activity called “Startup Clinic” in 1982, the Technology Licensing Office was established in 1985, the Business Plan Competition in 1990 (as a USD 10K Business Plan Competition; expanded to USD 50K in 1996, and to USD 100K afterwards), and the Entrepreneurship Center in 1996. These programs and institutions have affected not only current MIT students but also alumni who had graduated decades earlier to make start-up decisions.

The single strongest source of influence on start-up decisions has been MIT’s Entrepreneurial Network, which is creates connection among MIT affiliates. One hypothesis is that entrepreneurs have found mentors through MIT’s network even without formal arrangement for mentor matching.

---

64 Directly addressing this question usually involve randomizing both recipients (treatment group) and non-recipient (control group) with comparable attributes and conducting econometric analysis, which this report does not intend to describe.
Table 15: VMS’s influence on start-up decisions

<table>
<thead>
<tr>
<th>Graduation Decade</th>
<th>1950s (N=73)</th>
<th>1960s (N=111)</th>
<th>1970s (N=147)</th>
<th>1980s (N=144)</th>
<th>1990s (N=145)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venture Mentoring Service</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>1%</td>
</tr>
</tbody>
</table>


Table 16: Other programs’ influence on start-up decisions

<table>
<thead>
<tr>
<th>Graduation Decade</th>
<th>1950s (N=73)</th>
<th>1960s (N=111)</th>
<th>1970s (N=147)</th>
<th>1980s (N=144)</th>
<th>1990s (N=145)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumni Regional Clubs</td>
<td>5%</td>
<td>5%</td>
<td>3%</td>
<td>12%</td>
<td>3%</td>
</tr>
<tr>
<td>MIT Enterprise Forum</td>
<td>7%</td>
<td>16%</td>
<td>15%</td>
<td>22%</td>
<td>9%</td>
</tr>
<tr>
<td>Technology Licensing Office</td>
<td>1%</td>
<td>0%</td>
<td>2%</td>
<td>4%</td>
<td>11%</td>
</tr>
<tr>
<td>MIT Business Plan Competition</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
<td>3%</td>
<td>30%</td>
</tr>
<tr>
<td>MIT Entrepreneurship Center</td>
<td>3%</td>
<td>1%</td>
<td>2%</td>
<td>1%</td>
<td>12%</td>
</tr>
<tr>
<td>MIT’s Entrepreneurial Network</td>
<td>26%</td>
<td>25%</td>
<td>32%</td>
<td>40%</td>
<td>50%</td>
</tr>
</tbody>
</table>


*Educational effects*

VMS entrepreneurs expressed mixed views on the program’s actual benefits. Positive views included:

- Mentors’ opinions are invaluable for “reality check” of the ideas.
- Mentors serve as “sounding board,” giving chances to practice “how do I convince her?”
- The “tactical” advice is useful, based on mentors’ rich experiences, on how to survive the immediate 1-2 months challenges.

- “Homework” that mentors give adds certain external pressure to the team and helps impose discipline.
- Mentors connect us to additional mentors, potential deals, investors.

Negative or reserved views included:

- The quality of the mentors varies – among our five mentors, two are now critical for our company, but the other three add little value.
Frequent disagreements among the mentors confuse us.
Connections, advice, homework seem to come at random.

4. Human Network

Advisor Profiles

Among the more than 140 mentors in the mentor pool, around one hundred are actively engaged as part of mentoring team(s). Around 80 mentors participate in the monthly mentor meeting organized by VMS.

The professional backgrounds of the mentors span many technical and sectoral domains. Many mentors are not experienced serial entrepreneurs but have, or had, management positions in industry. Some have legal backgrounds and one is a retired business journalist. The two most senior mentors—the two Co-Directors—both have corporate background: one has 37 years of experience in DuPont and other chemical companies, and the other has 35 years of experience in management consulting. Although the age and gender mix of mentors is diverse, there is a bias towards older individuals. MIT affiliation is not required although many of the mentors are MIT alumni.

Recruitment of Advisors

One of the key roles of VMS is to foster a mentor community. Recruitment of the mentors is done only through referrals, to give the network a status of exclusivity. Motivation for joining is not only to enjoy interactions with interesting ventures and “give back to the community,” but also to gain access to a network of peer mentors. VMS makes every effort to “feed and entertain mentors” by hosting monthly meetings, disseminating information updates on ventures, and bringing in new mentors on board.

VMS does not proactively reach out to alumni pool or other mentor candidates. The program expects current mentors’ positive experiences to attract new mentors through word of mouth. Mentors describe their motivations to join as follows:

- Invited by a friend, attracted to getting to know interesting MIT start-ups.
- Enriching and educational experience by helping the younger generation.
- Connecting to talented people as peer mentors.

Once recommended by an existing member of the mentor network, mentor candidates are interviewed to make sure that their motivations are not to look for new jobs or for new investment project. VMS reports that it does not often turn down candidates.

Once admitted, new mentors go through brief training activities (e.g. guiding principles, introduction to the VMS intranet system, coaching techniques, etc.) and are asked to subscribe, in writing, to the VMS Guiding Principles. Particular emphasis is placed on minimizing potential conflict of interests and protecting entrepreneurs’ interests, in order to provide objective, third-party advice free from any personal agenda. Potential investments by mentors need to go through pre-defined procedures. As stated in the guiding principle, “any initiative pertaining to an operational or consulting role for a mentor must come from the venture.” The mentors
are not allowed to approach ventures with any interests other than helping and advising.

Because mentoring is done in teams of mentors, VMS expects that “self policing” through peer pressure will help avoid conflicts of interest. In a few cases, proper procedures were followed and mentors formally stepped out of their mentoring relationship before taking board or management positions in the companies that they initially mentored.

Mentors are matched to ventures by expressing their preferences to the VMS program. In some cases, the composition of the venture team changes as the venture grows and faces different types of challenges that require different types of expertise.

**Delivery of Advice**

The scope and contents of the mentoring sessions are flexible, left to the mutual agreement between mentors and ventures, and change with the changing needs of the ventures. Mentoring sessions can cover brushing up or “reality test” of business plans, making connection to potential customers, managing the team, or any other needs that the venture may face. Mentor meeting schedules with ventures range from every two weeks to twice a year for older ventures. Mentors are mostly based in the Cambridge Massachusetts area where MIT is located, and mentoring sessions take place face to face.

The steps involved in the mentoring process are as follows:

1. The VMS office compiles updates of all ventures every month, and disseminate this information to all mentors two weeks before the monthly meeting

2. 10-15 new ventures are enrolled per month, and the mentors select ventures they are interested in mentoring. Typically, 3-4 mentors form a team for one venture, but the actual number of mentors vary (e.g. 20 self-nomination when “Clocky” came out)

3. Typically, entrepreneurs present their idea or business plan to the mentors during their first meeting, and the mentors help them define a roadmap and immediate priorities

4. Mentors set some “homework,” to be completed by the entrepreneur by the next meeting. The contents of the homework and advice also vary, and typically evolve depending on the stage of the development of ventures (e.g. dealing with intellectual property issues, marketing products, forming a company, financing, forming a management team, identifying potential leads, etc)

5. The frequency of the meetings is based on the entrepreneurs’ needs and the mentors’ availability.

6. Mentors stay with the venture as long as the venture wishes. Longest mentoring relationship by now is 7 years.

7. One mentor plays the role of lead mentor to make sure the mentors team best serve the needs of the entrepreneur and reconfigure mentor team when needed

---

65 An alarm clock that hides away to force the user to wake up; http://www.media.mit.edu/press/clocky/
5. Organizational Model

VMS is not an independent legal entity but is a unit of the university, situated directly under MIT’s Provost Office, the highest level of MIT’s management, and is governed and managed through two layers of committees, which include an Operations Committee, an Executive Committee. It has a lean organizational structure, with two full-time staff members and several former mentors, volunteer and part-time staff. Figure 26 shows the organizational structure of the program.

The Operations Committee is responsible for representing the interests of MIT and meets on behalf of the Provost whenever it needs to discuss VMS’ overall operations. It consists of the VMS Director; the Deans of the School of Engineering, School of Science and Sloan School of Management; the MIT Associate Provost; the Vice President for Research; the MIT Treasurer; the VMS Co-Founders; and, as an ex-officio member, the VMS Operations Manager.

The Executive Committee meets on a periodic basis to discuss VMS’ activities, direction and financing. It consists of the VMS Chairman, the VMS Co-Founders, the Director, the Co-Directors and the Operations Manager. VMS staff – the Director, the Co-Directors, the Operations Manager, the Office Manager and the Venture Advisors – meet every week to consider VMS’ day-to-day operations and its monthly review agenda. Once a month, the staff use one of these meeting to review all of the ventures.

The five staff levels, Director, Co-Director, Operations Manager, Office Manager and Venture Advisor are a combination of full- and part-time positions. The Director is part-time and is responsible for presenting VMS to MIT and outside bodies; assignment of mentors; assessment of new mentors; development projects; and the chairing of staff meetings, the operations committee and the monthly review sessions. The Co-Directors can act as substitutes for the Director. The Co-Director positions are part-time and filled by volunteers, appointed by the Director. Their function is to give mentors with unusual or particularly valuable skills and knowledge a more elevated position that allows them to lead ad-hoc developments at VMS. They are also tasked with managing VMS’ relationships with early-stage investors, and to direct the VMS Outreach Project.

The Operations Manager is equivalent to a Chief Operating Officer and must possess administrative skills and the ability to manage people. Core tasks include assessment of entrepreneurs applying for services; organization of contact between mentors, entrepreneurs and staff; management of venture reviews; financial management; and support of the mentor network. He is supported by a full-time, paid Office Manager who is responsible for directing day-to-day office procedures; maintaining VMS’ data and records on mentors and ventures; plus arrangements for the monthly review meetings, networking events and mentoring meetings.

66 The professional backgrounds of the current staff members are fully described in MIT VMS’s website: http://web.mit.edu/vms/about_vms.html#staff
Venture Advisors are paid staff and provide the first point of contact between entrepreneurs and VMS. They have specific duties pertaining to this, such as the introduction of applicants to VMS operations and assessment of their needs and suitability; creating reports on new ventures and presenting them at the monthly review sessions; organizing mentors for new projects while playing the role of an interim mentor until a suitable mentor is found; and supporting the technical and administrative needs of the Operations Manager and Office Manager. Venture Advisors have extensive entrepreneurial experience.

### 6. Innovation Ecosystem

VMS benefits from the surrounding MIT environment, its entrepreneurial culture, VCs concentrated in the neighborhood, and several other MIT institutions supporting innovative entrepreneurs. Other mutually
complementary programs at MIT (e.g. Deshpande Center, MIT Enterprise Forum, Entrepreneurship Center, etc) are described in a recently published report.67

Interviews with MIT’s internal stakeholders and the managers of these programs indicated that these institutions host their own mentoring programs. For example, Deshpande Center, a technology commercialization and incubation facility under the School of Engineering, provides grants to MIT’s research projects close to a commercialization stage, and offers mentoring programs to the recipients of grants. While MIT VMS does not “pick winners” but provides mentoring to any venture teams in need, Deshpande Center’s mentoring is naturally selective. The experiences that mentors bring are almost exclusively from technology start-ups, while the backgrounds of VMS’s mentors are more diverse (e.g. corporate executives).

These other mentoring programs may compete with MIT VMS when going after potential funding sources, attracting promising venture ideas, or recruiting mentors. According to an observer heavily involved in the MIT entrepreneurial community, this type of competition benefits entrepreneurs. Entrepreneurs have diverse needs for mentoring, depending on the stage of ventures’ development, field of business, or level of technological differentiation. Facing competition, programs attempt to differentiate, and entrepreneurs self-select to enroll in the programs that appear most suitable and beneficial.

## MaRS

### Quick Facts

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>10 full time + 60 part time volunteers</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>640 (100 active)</td>
</tr>
<tr>
<td>Number of staff</td>
<td>51</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>Up to USD 50,000 grant</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>Not defined / continuous</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>USD 29 million (including other programs)</td>
</tr>
<tr>
<td>Program start year</td>
<td>2005</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Staffed with full time and part-time advisors, research experts and other staff members offering full-fledged, integrated services (mentorship, well equipped incubation facilities, market intelligence and consulting, educational programs, commercialization grant, talent management).
- High level of public funding requirements for supporting services (USD 130 million from the official launch in 2005 to 2008).

Lessons Learned

- The organization’s launch by a well respected group of champions from the local business community and its ties with local universities were instrumental in its exceptional mobilization of public resources and support.
- Nascent entrepreneurs need educational programs in addition to advisory support.
- Full-time staff advisors do not develop the long-lasting informal relationships with ventures that external mentors do.
- It can be difficult to extend the reach of an entrepreneurship mentorship and advisory support program beyond a wider municipal area.
1. Business Model

Program Overview

The Advisory Services are at the core of MaRS' service offerings. They constitute the first point of entry for any client wishing to access other offered services. Ventures that join the MaRS program are assigned an group of advisors who guide them as they grow their companies and direct them to the relevant MaRS research, educational and financing programs. Advisors are a combination of internal full-time staff, part time staff, and volunteers. MaRS has 650 clients in its portfolio, of which 100 are active clients of its Advisory Services.

Advisors meet with ventures in group of three to four, including one lead advisor. Meeting frequencies are based on the needs of the company but typically occur once a month. Advisory services are offered as a part of an integrated program. For novice entrepreneurs these includes class-type seminars (Entrepreneurship 101), more intense and intimate series of lectures once a week, over 10 weeks addressing the business and entrepreneurship cycle, and one-on-one relationships with advisors. There is no program graduation timeline and companies can benefit from the program as long as they wish.

Background on MaRS

MaRS is a not-for-profit entity located in Toronto, Canada, whose mission is to “help create successful global business from Canada’s science, technology and social innovation.” It was founded in the year 2000 by a group of prominent Canadian businessmen who pooled resources to purchase an old hospital building. MaRS has a large 70,000 square meter facility at the center of Toronto, close to the country’s leading teaching hospitals and three major universities, and just minutes from Canada’s financial center and provincial government districts. The renovated building that used to be a hospital now functions as an incubation center, provides office and laboratory space, and hosts a wide range of services including advisory services through mentors.

The tenants collocating in the MaRS facility include more than 60 companies, ranging from information technology, life science and health care, advanced materials, clean tech to social innovation. Tenants include a mix of start-up and well-established R&D-intensive companies such as GE and GlaxoSmithKline, as well as a dozen retail outlets. Apart from its advisory services MaRS provides its tenant and off-site clients research, education, capital, and talent management services:

1. Research

* MaRS Market Intelligence provides its clients access to various external market research resources and services at no cost. The resources accessible include:
  - News archives and company databases (e.g. Factiva, Thomson, Datamonitor).
  - Industry and technology trend reports (e.g. Frost & Sullivan, IDC, Lux Research).
  - Surveys and forecasts (e.g. Forrester, Profound).
  - Patent databases (e.g. Innography, TotalPatents).
  - Deal flow databases (e.g. Venture Source, MedTrack).
Nurturing Innovation: Venture Acceleration Networks

Information specialists, eight staff members with industry expertise (e.g. IT, software, telecom, pharmaceuticals, healthcare, biotech, clean tech) at MaRS help clients take advantage of these research sources to study market, identify customers, focus R&D efforts.

MaRS also publishes proprietary industry reports\(^{68}\) tailored to Ontario entrepreneurs.

2. Education

MaRS Learning Programs provide educational services with online and classroom courses\(^{69}\) designed to encourage innovation, collaboration and knowledge. Examples of courses include:

- Entrepreneurship 101: teaching essential knowledge for entrepreneurs, covering starting and growing a company, finance, marketing, intellectual property, etc.
- Best practices series: Industry specialists present cases and lessons on strategy and operations of start-up firms.
- Emerging technology series: experts present new technological trends and business applications.

Some courses have 300 to 400 participants per week.

3. Capital

MaRS administers a public seed funding of approximately USD 10 million\(^{70}\) per year, financed by the Province of Ontario. Two types of specific funding instruments include:

- Project funding: up to USD 20,000\(^{71}\) for intellectual property strategy, validation of primary market research.
- Investment Accelerator Fund: up to USD 50,000\(^{72}\) for early stage technology development and commercialization.

The mandate of these seed funds is not to make a financial return but to fill the gap in funding and encourage private matching funds. Although funding commitment by private investors is not a pre-condition for these public funds, MaRS maintains relationships with angels, venture capitalists and private equity organizations in Canada, and advises the clients to raise funds from these sources.

4. Talent Management

MaRS is now piloting talent management services to help client companies find CEOs, marketing specialists, etc.

MaRS also operates the Innovation Consulting Group, codifying and conveying lessons learned and advising other entities attempting to establish a similar incubation center. Two to three MaRS staff work with interested institutional clients and provide fee-based services.\(^{73}\) Given its high visibility, delegations from China, India and other countries often visit the MaRS facility.

\(^{68}\) http://www.marsdd.com/news-insights/mars-reports/
\(^{69}\) http://www.marsdd.com/working-with-mars/education/
\(^{70}\) CAD 10 million

\(^{71}\) CAD 20,000
\(^{72}\) CAD 50,000
\(^{73}\) To the inquiry of additional interviews to mentors and beneficiaries, the interviewed VP of advisory suggested to set up a project in this scheme.
2. Financial Model

MaRS generates most of its operating revenue by renting office, lab and meeting space to companies. Facilities also absorb an important share of the organization’s costs. Substantial upfront capital investment was required to acquire and renovate the facility. In addition to the costs of facilities, MaRS incurs large costs for running its “high-touch” labor-intensive advisory, research, educational and capital programs.

Revenues

Since its foundation, MaRS has covered most of its costs through public subsidies. Two-thirds have come from the federal and provincial governments, and the rest mostly from rental income and private donations (Figure 27a). MaRS was initiated through private donations that leveraged a significant amount of public co-financing. The organization was founded by 12 businessmen who pooled funding to purchase an old hospital building. Public sources then contributed approximately USD 69 million. Major public contributors of start-up funding included:

- The Federal Government.
- The (provincial) Ontario Government.
- The Ontario Innovation Trust.
- The Toronto Biotechnology Commercialization Centre (a business incubator).
- The City of Toronto (in kind).
- The University of Toronto.

A breakdown of the MaRS 2009 revenues – totaling USD 24 million suggests that operational costs are less reliant on government subsidies than the initial capital investments, but provincial subsidies still account for 40 percent of income (b). Rental income is the main income category, accounting for slightly more than half of revenues. Most advisory, research and educational programs are provided to entrepreneurs at no cost and hence do not generate much income (Figure 27b).

Expenditures

MaRS expenditures amounted to USD 29 million in 2009. The largest share of operating expenses was covered by center and program costs, as well as occupancy costs (Figure 28). Operating costs include salaries of managers, of internal advisors, of market intelligence information specialists, market research databases, full or part-time lecturers for the educational services, in addition to educational materials, events and gatherings, maintenance of the facilities, utilities and administrative expenses. The organization has 51 professional staff – mostly highly-skilled and full-time – paid at highly competitive market rates (Table 17). Staff salaries add up to USD 4.3 million.

The “Capital” fund of USD 10 million per year, is not included in MaRS’ institutional budget. The Fund is a separate entity, managed by MaRS but delivered by ONE (Ontario Network of Excellence), a collaborative network of organizations across

74 CAD 100 million in the year 2000
75 http://www.marsdd.com/aboutmars/founders/
76 CAD 24 million
77 http://www.cra-arc.gc.ca
78 CAD 10 million
Figure 27: MaRS revenue sources

- **a. 2002 to 2009**
  - Provincial and federal governments: 66%
  - Sale of goods and services: 3%
  - Rental income: 23%
  - Donations: 8%

- **b. 2009**
  - Provincial government: 41%
  - Rental income: 55%
  - Donations: 2%

Source: [http://www.cra-arc.gc.ca](http://www.cra-arc.gc.ca)

Figure 28: MaRS operational costs in 2009

- Rental income: 55%
- Provincial government: 41%
- Donations: 2%
- Sale of goods and services: 3%
- Centre costs and program costs: 39%
- Occupancy costs: 25%
- Salaries & compensation: 15%
- Professional and consulting fees: 10%
- Office supplies and expenses: 7%
- Travel and vehicle expenses: 1%
- Interest and bank charges: 4%
- Amortization of capitalized assets: 3%

Source: [http://www.cra-arc.gc.ca](http://www.cra-arc.gc.ca)

Ontario, designed to help commercialize ideas.\(^79\)\(^80\)

3. Beneficiaries

Selection of Participants

The Advisory Services selection process is simple, entailing only a one-page application form with fairly informal follow-up discussion with a representative from MaRS. The selection process includes three steps:
Table 17: MaRS Discovery District management compensations

<table>
<thead>
<tr>
<th>Position</th>
<th>Salary (CAD$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive Officer</td>
<td>436,625</td>
</tr>
<tr>
<td>Chief Financial Officer</td>
<td>215,000</td>
</tr>
<tr>
<td>Vice President, Community Investment</td>
<td>251,720</td>
</tr>
<tr>
<td>Vice President, Real Estate</td>
<td>195,000</td>
</tr>
<tr>
<td>Vice President, Partner Programs</td>
<td>160,881</td>
</tr>
<tr>
<td>Vice President, Advisory Services</td>
<td>149,907</td>
</tr>
<tr>
<td>Managing Director, Market Readiness Program</td>
<td>182,474</td>
</tr>
<tr>
<td>Director, Collaboration Centre</td>
<td>166,600</td>
</tr>
<tr>
<td>Director, Communications</td>
<td>133,315</td>
</tr>
<tr>
<td>Director, Market Intelligence</td>
<td>115,441</td>
</tr>
<tr>
<td>Director, Operations</td>
<td>110,725</td>
</tr>
<tr>
<td>Director, Partner Programs</td>
<td>101,050</td>
</tr>
<tr>
<td>Practice Lead, Advisory Services</td>
<td>177,390</td>
</tr>
<tr>
<td>Practice Lead, Advisory Services</td>
<td>167,500</td>
</tr>
<tr>
<td>Practice Lead, Advisory Services</td>
<td>103,126</td>
</tr>
<tr>
<td>Senior Advisor, Advisory Services</td>
<td>162,740</td>
</tr>
</tbody>
</table>

Note: on December 31, 2010, 1 CAD = USD 0.9999  

- **Step 1**: The venture completes the MaRS Discovery Document. This is an online form which provides general information on the company, team, finances and market, and the kind of help required by the venture. Eligibility criteria for participating in the Advisory Services include being:
  - An early-stage science and technology or innovative social purpose venture.
  - Based and wholly owned and operational in Ontario.

- **Step 2**: During a Discovery Meeting an assigned advisor meets the team to review business plan and goals, develop a plan and offer resources to move forward. Step 2 is used as a “triage” process through which the applying firms are filtered through self-selection. During discovery meetings entrepreneur are asked to do some “homework” before the next session. Entrepreneurs who are not willing or able to complete the tasks, drop out after this first meeting.

- **Step 3**: The ventures enter an on-going engagement with MaRS, whereby it is connected with a team of advisors, provided market intelligence, guided to a learning program, etc.

### Participating Company Profile

There are approximately 640 companies in the client portfolio of MaRS Advisory Services, out of which 100 are currently active clients. Two-thirds of the companies are from the greater Toronto community, and the rest is from within three to four hours of distance. The vast majority (>90%) are not tenants in the MaRS facility.
The level of entrepreneurship experience among beneficiaries is fairly limited. Most of the entrepreneurs are from the private sector, but some are also professors, researchers or graduate students from neighboring universities. Many have recently graduated from engineering masters or doctoral program and have developed interesting applications they would like to commercialize.

Client ventures are segmented by practices (Figure 29). MaRS clients vary from teams of entrepreneurs which have not yet formally registered their companies to start-ups with several years of history.

Program Impact

The impact of MaRS is unknown because it publishes very few relevant performance metrics. A 2009 client feedback survey awarded MaRS an average score of 4 out of 5 in the metrics “understands my challenges”, “helped move my business forward” and “provided valuable advice”. In that survey, 90 percent of MaRS clients indicated they would recommend MaRS services to other entrepreneurs. The full results of the feedback survey are not published so it is also difficult to understand these metrics in context.

Anecdotal evidence from MaRS entrepreneurs suggests that at least some have found the program to be extremely beneficial at the onset of their company’s growth. MaRS provided vision support, business know-how, and strategic discussions to shape entrepreneurs’ understanding of the market and the potential of their product or service in that market space. After this initial formation stage, however, some commented that MaRS’ support was no longer sufficient to provide additional growth.

4. External Advisor Network

Scope and Delivery of Advice

The underlying philosophy of MaRS service offerings is that, advisory services are not enough for nascent entrepreneurs who also

81 MaRS – An Overview, July 2010
need educational programs. MaRS provides advisory, research and educational services. These are combined with other resources such as peer-to-peer sessions and CEO breakfasts to help early-stage entrepreneurs acquire the skills, information, connections, motivation and confidence it takes to grow a business.

MaRS entrepreneurs are assigned advisors who meets with them regularly to guide them through the MaRS programs and to growing their businesses. Advisory teams consist of one lead advisor and two to three supporting advisors who are identified and selected by the lead advisor based on the needs of the venture. Companies reported that throughout their interactions with MaRS they accumulated additional advisors, either by informally meeting them at networking sessions in MaRS and presenting/pitching their ideas, or by formally requesting advice in a specific area (such as fundraising). Some companies reported working with five to eight advisors at a time, at full or part-time basis.

Advice spans every aspect of growing an early-stage business, including business planning, sales and marketing, financing and pitch presentations, human resources, IP, financial management, etc. MaRS advisors also help companies apply for government grants, and connect them with potential investors and hires. Beneficiaries are given regular “homework” assignments by the advisor, which they are expected to complete, and follow-up meetings are often begun with discussing progress of this assignment. Advisors can either decide not to work with the beneficiary due to lack of seriousness from beneficiary or incongruence, or even recommend that the company be asked to leave MaRS if serious abuse of the system is found.

MaRS advisors typically meet with companies at least once a month. In 2009, 550 clients received on average 14 hours of advice, or about slightly more than one hour per month. However, averages are misleading since companies vary in their utilization of the program. One company reported scheduling five meetings with their advisor over a two-week period at one point. The first meetings are initiated by the lead advisor, but subsequent ones can be by the companies themselves. Meetings are based on need. Meetings between advisors and beneficiaries are driven by need rather than a structured schedule. Often can be more formal with the beneficiaries and the supporting advisors, or can be over drinks with just the lead. Meetings take place more often in the beginning of the beneficiary’s journey. There is no set program duration. Some entrepreneurs still receive support from the Advisory Services program after three years into their engagement with MaRS.

There is no mandatory reporting to MaRS from the advisors regarding the progress of the beneficiaries. Several attempts have been made to formalize it, but it is viewed as an additional layer of bureaucracy. There are informal channels of reporting, but they remain optional and are via the new intranet.

MaRS Research Services provide market intelligence on a variety of topics such as industry, competitors, market, potential investors and partners, intellectual property and best business practices. MaRS is able to deliver these services by leveraging its access

---

82 MaRS – An Overview, July 2010
to 18 business publication and database tools, covering topics such as industry research, patents, deal flows and management practice.

In 2009 and 2010, MaRS responded to 530 requests from clients. MaRS also provides these research services to the Ontario Commercialization Network, a federally-supported program.\(^3\)

Educational programs, the third component of MaRS’ non-financial services, includes a combination of classroom lectures, online learning courses, online information, conferences and working groups covering many aspects of early-stage entrepreneurship. In 2009, MaRS programmed or delivered 73 entrepreneurship educational events with a cumulative attendance of 7,800 people.\(^4\) One course, Entrepreneurship 101, has 1,800 students registered.

MaRS also organizes “angel breakfasts” where ventures can practice their pitch. They allow the companies to showcase themselves, practice their pitch, as well as expand their network, which may help with securing funding down the line. Nonetheless, they rarely lead to direct investment by the angels into the companies.

**Advisor Profiles**

The Advisory Services are delivered through a pool of mentors in the following three different categories:

- 10 full time advisors
- 8-10 part-time advisors
- 50 part-time volunteer advisors.

The volunteer advisors are often retired entrepreneurs. Some of their motives to participating in the program include personal gratification, professional networking, and further personal learning and understanding of the entrepreneurship process.

Ventures are distributed among the four different “practices” of the MaRS Advisory Services according to their sector:

- Advanced materials and engineering / Cleantech.
- Information technology, communications and entertainment.
- Life sciences and health care.
- Social innovation.

The four MaRS staff who heads these practices, the “Practice Leads”, also take the roles of advisors for some of the client companies. These four Practice Leads have a mix of backgrounds, although mostly with an engineering education and have held top positions in firms and other organizations. Two have founded their own companies. All internal and external volunteer advisors have either functional or industry expertise. Typical backgrounds of the advisors include:

- Leadership roles in established technology companies, in finance, operations, strategy.
- Performing management functions of corporate R&D.
- Professional consulting working with particular industry sectors or functional areas.
- Series of entrepreneurial experiences.

There are regular monthly practice area sessions that are three hours long where all...
advisors of a particular practice group get together and discuss current as well as future cases, or approaches, there is no formal training program for advisors. The learning is done on-the-job.

**Recruitment of Advisors**

Advisers are only recruited through referrals. The external advisors undergo a screening process, usually in the form of an interview with five to six program staff from MaRS. Their past entrepreneurship experience is evaluated and assessed.

Match-making of advisors and ventures is made on the basis of the information in the company’s application form. Because a number of the advisors are paid staff and not doing it as a side-occupation, there is a certain level of turnover of advisors at MaRS when the staff leaves MaRS for private sector jobs. This can lead to a company “changing hands” and being left without an advisor for a period of a time.

**5. Organizational Model**

MaRS Discovery District is a not-for-profit corporation. It is governed by a Board of Directors of mostly CEOs and Presidents of leading private sector representatives in the Toronto area, as well as university managers. For example, the Chair of the Board is the CEO and President of RBC, the largest bank in Canada. The Vice Chair is on the board of several companies and held the positions of Deputy Prime Minister and Minister in previous federal administrations. The CEO of MaRS has previous experience managing an early stage venture capital fund and founding several companies. The CEO and CFO head the organization, and the four Vice Presidents (VP of Business Services, VP of Talent, VP of Real Estate, and VP of Partner Programs) oversee the work of Directors and Practice Leads in specific areas (Cleantech, Social Innovation, Market Intelligence, etc). Advisors are distributed under these practices and have NDAs with MaRS, as do the beneficiaries (Figure 30).

**6. Innovation Ecosystem**

Toronto is Canada's largest city and home to a population of about 2.6 million people. Toronto ranked 12 in among the top cities to live, work and play in the Innovation Cities Top 100 Index. The greater Toronto area is Canada’s centre for ICT research and development, and that the sector is enjoying sustained growth and high employment. In McKinsey’s innovation cluster map (see Appendix), Toronto is described as a “Silent Lake”, with a moderately diverse pool of patents and moderately-low growth in patenting, only slightly above Moscow’s growth, but starting from a large number of patents. Toronto’s “Discovery District”, where MaRS is located, is a research-oriented neighborhood, with R&D activities worth USD 1.5 billion per year within a 5 minutes walk. The commercial outcome of R&D in Toronto, however, has been limited. The city’s R&D only generates $30-40 million per year in revenues according to MaRS.

In terms of business support, Toronto enjoys a wide array of programs geared to support the development of certain sector, including innovative sectors such as Biomedical Operations, Creative Industries, Information

85 http://www.toronto.ca/progress/index.htm
and Communications technology, Manufacturing, and Tourism Attractions.

Figure 30: MaRS Organizational Structure

Note: In some cases multiple positions are assigned to a single individual. NDA = non-disclosure agreement.
Larta Institute
Commercialization Assistance Program
and Global Bridge Program

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>54 Principal Advisors</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>Currently more than 350 in CAPs + more in Global Bridge</td>
</tr>
<tr>
<td>Number of staff</td>
<td>15 FT</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>CAP participants are all funded by SBIR/STTR innovation grants. Firms pay for CAP travel costs.</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>CAP = 7-10 months</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>NIH-CAP budget: $1 million</td>
</tr>
<tr>
<td>Program start year</td>
<td>First CAP initiatives started in 2004</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Tailored Industry Advisory Boards across a variety of sectors that provide market-based feedback and new contacts to companies.
- Highly structured mentoring process with market-relevant deliverables, yet tailored based on company maturity level.
- Sector-specific approach for some programs
- Formalized categories of mentors, advisors and partners.
- Mentors and expert advisors are remunerated by the program.
- Custom-built program tracking portal to provide insight into progress of each entrepreneur, updates on the mentor-company exchanges, and address entrepreneur needs in real-time.
- Post-program company tracking system, with established metrics to measure quantitative and qualitative commercialization activities and outcomes.
- Cross-border mentoring for US market entry.
Companies appear to derive significant value from the networking opportunities provided by the program.

The success of a venture advisory program is highly dependent on the breadth and depth of the program’s network. This includes both informal and formal networks that take years to develop. The programs’ alumni companies can also contribute to the growth of the network.

Company feedback sessions with Larta’s Industry Advisory Board provide a fresh perspective on the companies’ business strategies and allows them to network with representatives from leading companies. They allow companies to get the undivided attention of industry experts with relevant backgrounds. These exchanges, together with personal introductions from the company mentors, have proven much more useful to companies than venture forums and traditional modular training.

Technology-based startups need advisors with top-notch expertise, most of which is acquired through decades of experience.

A critical mass of mentoring hours is required to provide value added advice to companies.

Remunerating mentors enables programs to rapidly mobilize them for government programs running under tight time constraints, and to commit mentors to specific deliverables. However, incentives to emphasize on formal deliverables to the sponsoring agency should not take the mentor’s focus away from the participating companies’ needs.

Tracking of program participants after the program enables government agencies to provide evidence on the program’s impact and continuously fine-tune the program.
1. Business Model

Program Overview

Larta has developed and manages two main types of mentorship-based programs for technology commercialization and innovation for various government clients:

+ The Commercialization Assistance Program (CAP) in the US.
+ Global Bridge™ programs in other countries.

The objectives of both programs are to advance the market-readiness and investment profile of early-stage entrepreneurs in R&D-based ventures. The programs aim to turn concepts and early stage-IP with unclear market potential to commercial ready businesses, with validated IP and clear market potential. Support is offered in the form of customized mentoring, training seminars, industry introductions, showcase events and industry research. At the center of Larta’s approach are the connections that are established between the emerging companies and relevant people, capital and resources.

CAPs are typically offered to firms receiving support from the US Small Business Innovation Research (SBIR) program. A large number of CAP participants are firms that have been awarded a second round of SBIR funding (Phase II) covering R&D that is past the technical and commercial feasibility stage. However, some CAP programs cover SBIR’s Phase I of funding, which supports feasibility studies. Each year, more than 350 companies participate in Larta’s National Institutes of Health (NIH), US Department of Agriculture (USDA) and National Science Foundation (NSF) CAPs. Larta’s first CAP dates from 2004.

Larta has also managed several mentor-based Global Bridge programs outside of the US, including in Russia, Malaysia, New Zealand, Korea, Hong Kong, and Canada. The Global Bridge programs are similar to the CAP programs, customized to the particular country and firm profile, but an added objective typically includes connecting participating companies to the US market.

In 2007, Larta in collaboration with The U.S. Industry Coalition (USIC) and the Foundation for Russian American Economic Cooperation (FRAEC), designed a Russia Global Bridge program, an abbreviated two-month mentorship program designed for emerging companies from Russia who were trained to present at a Larta-produced event in the U.S.—the Venture Forum. This brief program was funded by the Global Initiatives for Proliferation Prevention Program (GIPP) of the U.S. Department of Energy’s National Nuclear Security Administration.

---

86 The Small Business Innovation research (SBIR) program is a set-aside program (2.5% of an agency’s extramural budget) for domestic small business concerns to engage in research and development that has the potential for commercialization. Currently, eleven Federal agencies participate in the SBIR program: the Departments of Health and Human Services (DHHS), Agriculture (USDA), Commerce (DOC), Defense (DOD), Education (DoED), Energy (DOE), Homeland Security (DHS), and Transportation (DOT); the Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA), and the National Science Foundation (NSF).

87 Other Larta CAPs include the Defense Advanced Research Project Agency.

http://grants.nih.gov/grants/funding/sbirsttr_programs.htm).
Background on Larta

Larta was founded in 1993 as a private non-profit organization in the United States. Its mission is to improve the transition of scientific and technological breakthroughs from the laboratory to the marketplace. Its activities are focused on developing and deploying commercialization programs. Larta has also organized periodic venture forums for the investment community and entrepreneurs. Larta is a networked organization, meaning that it has a small core of full time staff but leverages extensive formal and informal networks of partners who support their activities. These include entrepreneurs, universities, industry executives, experts and investors, mostly in the United States, but also in other countries. Larta’s clients mostly include government agencies in the US and abroad. Organizations that have managed other programs for the US government include Foresight Science and Technology, and Dawnbreaker, two US companies.

Operational Model of the Commercialization Assistance Program (CAP)

Larta’s CAPs have the following core elements, all of which provide participants with exposure to potential partners and investors:

- **Training** through workshops and interactive webinars.
- **One-on-one mentorship** with an assigned “Principal Advisor.”
- **Access to just-in-time industry experts.**
- **Feedback** from “Advisory Boards”, comprised of innovation experts, industry representatives and entrepreneurs.

Some CAPs, such as those offered by NIH, offer two program tracks adapted to different types of firms. The standard track applies to most of the eligible SBIR Phase II companies and spans 10 months. Some SBIR Phase II CAPs offer an accelerated track tailored to a select group of seasoned companies who have considerable business or commercialization experience. It is shorter, only 2 to 3 months long, and focuses on more targeted barriers to commercialization. The standard CAP system has been formalized over time to include several distinct phases, as shown in Figure 31.

- The **application process** for CAP varies. While in some programs it is open to all SBIR Phase II companies (e.g. USDA) in others there is a selective application process for a limited number of slots (e.g. NIH).

- Companies that are selected for the program are then **assigned to individual Principal Advisors** (i.e. mentors) by Larta staff on the basis of the Principal Advisor’s expertise and background and the ranking of companies they would prefer to mentor.

- Companies and their Principal Advisors have **preliminary remote mentoring sessions, over the phone**, to discuss the issues the company would like to work on. On the basis of these discussions and of the company application form, the Principal Advisors complete an assessment of the company. The assessment describes company needs, gaps and deficiencies, and commercialization strategy goals.

---

88 The Commercialization Training Track
89 The Accelerated Commercialization Track
Within a month of program start, companies attend **a two-day Commercialization Training Workshop**, offered by Larta. This workshop offers interactive seminars led by Larta advisors and experts from the legal, investment, and industry communities. Topics include an introduction to the CAP program, financing issues, partnering and investment, IP, branding and marketing, barriers to market entry and regulatory issues. During the workshop, companies have face-to-face meetings with their Principal Advisors for one hour, focused on identifying the challenges, objectives, and work plan.

In the following months, the companies attend **periodic remote mentoring sessions** with the Principal Advisors to work on business and strategic planning. During this period, companies are also offered **interactive training webinars**. Webinars are given by Larta staff and experts from Larta’s network. Webinars are approximately one hour long and include additional time for questions and answers. There are typically three to four webinars throughout the CAP.

Slightly after the mid-point of the program, companies attend **face-to-face Feedback Sessions** with members of Larta’s **Industry Advisory Board**. During the Feedback Sessions, companies and their Principal Advisors pitch their companies and commercialization plans to a group of experts from industry for two hours. Companies then receive critique and constructive feedback on the company’s commercialization opportunity and strategy and suggestions for new directions to consider. The Feedback Sessions also provide companies with opportunities to network with well-connected industry experts. Advisory Board members in the company Feedback Sessions are individually tailored to each company and include Industry Advisory Board members, who typically serve in Feedback Sessions of various companies, depending on their interests. The number of industry advisors in each Feedback Session varies, and can range from four to ten.

Following the Feedback Sessions, companies continue to **work with their Principal Advisors through remote teleconferences** and refine their business and strategic plans, and presentations. They may also be offered more training **webinars**.

The final CAP event is a **Close-out Web Meeting**, consisting of a 30 minute web-conference with the company, Larta staff, the Principal Advisor and the CAP program manager from the public agency sponsor. The company presents the feedback received from the Feedback Sessions, key accomplishments since then, and an 18-month action plan.

Upon completion of the program, companies provide their feedback on the program to the public agency sponsor. Larta also collects commercialization tracking information over an 18-month period in three intervals: immediately upon completion of the program, nine months after completion, and 18 months after completion.

---

90 [https://portal.larta.org/nsf/about/webinars.aspx](https://portal.larta.org/nsf/about/webinars.aspx)
Operational Model of the Global Bridge Programs

Many of Larta’s Global Bridge programs closely follow the approach of the CAPs although they typically have fewer participants and a slightly shorter duration in its pilot phase. Global Bridge programs are tailored to the objectives and budget of the sponsoring agency, and to the specific needs of the participating companies.

The objectives of an abbreviated 2007 Russia Global Bridge program were to increase the capacity of the supported institutions and businesses to penetrate the US market. This was achieved through:

✦ Initial assessments of the Russian companies to identify capacity building needs.
✦ Remote group training and short-term individualized mentoring sessions, where US-based experts and Principal Advisors worked with Russian companies on preparing their business presentation.
✦ Two webinars provided to participants to familiarize them with issues of importance to commercialization, including one focused on building a market-ready presentation tailored to specific audiences relevant to the companies.
✦ Support in networking with US partners.
✦ Participation in Larta’s Venture Forum in the US, where companies presented to investors, industry leaders and potential customers.

The program included 6 companies selected from among 34 applicant companies in a broad range of sectors including software for modeling physical and chemical processes and materials, analytical platform for in vitro diagnostics, biochips for medical diagnostics, development of bulk nanostructured materials, technologies and equipment for...
high-rate electron-beam evaporation and deposition,

**Program Assessments**

The success of the program is measured by a positive change along the following dimensions:\(^91\)

- Partnership and deal related activities
- Revenue
- Funding via equity investment, banking or other/alternative financing
- Growth in employment
- Acquisitions

Program outcome is monitored by Larta during the course of post-program tracking phase through questionnaires to former program participants. Questionnaires assess both actual changes along the above dimensions and the respondents’ perception of the impact of CAP on these changes. Tracking reports are prepared by Larta using the data collected by the questionnaires during the 18-month period. In view of the long-cycles involved in commercializing R&D, there is general agreement among program stakeholders that the program’s impact assessment could be improved by making additional resources available for longer tracking periods.

### 2. Financial Model

**Program Implementation Costs**

Larta is generally provided a flat management fee for CAPs from sponsor agencies, drawn from the agency’s administrative budget for the SBIR program. Larta’s program management costs per company allocated by SBIR CAP agencies can vary from $4,000 per company for a light-weight 6-month Phase I programs to US$13,000 for 9-month Phase II programs,\(^92\) and to up to USD 20,000 per company in other CAP programs,\(^93\) not excluding travel and other direct costs. The cost depends on the level of intensity of the program and amount of effort involved. In 2009, the case of the NIH SBIR program, this CAP program management, excluding agency staff costs, amounted to 0.6 percent of SBIR Phase II awards.\(^94\) Since these budgets, number of participants and timelines are determined by the agency, Larta’s CAP programs must be individually designed. For Global Bridge Programs, Larta’s model includes cost coverage for Larta consulting with key stakeholders on the current innovation ecosystem, aligning a CAP effort with long-term economic development/policy objectives, and outreach to secure participating entrepreneurs in a CAP. Larta Principal Advisors are paid for a fixed number of consulting hours.

**Participant Financing**

Participating CAP companies are SBIR Phase II and Phase I grant awardees. Phase I provides


\(^93\) Based on information obtained from Larta.

\(^94\) In 2009, Larta was award a contract of US$960,000 for the NIH-CAP. NIH SBIR Phase II awards amounted to US$ 158.3 million (www.USAspending.gov, http://grants.nih.gov/grants/Funding/award_data.htm)
companies with up to US$ 150,000 over six months and Phase II with up to US$1 million over two years.

Companies can enroll in the program free of charge. However, companies are responsible for travel and lodging expenses associated with the Commercialization Training Workshop and Feedback Sessions, which are eligible expenses under their SBIR awards.

3. Beneficiaries

Selection of Participants

Companies participating in CAP are selected through the rigorous evaluation process associated with SBIR. SBIR awards are made to small US businesses that demonstrate their ability to perform innovative R&D that responds to the needs of a sponsoring Federal agency and which has commercial potential. CAPs were designed for SBIR grant awardees, mostly Phase II awardees and in some agencies Phase I awardees. Hence, at minimum, CAP firms have gone through the Phase I process, which in 2009 selected 18 percent of proposals from companies. Most CAP participants are Phase II awardees and must go through another round of selection, having demonstrated the feasibility of their project in Phase I. In the case of the NIH SBIR program, only one-third of applicant companies who completed Phase I were selected for follow-up Phase II funding and were thus eligible to participate in CAP.96

The selection process of SBIR firms for participation in CAP varies with each federal agency. In some cases, there is a formal application. For example, the NIH selects proposals based on the ability of the companies to identify their key areas of support in their applications. In recent years, of the approximately 250 NIH SBIR Phase II companies, roughly 80 have participated in the CAP annually. In other federal agencies, such as NSF, enrollment is open to all willing SBIRs in the relevant Phase of the SBIR program. Yet, in other agencies, such as the USDA, enrollment in the CAP has been made mandatory for all Phase II awardees since 2009. Given that CAP is limited to a closed group of participants none of the federal agencies need to market the program extensively. The CAP is advertised to SBIR awardees through emails.

Participating Company Profile

CAPs include a broad scope of SBIR firms, in different growth stages, although most are early stage firms with limited entrepreneurial experience and no products or IP in the market. In the 2007 program, roughly one third of NIH-CAP participants had no revenue from sales of products and services during the 9-month program period. Only one-fifth had sales revenues exceeding US$ 1 million. The largest sources of total revenue of NIH-CAP participants were R&D grants and contracts, accounting for 69% of total revenue. Since no equity data is available for companies entering the CAP, information on equity raised by companies over the course of a CAP program must be used as an imperfect proxy for their growth stage (Figure 32). Data from the 2007 NIH-CAP suggests that at least a

95 http://www.ssti.org/Digest/Tables/051910t.htm
96 http://grants.nih.gov/grants/Funding/award_data.htm
quarter of companies are early stage (seed stage) companies, receiving investments from friends, family and angels, and at least a quarter have received funding from VCs or strategic investors and are hence in later stages of business and well into product development.

Figure 32: Equity raised by participating companies seeking equity during the 2007 NIH-CAP


CAP tracking data suggests that while the vast majority of companies are at a stage where they are seeking partnerships, only approximately half are seeking financing (Figure 33).

Figure 33: Share of companies in the NIH-CAP 2006-2007 seeking partnerships or financing


The 2010 NIH CAP divided participants into two tracks to take differences between early stage and later stage businesses.98

- The standard track99 is designed for emerging companies who are making their first foray into the commercial marketplace. Most SBIR Phase II companies fit in that category.

- The accelerated track100 is tailored to a select group of SBIR Phase II seasoned companies who have considerable business or commercialization experience. These companies have successfully commercialized products or services, generated revenue, established partnerships or otherwise achieved a level of market development. They may still have needs in specific areas such as a regulatory plan, an IP strategy or a term sheet for investors for continued growth.

98 http://grants.nih.gov/grants/funding/cap/more_on_cap.htm
99 The Commercialization Training Track
100 The Accelerated Commercialization Track
While CAP participants come from a variety of sectors, including life sciences, energy and agriculture, each program is typically tailored to suit particular sector needs since most program (except for NSF’s) are organized by federal agencies with specific mandates (e.g. health, agriculture). This is particularly true for the training workshops and webinars, which are oriented at sector specific topics.

The recent development of an accelerated CAP track suggests that (1) some of the support offered by a standardized CAP program, such as the training, may not be relevant for more mature companies and (2) the CAP approach can be adapted to various levels of maturity and different desired outcomes. The accelerated CAP track was proposed by Larta Institute to the sponsoring agency (in this case, NIH) and designed by the Larta to accommodate this population of companies, based on observations and the experience of managing previous CAPs.

**Program Impact**

Although there is no rigorous impact evaluation (with control groups) of the various CAPs, 18-month tracking data from the NIH-CAP suggest that the program makes positive contributions to firm progress in several areas. Moreover, in view of the relatively short tracking timespan compared to the long commercialization cycle, the tracking data is likely to underestimate CAP impact. Tracking data suggests that in the short term CAP benefits companies in partnerships and deals, raising equity and in generating revenue. Of the firms that report new partnerships and deals during the program and for the 18 months following the program, the vast majority attributes some of these partnerships to the program (Figure 34).

Partnerships and deals are defined to include contacts, meetings and negotiations with investors and partners, confidentiality disclosure agreements, initial proposals and term sheets as well as deals. Companies that raised equity during or slightly after the CAP also attribute some of this success to the program (Figure 35). Finally, roughly half of companies attribute some of their revenues during and in the 18 months following the program to CAP (Figure 36).
Figure 34: Impact of NIH-CAP of companies that made new partnerships or deals during or after the programs


Note: Data is aggregate for 2005-2006 and 2006-2007 programs.

Figure 35: Impact of NIH-CAP on companies seeking and raising equity during and after the programs.


Note: Data is aggregate for 2005-2006 and 2006-2007 programs.
Figure 36: Impact of NIH-CAP on revenues of companies that stated some revenue during or after the programs


Note: Data is aggregate for 2005-2006 and 2006-2007 programs.

4. Human Network

Scope of Advice

The CAP mentoring process has been formalized over time yet retains some level of flexibility. The work program of the Principal Advisor and the company is guided by the Company Assessment Form developed at program onset, which identifies the company’s goals, and by the Feedback Session milestone. At program onset, the company and Principal Advisor select final deliverables from among a “Management Toolkit” consisting of:

- An “18-Month Action Plan” which includes a list of strategies, tasks and milestones with a timeline.
- A quad chart to promote the company’s technology assets.

These deliverables – all of which are rather comprehensive in scope - provide the Principal Advisors and the company with a basic platform to address both general issues (e.g. fundamental approach to doing business, understanding various market segments, commercializing the technology) and focus on specific gaps identified at program onsets. These specific gaps can include topics such as funding, where the Principal Advisor provides not only advice but connections, or marketing, where the Principal Advisor advises the company on the development of a marketing plan. However, the Principal Advisor does not go into the detailed nuances of writing marketing plans or business plans and do not do the work for the companies.

101 http://grants.nih.gov/grants/funding/cap/more_on_cap.htm
they only advise, guide and assist. When very specific expertise is required the Principal Advisors can call on industry experts from Larta’s network.

A typical Principal Advisor coaching session does not have a formal structure but is typically initiated by a discussion of the key issues faced by the company. The entrepreneur and the Principal Advisor then discuss how these should be addressed, and develop a plan of action. At the next meeting the company reports the progress achieved in addressing the key issues. Box 12 documents the experience of a Russian company with a Global Bridge program modeled after the CAP.

**Delivery of Advice**

Principal Advisors meet on a regular basis with the companies. CAP offers Phase II SBIR companies 22 hours of coaching sessions with the Principal Advisor, over a nine month period. In reality, most Principal Advisors provide more than 22 hours of time to their companies. Several program stakeholders mentioned that the program could benefit from more mentoring time. Meeting regularity is determined by the Principal Advisor and the company, and is usually once or twice per month. Industry experts are called upon for advice on specific issues.

As already mentioned, coaching sessions are typically done remotely over the phone, with the exception of the face-to-face meeting during the Commercialization Training Workshop at the beginning of the program. The remote coaching approach is imposed by the fact that CAP companies are distributed across the country. Mentors are also distributed across the country.

**Box 12: Advice to a Global Bridge participant in Russia**

A biotech company spun out of a Russian research institution participated in the Larta Global Bridge program in 2007. At the time of the Global Bridge program the company already had a good portfolio of intellectual property at different stages of development and managing this intellectual property had become a central part of the management team’s work. The company was manufacturing its products and had customers.

The company’s main goal in participating in the program was to learn how to promote their products in European and US markets. The company was not interested in financial support as they had received several grants from the Russian government. But they were looking for partners who could help them sell their products in global markets.

The company was assigned a mentor from the US who interacted with them through videoconferences, by telephone, and in person at the end of the program. The company found it useful to have advisor from the US to better understand the nature of business relationships in that market. The company considered the program to be very useful. Through the program, they: (i) understood how to negotiate with foreign partners; (ii) learned how to present their products; (iii) realized that the main weakness of their company was the lack of marketing, and that they did not know how to sell their product; (iv) determined the value of the company.
**Advisor Profiles**

As already mentioned, there are three categories of external advisors:

- **Principal Advisors** who provide one-on-one mentorship to the companies throughout the entire program.
- **Industry experts** who provide just-in-time advice.
- **Advisory Boards** who the companies meet with during the Feedback Sessions.

Principal Advisors have a broad range of backgrounds but have a few traits in common. They typically have experience in small businesses and expertise in a particular sector. Most have several decades of practical experience with business or entrepreneurship. They generally have strong scientific and commercial educational qualifications. Most have earned MBAs and some have PhDs in scientific fields. Some of the Principal Advisors are serial entrepreneurs and are managing startups while also mentoring in CAPs. In sum, Principal Advisors have the profiles of individuals who would be suited for the Board of Advisors of a small technology-based business. Most Principal Advisors have been with Larta for four years or more and initiated upon their recruitment through an immersion into Larta’s methodology and approach to the CAP and deliverables. Over the years, as a result of program efficiencies, this set of orientation materials for Principal Advisors have been condensed into a short Webinar session, which is provided to new Principal Advisor candidates. Most repeat their engagements with Larta and have fine-tuned their mentoring skills over time. There is little turnover in Principal Advisors. They are generally based in the United States, although, representing the country’s elite technology base, they come from different national backgrounds. US-based CAPs and international Global Bridge programs rely on the same pool of mentors. New mentor recruitment is a continuing activity either through the direct efforts of Larta Institute as well as the reputation of the program, which draws solicitations from potential mentors throughout the year.

Principal Advisors are motivated to join the Larta network for a variety of reasons; depending on their profile. Intellectual stimulation is a common reason. The Larta programs enable them to get a privileged view of the innovation pipeline and builds up their expertise in their sectors. In some cases Principal Advisors continues a relationship with a company after a program ends. This can take the form of a paid consultancy, of a position in the company’s board of directors or of a position as an executive in the company.

Industry experts who provide just-in-time specialized advice also have a variety of backgrounds but typically work in the business services industry, either as individual consultants and lawyers, or part of a firm. They specialize in either specific industries, intellectual property, market research, marketing, investment, law or the regulatory framework. They also have at least 15 to 20 years of experience in their fields.

Advisory Board members are representatives of large companies operating in different technology-based sectors (Figure 37). They typically have positions that provide them with a broad view of the technological landscape in their sectors.
Recruitment of Advisors

Most of these are recruited through Larta’s extensive social and business network, which has been developed over 17 years. In some cases, Principal Advisors are recruited through formal mechanisms outside of Larta’s networks. In all cases, Larta selects advisors on the basis of personal recommendations from trusted members of their network.

5. Organizational Model

Each CAP is designed and overseen by senior Larta executives and implemented by a Larta Program Manager. Depending on its size and complexity, the management of a CAP may be a full time job or the Larta Program Manager may be managing several other Larta activities at the same time. The roles of the Larta Program Manager are to identify and contract Principal Advisors from within and outside the existing Larta network, match them with the
appropriate companies, and supervise their mentoring activities through monthly or quarterly calls to the companies. Program managers also have a role in fine-tuning the programs, for example by developing new methodologies for program deliverables. Finally, Larta Program Managers coordinate the delivery of the workshops and webinars, inviting various experts on topics of interest to the companies.

Larta’s senior management staff have a mix of backgrounds in the public and private sectors, but with significant experience in technology commercialization. Program managers that oversee the day-to-day management of CAPs are typically mid-level level staff with several years of experience. They are supported by more junior Program Associates.

On the sponsoring agency side (e.g. NIH, NSF, USDA), each SBIR program department appoints a CAP Program Manager. The agency’s CAP Program Manager is responsible for tendering and managing the CAP contract, and managing day-to-day interactions with the Larta Program Manager and participating companies to supervise the timeliness and quality of the program. The agency CAP Program Managers have mainly administrative functions and leave the content and delivery of the program to Larta.

Larta contracts Principal Advisors for individual CAPs. At the start of each CAP, Principal Advisors are assigned to different companies. The number of companies mentored by each Principal Advisor varies but can range from just three to more than ten for the very ambitious Principal Advisors.

Figure 38 illustrates the organizational structure and contractual relationships of a CAP program. Larta signs confidentiality agreements with each company. As highlighted in Figure 38 there are no contractual relationships or NDAs between the companies and the various groups of advisors that interact with them directly. CAPs provide companies with training and coaching on information disclosure issues. The companies’ information disclosure strategy is part of the business approach they develop throughout the program.
6. Innovation Ecosystem

Most companies participating in Larta’s programs are SBIR awardees based in the US. They are located all over the country but roughly half of all SBIR firms are concentrated in just five US states with dynamic technology clusters.\(^{102}\) This undoubtedly increases those firms’ chance of success and their ability to leverage Larta’s extended network, much of which tends to concentrate in technology-dense regions.

An important difference between participating companies in the US CAP and in the Global Bridge programs has been the need to increase coaching on processes and language related to technology commercialization for certain companies in emerging economies. In the case of the Russia Global Bridge, participating firms were judged by Principal Advisors to be as technologically competitive as SBIR firms in the US CAPs.

\(^{102}\) http://www.nsf.gov/statistics
## InnovateVMS

### Quick Facts

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>140 (of which 115 are active)</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>114 (of which 58 are active)</td>
</tr>
<tr>
<td>Number of staff</td>
<td>2 FT and a couple of PT/volunteer</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>No financial arrangement</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>Not defined</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>Not disclosed</td>
</tr>
<tr>
<td>Program start year</td>
<td>2007</td>
</tr>
</tbody>
</table>
Special Features of the Program

- The program is located in a tightly-knit local business community where “everyone knows everyone else”. This helps new businesses to find investment.
- The Innovate St Louis President has an extensive local network which provides help to InnovateVMS mentored ventures.
- The program provides mentored ventures with a group of senior business advisers with whom they can exchange ideas and discuss problems.
- The program helps mentored ventures to find customer contracts and investors - including among InnovateVMS mentors themselves.

Lessons Learned

- It can be difficult to get volunteer mentors to provide consistent help.
- Mentors are often too “arms-length” and do not become sufficiently involved to prepare new ventures for investment.
- The mentored firms need to drive and motivate the mentors.
- Program growth can be difficult without closer relationships with universities.
- It is best to handle potential conflict of interest issues, such as when a mentor becomes an investor, clearly and openly.
1. Business Model

**Background on InnovateVMS**

InnovateVMS is a mentoring service for entrepreneurs in St. Louis, Missouri, United States. It operates under the umbrella of Innovate St. Louis, founded in 2007 as part of an initiative from the St. Louis Regional Chamber and Growth Association aimed at developing the startup and entrepreneurial culture in St. Louis. Innovate St. Louis’ mission is to “…educate innovators, entrepreneurs and the public about how great ideas become viable business endeavors and to better collaborate and help build the entrepreneurial eco-system necessary to make the greater St Louis region an international hub of innovation and entrepreneurship.”

The aim of InnovateVMS is to provide free entrepreneurship education and guidance for new ventures in the St. Louis area through team-based mentoring. It also helps not-for-profit organizations develop and become more technologically savvy. MIT VMS and the Kaufman Foundation helped to create InnovateVMS as a part of their rollout of MIT VMS’ model in different parts of the US. Philadelphia and Kansas were also part of the rollout, but the St. Louis chapter is the only one that remains. The program nurtures innovative entrepreneurship through a “one stop shop” service.

In addition to InnovateVMS, Innovate St. Louis provides local entrepreneurs with two services. The first is the St Louis IT Entrepreneur Network (ITEN), which was started in 2008 in collaboration with the Information Technology Coalition, another local entrepreneurs’ association. ITEN publishes local IT industry news updates, job postings, and connections to local service providers such as lawyers, accountants, and consultants through its website. Through InnovateVMS it also gives access to free mentoring services, focused on IT entrepreneurs. The second service is St Louis SourceLink, started in 2008, which provides a platform to connect local not-for-profit organizations. It provides help with advocacy, tax services, training and technical assistance.

**Program Overview**

InnovateVMS provides its free mentoring service through the voluntary participation of experienced entrepreneurs in St. Louis. It replicates the benchmark MIT VMS model and aims to “…promote entrepreneurship education and leadership through team-based mentoring of innovative new ventures at no cost. by experienced serial entrepreneurs and business persons within the metropolitan St Louis area.” The first mentoring meeting took place in June 2007, with 5 ventures enrolling under the assistance of 18 mentors. By 2010, the number of the ventures assisted had grown to 114, of which 58 were active, and the mentor pool had expanded to 140, of which 115 were active.

The first step in the mentoring process is for a mentor to be partnered with a new venture during an initial mentor meeting. Two to three weeks later there is a two-hour follow-up session between the entrepreneur and the mentor. This follow-up session is the first in a series of mentoring sessions, each of which is meant to produce an action plan. These action plans involve “homework” for the entrepreneur, such as studying the competition, registering the venture and
setting-up an accounting system. These are meant to be small, tactical, steps. Once the venture has completed 70% of the tasks, there is another mentoring session.

2. Financial Model

Program Implementation Costs

Donations are critical to the program. InnovateVMS originally received USD 100K from AT&T, a telecommunications company, USD 100K from Amrod, a local utility company, and USD 50K from its parent organization, Innovate St Louis. Its two full-time staff are InnovateVMS’ main operational expense. There are also ad-hoc costs associated with hosting mentor meetings. All these costs are met by donations. Both individual and corporate donors, including local investors and foundations, provide support.

InnovateVMS also partners with 6 universities around St. Louis, both to raise donations and to source venture ideas and teams. One of the universities gives a significant contribution while the others give less than USD 2,000.

Regional Finance Sources

There are 14 venture capital funds in St. Louis with over USD 1 billion under management. They operate in the plant and medical sciences, advanced manufacturing, information technology, transportation and distribution, and financial services sectors. About half of this venture capital is dedicated to biotech. There are also two regional angel funds providing early-stage capital of around USD 2 million.

3. Beneficiaries

Participating Company Profile

The program has assisted 114 ventures through the help of 140 mentors over the past three-and-a-half years. Eighty-five ventures and 115 mentors are currently active. Roughly one-third of the ventures come from the six partner universities. Another third are brought in by mentors, while the remaining one third find out about the program through newspapers, presentations and associations. In most cases the ventures come to InnovateVMS at a very early stage in their development. A “venture” can sometimes just be an entrepreneur without a team, and often without a business plan. Through the mentoring process the entrepreneurs make gradual steps toward incorporation of their companies and commercialization of their ideas.

The sectors helped by InnovateVMS can vary considerably. Hi-tech is not always dominant, while manufacturing often counts for a small handful of ventures. Two such manufacturing firms assisted by the InnovateVMS program were Titanova, a machine shop that uses lasers instead of tools to cut metal parts; and Yurbuds, which makes earphones that are designed not to fall out when used by athletes. Yurbuds now has its products in over 700 stores.

Even if a venture is not in the hi-tech sector it is still likely to be innovative. For example, one venture uses UV light in children’s books to provide clues to the text. Ventures may also have a strong potential for growth – possibly in, say, the lifestyle sector – even though they may not be based on advanced
Program Impact

It is difficult to assess the impact of InnovateVMS as it has not been going for very long. However, by 2010 the ventures that it had helped had raised USD 19 million in investment and created 440 jobs. It has also produced many companies that now operate in the St. Louis area.

Table 18: results of the ventures mentored (USD millions)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventures at commercial stage</td>
<td>36%</td>
<td>60%</td>
<td>47%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Debt raised</td>
<td>USD 0.1</td>
<td>USD 0.6</td>
<td>USD 1.1</td>
<td>USD 2.2</td>
<td>USD 4.0</td>
</tr>
<tr>
<td>Equity raised</td>
<td>USD 0</td>
<td>USD 1.6</td>
<td>USD 3.3</td>
<td>USD 5.1</td>
<td>USD 10.0</td>
</tr>
<tr>
<td>Grants</td>
<td>USD 0</td>
<td>USD 0.2</td>
<td>USD 1.8</td>
<td>USD 1.1</td>
<td>USD 3.1</td>
</tr>
<tr>
<td>Donations (not-for-profit)</td>
<td>USD 0</td>
<td>USD 0.6</td>
<td>USD 0.4</td>
<td>USD 1.1</td>
<td>USD 2.1</td>
</tr>
<tr>
<td>All funds raised</td>
<td>USD 0.1</td>
<td>USD 2.9</td>
<td>USD 6.5</td>
<td>USD 9.5</td>
<td>USD 19.0</td>
</tr>
<tr>
<td>Sales</td>
<td>USD 0.1</td>
<td>USD 1.1</td>
<td>USD 4.6</td>
<td>USD 7.4</td>
<td>USD 13.2</td>
</tr>
<tr>
<td>Employees</td>
<td>50</td>
<td>86</td>
<td>314</td>
<td>440</td>
<td>-</td>
</tr>
<tr>
<td>Annual payroll</td>
<td>-</td>
<td>USD 3.4</td>
<td>USD 5.7</td>
<td>USD 5.6</td>
<td>USD 14.7</td>
</tr>
</tbody>
</table>

Figure 39 shows the breakdown of mentored ventures by sector.
4. Human Network

Advisor Profiles

The mentors are often serial entrepreneurs who want to give something back to St. Louis. They are mostly male and have expertise in fields such as finance, marketing and management. Half of them are still in business and half are retired. They collect at the monthly mentor meetings hosted by InnovateVMS. These meetings include time set aside for informal networking, but concentrate on venture updates, dissemination of information on ventures seeking mentoring, and 45-minute sessions where ventures must present their ideas and answer questions about what they intend to do. There are also presentations from speakers who might be from different industries, the development agencies or the regional chambers of commerce.

InnovateVMS is not as strict about conflicts of interest as its model, MIT VMS. Mentors are allowed to join the company they have mentored after the end of their mentoring. For example, some mentors become investors, join the board of a venture, or become the CEO. MIT VMS emphasizes education while Innovate St Louis, as its mission states, concentrates on contributing to the local entrepreneurial ecosystem.

5. Organizational Model

InnovateVMS operates under its parent organization, Innovate St. Louis, which manages the finances and other such key management tasks. InnovateVMS has two full-time employees, one of whom only works with non-profits, and one volunteer who works for two days a week.

6. Innovation Ecosystem

St Louis has a population of just over 300,000. Greater St. Louis has a population of 2.8 million, meaning it is the largest urban area in Missouri, the 15th-largest in the United States. The region has suffered from significant economic problems in recent decades, hence the motivation for more entrepreneurialism in different sectors.

There are three research universities in the region. The largest is Washington University, St Louis, a private research university considered to be one of the top 10 private research universities in the US. In 2010 the university received USD 700 million in federal research funds with some 76% from the Federal Government (about average for US research universities). Income from licensing runs at some USD 11 million annually. The university produces an insignificant amount of spin-offs.

The local economy is considered to be risk averse, without a tradition of high risk start-ups and no serial entrepreneurs. Health and bio-energy, taking advantage of Washington University in St Louis’s Federal Government research support, are the most likely areas of new business formation. However, St Louis is not among the top ten bioscience clusters in the US.

The Information Technology Coalition also regularly holds the Emerging Technology Forum. It presents the latest technological advances in the region and encourages greater networking between entrepreneurs.
Innovation Network Corporation Japan

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>3 moderators + participants peer reviewing</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>200+</td>
</tr>
<tr>
<td>Number of staff</td>
<td>10 partly dedicated to the program</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>No financial arrangement</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>Not defined</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>Not disclosed</td>
</tr>
<tr>
<td>Program start year</td>
<td>2010</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Relatively low cost structure; free service for beneficiaries, only part time staff cost.
- Intention to fill the pipeline for internal investment arm, though not realized yet.
- Parallel multiple program design dependent on designated moderators’ strengths and networks.
- Promotes peer learning among the participants, rather than distinguishing mentor/mentee.
- Focus on “intrapreneurship” e.g. leveraging financial, technological and human assets within established enterprises to promote innovative business creation through spin-offs or within existing organizational structures through partnerships that may evolve into joint ventures.

Lessons Learned

- A unit responsible for external networks, attached to an VC/PE investment fund, naturally faces internal tensions from the “mainstream” investment side which tends to pursue quick transactions, due to uncertain contribution to the pipeline, less established methodologies, longer timeframe to materialize results. Senior management’s sponsorship and endorsement is critical to sustain such efforts.
- Opportunities and bottlenecks within the location’s innovation and entrepreneurship contexts should guide the appropriate target of the operational model of publicly funded programs. The organization has responded to Japanese “highly innovative but minimally entrepreneurial” environment by attempting to identify and connect underutilized corporate resources (middle aged talent, ideas, technologies) rather than stimulating young talent at universities.
- Public programs’ appeal to potential participants, without direct financial support to beneficiaries, or indirect but perceivable benefits (e.g. subsidized consulting), might depend on government’s credibility. In Japan, the existing relatively cooperative relationships between the government and businesses have set this foundation.
1. Business Model

Program Overview
INCJ describes the objective and approach of its Open Innovation Platform as follows:

“To promote open innovation [...], it is critically important to identify new combinations of technologies and know-how, currently fragmented and distributed across the boundaries of incumbent organizations, and to turn them into new products or services in growing markets. INCJ is set out to create an environment in which such innovation processes can take place autonomously, by bringing together experts from different industries and organizations who will collaborate and generate new value-add. More specifically, INCJ plans to engage moderators who connects and cultivates a variety of talents, and will start new business development activities with the members that the coordinators will organize.”

Open Innovation Platform consists of three “forums” intended to serve different kinds of the target participants.

✦ Innovation Design Lab
- Target audience: managers from small and large companies.
- Format: monthly meetings.
- Non disclosure agreement: required.
- Participation format: exchange ideas, stimulate discussions on commercialization opportunities.

✦ KK (Co-creation, Co-learning) Forum
- Target audience: large companies and research universities.
- Format: monthly meetings.
- Non disclosure agreement: required.
- Participation format: present emerging technologies and discuss potential partnerships and large scale demonstration projects.

✦ Rome Market:
- Target audience: anyone interested
- Format: monthly meetings.
- Non disclosure agreement: not required.
- Match start-ups, angel investors, VCs and consultants through the monthly meetings.

Background on Innovation Network Corporation Japan

Innovation Network Corporation Japan (INCJ) is a publicly-owned venture capital fund in Japan. INCJ was founded in 2009, with about USD 1 billion of managed fund (80 percent of which from the government) and USD 8 billion government guarantee. To avoid “mission creep” while maintaining the focus on long term investment, the legislation sets INCJ’s duration at 15 years.

In response to Japan’s current level of development of VC/PE, INCJ has identified the three areas in which publicly-funded

---

103 Available only in Japanese: http://www.incj.co.jp/PDF/20100331-2.pdf

104 INCJ in principle is a venture fund that invest directly in businesses than a fund of funds; the only exception of the entities invested by INCJ that is not a business entity is LSIP fund; INCJ intends to invest up to USD 1 billion in LSIP, in which private pharmaceutical companies are also invited to make matching investment
investment can stimulate private sector growth:

- **Intellectual-property-driven early stage inception**

  - In INCJ’s view, domestic VC firms have developed reasonably well in Japan, but public support can still be justified through “patent pools” where discoveries in corporate or university laboratories often do not capture their full commercialization potential, due to the intertwined nature of IP in some sectors (e.g. “blocking patents” in materials/clean-tech, “stacking patent” in life science).

  - INCJ recently announced the establishment of LSIP Fund (Life-Science Intellectual Property Platform Fund), Japan’s first IP fund, to invest in intellectual properties from companies and research institutions, bundle them to increase their commercial value, then license out to stimulate creation of “blockbuster” products.

  - INCJ also attempts to cooperate with Japan branch of Intellectual Ventures\(^\text{105}\), while the exact terms are not determined yet.

- **Start-up formation and SME growth**

  - Regarding entrepreneurship, INCJ sees the Japanese situation as almost similar to Russia’s in terms of the maturity level of technology entrepreneurship.

  - INCJ’s management believes that fostering external networks and deepening ecosystem conducive to entrepreneurship should be a key focus in the long term.

- **Technology driven spin-off/carve-out\(^\text{106}\) from large enterprises and management restructuring**

  - While there are visible demands for capital and expertise in private equity investing, the private sector funds in Japan are still emerging and oftentimes not established enough for mega transactions.

  - INCJ is becoming a visible investor in technology-driven firms.

Rather than formalizing a mentorship program, INCJ contracts external “moderators” and allows them design their own formats and contents of the meetings between the moderators and participants, in which participants interact and hopefully develop new venture ideas.

### 2. Financial model

**Program Implementation Costs**

All the expenses related to the activities of Open Innovation Platform are covered by INCJ’s budget. The participants and supporters are on a voluntary basis. INCJ does not disclose its budget or cost structure.

### 3. Beneficiaries

**Participating Company Profile**

Beneficiaries for the three forums participate with very different profiles and motivations:

\(^{105}\) A specialized investment firm managing patent portfolio, which Bill Gates is heavily involved in: http://www.intellectualventures.com

\(^{106}\) A type of transaction in which a parent company sells a minority share of a subsidiary business but still controls majority shareholding
**Innovation Design Lab**
- Participants consist of about 20 middle managers from companies who have seed technologies or initial ideas but face difficulties in business building efforts within their organizations.
- They are highly motivated to share the ideas and seek new insights through interacting with experts and also others who face similar situation in their respective organizations.
- Even though this activity is titled “open innovation,” participants are expected to share ideas proprietary to their organizations, therefore they are required to obtain from their superiors’ approval, sign non-disclosure agreement, and understand and agree on the INCJ’s code of conduct.

**KK (Co-creation, Co-learning) Forum**
- About 20 companies. As opposed to Innovation Design Lab where participants are motivated individuals, participants of KK Forum tend to formally represent their companies/organizations, and are oftentimes not individuals but teams, including members on IP office and due diligence.
- The way meetings are organized is intended to be conducive to forming partnerships and joint projects among the participating companies.

**Rome Market**
- Participation is open (e.g. no requirement for NDA) and now 200 members have registered, out of which 70-80, including start-ups, angel investors, VCs, mentors and consultants show up for monthly meetings.
- In the meetings three start-up companies present their business plans, triggering “business plan clinic” sessions\(^{107}\). Motivations for participants are more like loose-end networking and deal seeking.

Direct interview arrangement to the beneficiaries could not be made, since INCJ does not disclose the names of the participating companies or individuals due to the non-disclosure arrangements.

**Program Impact**

All of the three forums are in an experimental stage, and their results are yet to be seen. No resulting partnerships or contracts have been announced. The contents of the on-going exchanges are subject to confidentiality agreement and cannot be shared by INCJ. INCJ’s management reports that the participating individuals are extremely “energized” since they tend to be restricted in fully exploring their venture ideas in their own organizations while the participation in the forums “frees them up.”

### 4. External Advisor Network

**Advisor Profiles**

There is no clear distinction, in terms of how INCJ incentivize the participants, between the beneficiaries and advisors. INCJ directly engage the three moderators, through part-time contract, who respectively recruit

\(^{107}\) The format is similar to MIT Enterprise Forum: http://www.kauffman.org/uploadedFiles/MIT_impact_full_report.pdf
participants through their own network, plan and conduct the three forums.

INCJ appointed a “moderator” for each of the three forums:

- **Innovation Design Lab**: A technology commercialization expert; CEO of Future Laboratory, a consulting firm specialized in public-private joint R&D projects, engineering talent management, project management

- **KK (Co-creation, Co-learning) Forum**: A technology marketing expert; CEO of eTEC Marketing, a think tank specialized in R&D project management and intellectual property strategy for low-carbon technologies

- **Rome Market**: A former manager of Japan’s Small Business Financing Agency; CEO of Nihon S&T, a consulting firm specialized in early stage venture creation

**Recruitment of Advisors**

The selection of the moderators took place through direct appointment by the INCJ management, not through open competitive processes but based on the track record of the candidates in establishing networks and stimulating collaborations. Typically, candidates to government positions are nominated based on the seniority of current title or the positions already held. In INCJ’s case, the three individuals did not hold well recognized positions, but the management was convinced of these particular individuals’ track record in open innovation.

**Scope, and Delivery of Advice**

By design, scope and delivery of advice is not pre-defined. In each of the three forums, the moderators designate presenters (either appointing from participants or inviting external speakers) for the meetings, and facilitate the discussions among the participants. The moderators create linkages in and out of these meetings to perform their mandate to promote collaborations among participants. According to the interviewed manager, when the moderators were hired, there were no pre-defined procedures or formats through which advice were to be delivered. Recognizing the experimental nature of the program, the management shared the vision of open innovation with the moderators, and gave them full degree of freedom in how to run the forums.

**5. Organizational Model**

INCJ’s organizational structure, including the investment arm and the unit responsible for the external network, is shown in Figure 40.

The Open Innovation Platform is run by Technology Planning Group, with 10 staff members, out of which five are professionals with investment or technology experiences and the rest are dedicated to reaching out and communications.
Staff in the investment arm of INCJ, the “mainstream” of INCJ, do not necessarily have strong buy-in of the Open Innovation Platform’s activities due to perceived weak linkage to actual projects to invest in. The Platform activities, nonetheless, is strongly supported by INCJ’s CEO who believes that building network capital is a long shot, requires public support, and requires elements of “playfulness”; the process of INCJ’s establishment at METI (Ministry of Economy, Trade and Industry) was inspired by an academic theory on physical and biological phenomena of “fluctuation,” meaning deviation from the normality as the key stimulus to innovation.

6. Innovation Ecosystem

Japan is one of the most innovative countries in the world. According to the OECD its share of the world’s “triadic patent families” – patents filed for the same technology at the European Patent Office, the United States Patent and Trademark Office and the Japan Patent Office – is, at 29%, the second highest in the world and more than the whole of the European Union put together.\textsuperscript{108} It has nearly 125 triadic patents per million people, more than any other nation.\textsuperscript{109} This level of innovation is based on Japan’s expenditure of 3.5% of its GDP on research and development, which is higher than nearly any other country.

Until recently, Japan’s approach to innovation was business- rather than network-oriented. Many of its technological advances have been through companies such as Toyota. This company-specific model relied on in-company sharing of expertise rather than the exchange


of specialized knowledge between experts and specialized institutes. Furthermore, much of Japan’s innovation focus has traditionally been on manufactures rather than software and other products. This focus and the traditional structure behind it have been unable to compete strongly in the lucrative markets for software and internet services.

There are several reasons why Japan’s innovation ecosystem has been unable to produce competitors in these fields. Importantly, links between firms or research institutes and universities are weak. Furthermore, Japan’s universities are not producing as many doctoral students in relevant fields as their OECD peers. Japan also suffers from having few foreign companies and a low number of foreign workers in its workforce. Finally, the environment for attracting early-stage capital is weak.

For the past ten years the Japanese government has been trying to change the innovation ecosystem. It created the Council for Science and Technology in 2001, which is tasked with co-coordinating efforts to meet the objective of making Japan an advanced science- and technology-orientated nation, as specified by the 1995 Basic Law on Science and Technology. Since 2001 it has produced three Basic Plans for Science and Technology, each of which has had broad targets for making Japan more innovative and entrepreneurial. The latest, which runs from 2006 to 2010, aims to develop more of a knowledge-based economy through skill development, greater mobility for researchers, bigger roles for universities and stronger competition in research funding.

---

# IMP³rove

## Quick Facts

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>501 consultants</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>2826</td>
</tr>
<tr>
<td>Number of staff</td>
<td>10 Full-time</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>Free initial assessments and initial consulting sessions.</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>No set duration</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>1 million euros</td>
</tr>
<tr>
<td>Program start year</td>
<td>2006</td>
</tr>
</tbody>
</table>

*Note: Data as of February 2011.*
Special Features of the Program

- Large-scale effort to develop the innovation management consultancy market across multiple countries.
- A standardized European innovation management assessment methodology for small and medium enterprises. The methodology covers both internal processes and external performance.
- An innovation management analysis tool to benchmark enterprises across sizes, sectors and countries.
- Training and certification for innovation management consultants.
Lessons Learned

- Demand for innovation management consulting from SMEs is weak and rolling out a program to develop this market requires substantial efforts in implementation and marketing. The most effective marketing channels are existing personal relationships.
- Demand for innovation management consultant certification is weak among SMEs, so is demand for more than basic training.
- The quality of innovation management SME consultants in Europe is generally low.
- An innovation management assessment, consulting, training and networking program is not likely to attract high-quality consultants unless there is a measure of selectivity. Consultant quality has a high impact on program success.
- An important enabler of the SME innovation consulting market could be a more pro-active match-making process between enterprises and consultants.
- For most SMEs a self-assessment innovation management tool is of limited effectiveness. Consultant guidance during this stage is required and increase chances for follow-up consulting sessions. Moreover, some SMEs are reluctant to provide company information online for confidentiality reasons.
- Creating a financially-sustainable innovation management training, certification, assessment and consulting program is a long-term endeavor.
- A standardized innovation assessment methodology can facilitate marketing of innovation management services and serve as an effective tool to assess SME strengths and weaknesses.
- Although rigorous evidence is still lacking, the standardized approach to innovation management assessments shows it has the potential to increase SME economic performance.
1. Business Model

Program Overview

IMP³rove is an innovation management consulting program initiated and funded by the European Union which has been deployed across the EU and in several other countries. At the core of the IMP³rove lies an innovation management assessment methodology which provides an indication of a company’s competitiveness and sustainable growth, and the extent to which the company’s innovation management capabilities contribute to these objectives. The program was developed and is managed by a consortium consisting of AT Kearney and Fraunhofer IAO.

The objective of IMP³rove is to increase the adoption of innovation management techniques in European enterprises, and particularly small and medium enterprises (SMEs). The program aims to achieve this by:

- Enhancing the quality of innovation management consultants.
- Enhancing transparency in the innovation management consulting market.

The IMP³rove process consists of three steps shown in Figure 41. To support this process, the role of the IMP³rove program has been to:

- Develop and administer online tools for innovation management assessments and consulting.
- Develop and administer training and certification programs for consultants.
- Develop an international network of independent innovation management consultants who are trained in the IMP³rove methodology.

The Operational Model of IMP³rove

The IMP³rove Assessment and Online Platform

At the heart of IMP³rove is the online assessment tool – the first step of the program – which requires the company to respond to questions about its performance along two themes:

- Outputs of innovation management (e.g. growth, time-to-market).
- Internal processes that foster innovation, a root/cause analysis, which provides factors behind the strengths and weaknesses of the company.
The assessments can be performed by the company on its own as a self-assessment or with the guidance of a consultant selected by the company from IMP3rove’s online network. IMP3rove has found that consultant-assisted assessments significantly improve the quality of the responses and provides the opportunity for the consultant to discuss the questions with the company. Responding to the questionnaires typically lasts three to six hours. Assessments are generally completed by the company’s CEO, or by teams of staff who together have enough knowledge of the company functions to address the different questions. In some cases, consultants hold assessment workshops in which several companies complete the questionnaires simultaneously. The IMP3rove assessment methodology and the consulting IMP3rove approach are based on the holistic view of innovation management reflected in AT Kearney’s “House of Innovation” (Figure 42). It covers innovation strategy, organization and culture, innovation life cycle processes and enabling factors. IMP3rove has taken steps to integrate its systematic approach into a European standard in the past couple of years. The development of such as standard has faced a number of challenges (Box 13).

Box 13: A European Standard for Innovation Management?

In 2008, Europe’s regional standardization body, CEN, created the Technical Committee on Innovation Management (CEN/TC 389) in which 15 countries are represented. The objective of the Technical Committee is the “standardization of tools, methods, approaches, processes, that allows companies and organizations to establish and develop their innovation management, including all kinds of innovation and all the related aspects, as well as the relations with R&D activities and with other innovation drivers.” Its focus is on SMEs. The Technical Committee includes six working groups: Collaboration and Creativity Management, Innovation Management System, Innovation Management Assessment, Design Thinking, Intellectual Property Management and Strategic Intelligence Management. Stakeholders in the Technical Committee include consultants, SMEs, technology centers, innovation centers and universities. The Technical Committee used the IMP3rove methodology as one of their starting points. It is also studying 20 other existing European systems and standards in the area of research and innovation, but none of these have a comprehensive treatment of innovation management (see the IMP3rove Case Study Appendix for a list).

While the European Commission initially promoted a mandate to develop a standard on innovation management, this initiative faced opposition by SME associations. SMEs opposed a potential standard on the basis that it could give rise to mandatory certification requirements. Some European governments also opposed the standard on the basis that they already had national standards for research and innovation. As a result, the Technical Committee will not develop standards but recommendations for good practices, and there will be no associated certification scheme. The first technical specifications will be published between 2013 and 2015.

---


The Benchmarking Report

The online assessment tool generates benchmarking reports immediately after the online questionnaires have been completed. The report benchmarks the company’s performance along the five dimensions of innovation management and performance. Benchmarking can be performed across firms in different sectors, sizes, and countries. Companies are benchmarked against the average in their selected class and against “growth champions”, who represent the top 10 percent performers in that class with the highest valuable growth. Figure 43 shows an example of the benchmarking at the most aggregate level, along the five dimensions. The remainder of the approximately 100-page assessment report delves into more details into the performance along these five aggregate dimensions.

Consultant Workshops

Following the initial assessment, a company can opt for a consultant workshop, the first step in the consulting process. The output of this workshop is a roadmap to address innovation management performance on the basis of the benchmarking report and a discussion of strengths and weaknesses, and recommendations for improvements. Consultant workshops typically last several hours. The roadmap can be prepared at a very high level or include more detailed objectives and concrete deliverables. Again, the consultant is selected entirely by the SME from the list of associated consultants which includes basic information on each consultant as well as their IMProve credentials. At the end of the workshop, the consultant uploads meeting minutes in the IMProve platform. The IMProve platform triggers a second IMProve process 12 months after the consultant workshop to assess long-term impact.
Impact Evaluations

IMP\textsuperscript{3}rove measures its impact through periodic email questionnaires sent to SMEs and consultants, which are triggered by different program milestones. Immediately after the consultant workshop SMEs and consultants are automatically requested feedback regarding the online platform and the value of IMP\textsuperscript{3}rove. SMEs also provide feedback on the consultant services. After nine months, the SME and consultants are emailed another feedback questionnaire on the business impact of IMP\textsuperscript{3}rove. These feedback questionnaires are centered around both intermediary and final impacts:

✦ Impact on internal practices and measures taken.
✦ Impact on economic performance.
✦ Impact on consultant skills, business development and client relationship.

IMP\textsuperscript{3}rove periodically conducts case studies to gain further insight on the program’s impact. In 2010 an analysis of 50 case studies was prepared by IMP\textsuperscript{3}rove.\textsuperscript{116} Each case study is structured according to a standardized model in order to more easily retrieve and compare findings:

✦ Company profile.
✦ Company’s challenge.
✦ A qualitative assessments of the IMP\textsuperscript{3}rove benchmarking results.
✦ The qualitative impact of IMP\textsuperscript{3}rove on the company.

The Development of IMP\textsuperscript{3}rove

IMP\textsuperscript{3}rove was developed and tested over a two year period, but has been in constant development until then. The program was

launched in 2006 with an assessment of SME innovation management consulting needs and assessment tools in the EU (Box 14). The study was used to understand the market and guide IMP³rove’s design. It found weak demand for innovation management consulting among SMEs and an uneven quality of services. It also found that existing innovation management self-assessment tools were largely specialized to a narrow area of innovation. IMP³rove’s aim was to cover a greater depth and scope than existing innovation management assessments.

Designing and testing IMP³rove and collecting sufficient benchmarking data for meaningful innovation performance assessments was a lengthy process (Figure 44). Pilot runs were first performed in 85 SMEs to fine-tune the methodology, followed by a field test of 1500 SMEs that went through the IMP³rove process (online assessment->report->consultant workshop) in 25 EU countries before the program was more widely disseminated. A range of stakeholders were involved in the development of the program, including consultancies, business associations and enterprise development agencies. The final stage in 2009 involved the dissemination of the program through marketing and communication activities. The latest development in the program involved a certification scheme for consultants introduced in early 2010.

Box 14: Why the EU’s innovation management consulting market is underdeveloped

In 2006, the IMP³rove program conducted a study of the innovation management market for SMEs. The assessment points to some clues to the underdeveloped of the innovation management consultancy market among European SMEs. It finds that SMEs in the EU do not know what to expect from innovation management consultancies and that they do not see benefits from the support they receive from consultancies. This translates to limited demand for innovation management consulting.

The most successful consultancies proactively invite SMEs to workshops in which they demonstrate their expertise. The study finds that most consultancies offer a narrow scope of innovation management services, not all of which are relevant to all SMEs. Moreover, most consultancies do not have a formalized structured approach to innovation management or monitoring of results and therefore have difficulty learning from their experience and improving their processes. The study finds highly varied quality among innovation consultancies. Most of their deliverables are recommendations and high-level action plans with limited follow-up or impact monitoring. These are not very useful to SMEs, who expect hands-on and ready-to-use action plans.

2. Financial Model

**Total Program Implementation Costs**

IMP3rove is mainly funded by European Union subsidies. The first four years of the program (2006-2009) were entirely funded by the European Commission at a total cost of EUR 5 million. This covered the program’s development, administration and dissemination costs by the AT Kearney consortium as well as subsidies to consulting service providers for providing assessment services and consulting workshops.

During the field test, National Coordinators were hired for recruiting and supporting SMEs. During the 2010 to 2011 period, the European Commission will provide EUR 2 million to cover 65% of the costs of the program, with the remainder mainly covered by ten organizations which are interested in adding entries into the database, as well as by AT Kearney and Fraunhofer IAO.

IMP3rove has been a relatively low cost program, even when factoring in its development costs. Assuming that program running costs were of EUR 1 million in 2010, the average costs per SME served were since 2006 were of EUR 2,132.\(^{117}\) Assuming that the 2006-2009 period represents fixed costs of building up the model and database to a critical mass, the marginal costs of the program in 2010 were approximately of EUR 417 per SME.\(^{118}\)

**Participant Financing**

During its four-year launch phase IMP3rove offered a number of financial incentives for consultants to participate in the program. Most of these incentives have been phased out as IMP3rove strives to transition to financially sustainable business model. Financial arrangements between the program, consultants and participating SMEs in the various activities of the program are described below:

- **Consultant registration, training, certification:** Consultant registration in the IMP3rove network is free of charge but initial training is required in order to register. During the first phase of the program up to 2009, all consultant trainings were free of charge. Currently,

---

\(^{117}\) EUR 6 million / 2,813 SMEs as of January 2011. Source: IMP3rove Scoreboard January 2011.

\(^{118}\) 5 months/12 months x EUR 1 million / 1000 SMEs. Based on August-December 2010 data. Source: IMP3rove Scoreboard July 2010, IMP3rove Scoreboard January 2011.
the first level IMP³rove course (IMP³rove Guide) has a fee of EUR 1,250. Fees for the three subsequent levels range from EUR 1,500 to EUR 6,800. Total training fees for all levels add up to EUR 13,150. The quality of the consultants has improved since training fees have been introduced. IMP³rove has recently launched a temporary program to offer free training to consultants who complete a predetermined number of assisted SME assessments. At the end of each training module an optional exam can be taken to obtain IMP³rove certification, at a cost varying from EUR 50 to 500.

Initial assessments: The use of the online innovation management assessment tool and the benchmarking reports are free of charge to all enterprises. During the first phase of the program IMP³rove provided consultants with financial incentives of approximately EUR 2,000 per company to encourage them to conduct initial assessments with the first 1,500 SMEs in the database. In some cases, regional innovation agencies are providing consultants with financial incentives. In Poland and Serbia, government innovation support program financed the implementation of IMP³rove in SMEs. In Serbia the aim was 150 companies.

Consulting Workshops: The consulting workshop is not subsidized by IMP³rove. Consultant fees are negotiated between the consultants and the SMEs. Many consultants provide this workshop at no cost to the SME for business development purposes. This can be an effective approach since SMEs in Europe are generally reluctant to pay for management consultant.

Follow up consulting: The costs associated with follow-up consulting taking place after the workshop are the full responsibility of the consultant and the SME client. IMP³rove does not play an active role during this stage of the program.

3. Beneficiaries

Recruitment and Selection of Participants

There are minimum requirements for SMEs to participate in the IMP³rove assessment. The program is generally open to all companies with the exception of very early stage firms. Any company with 5 to 999 employees and a minimum of two years in business are qualified to register. The minimum number of five people is linked to methodology’s requirements to separate innovation tasks within a company. The minimum of two years in business is required for benchmarking the company’s growth, which is a core component of the IMP³rove assessment.

Recruitment of SMEs has been achieved through extensive marketing activities and has been most effective through personal relationships. In view of low general demand for innovation management consulting services among SMEs, marketing is a centerpiece of the IMP³rove program. As discussed in Section 1, only a small number of SMEs see any value in strengthening their innovation management practices and the potential benefits of hiring consultants are unclear to them. To help market the program during its first phase of operation (2006-2009)

---

119 http://www.europe-innova.eu/web/guest/home/-/journal_content/56/10136/361599
IMP³rove hired 13 National Coordinators in different European countries. The team reached out to a broad set of stakeholder groups likely to have access to SMEs in Europe. These included chambers of commerce, Innovation Relay Centers (IRCs), business associations, universities, public agencies and incubators. National Coordinators also reached out to their own client base. The IMP³rove team developed information packaged and delivered presentations, workshops, speeches, articles across Europe, and identified partners who could link to IMP³rove’s website. In some countries, professional marketing agencies were used. Through this process, IMP³rove observed that to be most effective, outreach to consultants and SMES needs to be conducted by individuals who really understand and are able to carry out the IMP³rove, not just “sales people”. In general, the most effective channel to recruit SMEs consisted of the existing personal relationships of consultants and business associations.¹²⁰ Significant marketing efforts remain to be made as IMP³rove is not yet well known by SMEs and consultants in the EU.

There has been a steady growth in the number of SME assessments, even after consulting sessions subsidies were phased out. Figure 45 shows that after the extensive marketing campaign ended in 2009 the number of assessment continued to increase by almost 1000.

sectors with moderate to high levels of knowledge-intensity (such as knowledge-intensive services and ICT) but also include a small number of firms in low-tech sectors such as food and textiles (Figure 46).

Program Impact

Feedback from SMEs and consultants suggests that IMP3rove may (i) help stimulate the market for innovation management consulting and (ii) enhance the economic performance of some SMEs. To date, IMP3rove’s impact assessments are mainly based on the opinions of the SMEs and consultants. Given the lack of rigorous long term evaluations of IMP3rove’s impact at this early stage in the program these can only be treated as tentative conclusions.

Program impact on the market for innovation management consulting

Consultants report that IMP3rove has enhanced their business development efforts. The program may stimulate business development by enhancing the effectiveness of consultants. Almost 80 percent of surveyed consultants believe that the program allows them to quickly identify the strengths and weaknesses of SMEs. More than half see IMP3rove as expanding both business development and their competencies. Consultants also mostly report that IMP3rove helps them create stronger relationships with SMEs (Figure 47). And more than half of surveyed SMEs reported that they would choose an IMP3rove consultant for another assignment.

Program impact on the economic performance of SMEs

On average, SMEs find that the program had some impact on factors related to economic performance. One year after the completion of the IMP3rove assessment SMEs report the most prevalent impact to be improved staff motivation and cultural readiness for innovation, although it is difficult to tie this directly to economic performance. On financial and time-related aspects, SMEs reported on average a moderate impact of the program (Figure 48).

4. Human Network

Scope of Advice

The scope of advice provided by IMP3rove varies from targeted to holistic, as a function of their clients’ challenges. The scope of the IMP3rove assessment tool is holistic and includes innovation strategy, innovation organization and culture, innovation life cycle management and innovation enablers. IMP3rove groups firms into four categories according to the challenges they expect to tackle with the program: Skill Developers focus on developing their managerial skills or educating their staff in

---


Nurturing Innovation: Venture Acceleration Networks

Figure 46: Distribution of SMEs in the IMP³rove program.

<table>
<thead>
<tr>
<th>Industry sector</th>
<th>Size (No. of employees)</th>
<th>Firm age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge-intensive services</td>
<td>101-250</td>
<td>&gt;25 years</td>
</tr>
<tr>
<td>Textile</td>
<td>21-100</td>
<td>11-25 years</td>
</tr>
<tr>
<td>Food/ Bev</td>
<td>&lt;20</td>
<td>&lt;5 years</td>
</tr>
<tr>
<td>BioTech/ Pharma/ Chemical</td>
<td>&gt;250</td>
<td>6-10 years</td>
</tr>
<tr>
<td>ICT/ Electrical/ Optical</td>
<td></td>
<td>&lt;5 years</td>
</tr>
<tr>
<td>Mach/ Equip. (plant constr)</td>
<td></td>
<td>&lt;5 years</td>
</tr>
</tbody>
</table>

Source: IMP³rove Scoreboard, February 2011.

Figure 47: Impact of IMP³rove on long-term client relationship

“Did the IMP³rove approach support you in strengthening your client relationship?”


Note: Percentage of answers of IMP³rove consultants in 9 month post-consultation feedback on a Likert Scale of 1 to 7.
innovation management. Their challenges are often not directly related to innovation management or economic performance.

Assessors face challenges related to their innovation competences and seek to understand their strengths and weaknesses in innovation management.

Growers seek to address challenges that impact their companies’ growth, regardless of their link to innovation.

Innovators seek to grow by responding to competitive pressures to innovate.

In about 62 percent of cases concrete follow-up measures were defined during the consulting workshop. IMProve divides the types of practical measures that can be implemented by enterprises into market-oriented and internal measures:

Market-oriented measures include topics such as innovation strategies, new products and services, core competencies, entry in new market segments, and access to global markets.

Measures with internal focus include topics such as organizational change, the establishments of new functions to drive innovation management or marketing, process improvements, and strengthening of enabling factors for innovation.

Figure 49 provides a snapshot of areas addressed during consulting workshops.

Delivery of Advice

The IMProve methodology allows for the delivery of consultant advice to be customized to the client’s needs. Consultant guidance during the initial assessments, consulting workshops and follow-up sessions are delivered by the consultant at a time and place of mutual agreement with the SME. Delivery modes have included in-person guidance, telephone calls and group sessions.

Advisor Profiles

IMProve’s 501 associated consultants are based in a wide variety of countries, but 75 percent are concentrated in Western Europe (Figure 50). In Eastern Europe, Poland has the largest number, with 40 consultants. In Russia, there is one registered consultant who is mostly active in the Middle East. The distribution of IMProve’s consultant is a factor of both the program’s marketing effectiveness, highly driven by personal relationships, and the existing market for innovation management consulting.

Most consultancies associated with IMProve are small privately-owned companies with low or moderate level of experience in innovation management. Eighty-one percent of associated IMProve experts work for private consulting companies. The remainder work for a variety of public agencies, trade associations, research institutes, universities

---


126 Sic.

Figure 48: Reported impact of IMP$^{3}$rove consulting services on SME performance

<table>
<thead>
<tr>
<th>Overall Impact of Imp3rove on the SME's business</th>
<th>4,52</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualitative Impact Aspects</strong></td>
<td></td>
</tr>
<tr>
<td>Improved staff motivation and cultural...</td>
<td>4,17</td>
</tr>
<tr>
<td>Increased customer satisfaction</td>
<td>3,70</td>
</tr>
<tr>
<td><strong>Financial Impact Aspects</strong></td>
<td></td>
</tr>
<tr>
<td>Increased ROI</td>
<td>3,21</td>
</tr>
<tr>
<td>Increased revenue</td>
<td>3,13</td>
</tr>
<tr>
<td>Reduced costs</td>
<td>3,01</td>
</tr>
<tr>
<td><strong>Qualitative Impact Aspects</strong></td>
<td></td>
</tr>
<tr>
<td>Reduced time-to-market</td>
<td>3,22</td>
</tr>
<tr>
<td>Reduced time-to-profit</td>
<td>3,02</td>
</tr>
</tbody>
</table>


Note: ROI=Return on Invest, SME=Small and Medium-Sized Enterprise; Means of Likert scales (1="no impact at all" through 7="high impact"); based on 94 long term feedbacks of SMEs

Figure 49: Areas addressed during the consulting workshop

Figure 50: Location of associated IMP$^3$rove consultants by country

Source: IMP$^3$rove Scoreboard, February 2011.

Figure 51: Self-reported experience level of IMP$^3$rove consultants

and chambers of commerce.\textsuperscript{128} About half of the consultancies have fewer than 20 employees. Fewer than 10 percent had more than 100 employees. Only a minority of consultants have a high level of experience in innovation management experience (Figure 51) and more than half of the consultancies are of less than 10 years of age.\textsuperscript{129} Some IMP\textsuperscript{3}rove stakeholders have noted that the average quality of IMP\textsuperscript{3}rove consultants is low, which hampers the effectiveness and credibility of the program. A filter for consultant quality or more training requirements would help address this issue.

Consultants join IMP\textsuperscript{3}rove to develop their business and skills. Consultants with limited experience or starting a new consulting career seek to develop a new service line or gain a differentiating factor. IMP\textsuperscript{3}rove also provides an opportunity to join a network of consultants and access a multitude of new clients. About a quarter of consultants are primarily interested in gaining a better understanding of innovation management consulting.\textsuperscript{130} Of the more than 500 associated consultants, roughly 150 use IMP\textsuperscript{3}rove continuously.

### Recruitment and Selection of Advisors

IMP\textsuperscript{3}rove accepts any consultant with minimal qualifications but there are plans to transition to a more selective approach. Consultants are recruited through the extensive marketing activities described in Section 3 above. Consultants are required to have at least two years of experience working with SMEs. There is no university degree requirement. Consultants can register in the network once they have taken the basic “IMP\textsuperscript{3}rove Guide” training and there is no subscription fee. This open selection policy has affected the quality of the consultant network. Imposing a training fee has increased the quality of the consultants. In the future, there may be a transition to consultant certification requirements to participate in the IMP\textsuperscript{3}rove program.

### Advisor Training and Certification

Consultants can participate in various levels of training provided by IMP\textsuperscript{3}rove. The first level “IMP\textsuperscript{3}rove Guide” is the basic requirement for registering in the IMP\textsuperscript{3}rove network. The key features of the IMP\textsuperscript{3}rove curriculum are summarized in Table 19. Trainings are generally delivered during the course of several days. Each month, different trainings are offered across various European cities. Trainings take place in a classroom and include theoretical, interactive, case study and role playing aspects. For all trainings, participants must sign a confidentiality agreement.

Since April 2010, each training level can be followed by an optional certification. All require participation in the training course. In addition, it requires consultants to have the minimum requirements to attend a university in their home country. All but the first level require a written examination. Key certification requirements can be found in Table 19. The certification is granted by the IMP\textsuperscript{3}rove European Innovation Management Academy and is valid for two years.

There is limited demand for anything beyond basic training or for IMP\textsuperscript{3}rove certification.

---

\textsuperscript{128} Sic.
\textsuperscript{129} IMP\textsuperscript{3}rove Scoreboard, February 2011.
\textsuperscript{130} European Commission (2008) Insights on Innovation Management in Europe – Tangible Results from MP\textsuperscript{3}rove, Europe INNOVA paper No 10.
Currently, consultants have only registered in “Guide” level trainings and none has obtained certification. This could be due to the fact that certification is not required to join the IMP3rove network and that consultants do not value deeper knowledge in innovation management, or that they value a different type of knowledge. Moreover, consultants with limited qualifications may be discouraged from taking examinations. Finally, the certification scheme is still relatively new and may not yet serve as an effective branding mechanism for consultants.

Table 19: IMP3rove training and certification schemes

<table>
<thead>
<tr>
<th>IMP3rove Level</th>
<th>Main pre-requisites</th>
<th>Training</th>
<th>Certification</th>
<th>Fee (€)</th>
</tr>
</thead>
</table>
| Guide          | - 2 years of experience rendering services to SMEs  
                 - Currently involved in an innovation project  
                 - Registration of an SME interested in the IMP3rove assessment | 1.5  
                 | - Completion of the IMP3rove assessment in one SME | 1,250  
| Expert I       | - 2 years of experience rendering innovation management services to SMEs  
                 - Guide level | 2  
                 | - Written test  
                 | - Application of IMP3rove consulting approach to 3 SMEs  
                 - Case studies | 1,500  
| Expert II      | - 2 years of experience rendering innovation management services to SMEs  
                 - Expert I level | 3  
                 | - Written test  
                 | - Application of IMP3rove consulting approach to 3 SMEs  
                 - Case studies | 2,600  
| Auditor        | - 5 years of experience rendering innovation management consulting services to SMEs  
                 - Application of IMP3rove consulting approach to 6 SMEs  
                 - Expert II level | 7  
                 | - Written test  
                 | - Application of 3 certification workshops  
                 - Case study | 6,800  

Source: [https://www.improve-innovation.eu](https://www.improve-innovation.eu) as of March 2, 2011.

5. Organizational Model

In spite of the scale and reach of its network IMP3rove is administered by a relatively small team at AT Kearney (a global consulting firm) and Fraunhofer IAO (a branch of an autonomous public research institution) in Germany. This “Global Coordination Team” consists of approximately ten full-time staff (Figure 52). The staff have backgrounds in innovation management consulting in AT Kearney and backgrounds in applied innovation management research and consulting in Fraunhofer IAO. A European Commission Project Officer has oversight of
the program but it is entirely outsourced to the AT Kearney-Fraunhofer IAO consortium, initially through a four-year contract, and subsequently through a two-year contract.

The European Commission finances the program, owns the IMP³rove trademark and owns the intellectual property of the benchmarking database. The main tasks of the Global Coordination Team are to:

- Train and certify consultants.
- Develop and maintain the online assessment tool and consultant database.
- Monitor the impact of the program and adjust the model.
- Promote the program and recruit partner organizations (consultants, universities, etc.).
- Conduct innovation management studies on the basis of benchmarking results.

Figure 52: Organizational structure of IMP³rove
During the field test stage of the program (1500 SMEs) 13 “National Coordinators” were contracted to promote and disseminate the program in their countries among consultants, enterprise development agencies, business organizations, governments and financial institutions. These National Coordinators consisted of consulting firms, enterprise development agencies and universities. IMP3rove “partners” must be trained to deliver the IMP3rove methodology at the first level (“Guide”). But the program does not have any contracts with these consultants besides the confidentiality agreements signed prior to the training sessions. There are also other organizations associated with IMP3rove on a non-contractual basis. These organizations are government entities, financial institutions and intermediaries who make use of services such as technical support and training, as well as access to the benchmarking database.

SME clients of the program interact with the IMP3rove online platform and the independent consultants directly. They have no need to interface with either the Global Coordination Team. In some cases the National Coordinators are consultants themselves, so they interact with SMEs.

By 2012, when the current EU contract comes to an end, IMP3rove’s objective is to transfer the program to a new independent body, the European Innovation Management Academy, a cooperative of consultants. This new body would run IMP3rove as a sustainable business activity. IMP3rove has created a working group, mostly made up of consultants, to help design the Academy and explore financial sustainability options.

6. Innovation Ecosystem

SMEs from a wide variety of countries in and around Europe have conducted IMP3rove assessments and there is no indication of greateruptaking in either Western or Eastern Europe. Although large Western European economies such as Germany, France and the United Kingdom exhibit the largest numbers of assessments, several Eastern European countries such as Serbia and Poland are not far behind (Figure 53). In fact, IMP3rove’s market patterns appear similar in Western and Eastern Europe. IMP3rove consultants have offered similar orders of magnitudes of assessments in Western and Eastern Europe (Figure 54). Moreover, the program’s market penetration seems to be roughly equal in Western and Eastern Europe (Figure 55). Thus, the larger number of IMP3rove assessments taking place in Western Europe can be attributed to market size. In Russia, although one consulting firm has become an IMP3rove partner and another is a candidate, no enterprise has undergone a guided assessment, likely due to the program’s lack of local marketing activities. Consultants in both Russia and the EU generally agree that SMEs generally do not see a value for innovation management consulting services. Without outreach and marketing demand remains weak.

---

131 There are two types of partnerships. An elite group of users called “Club Members” who commit to using IMP3rove with a minimal number of SME, and a group of “Partners” who comprise trained consultants as well as other types of organizations associated with the program.
Figure 53: Distribution of assessments by country

Source: IMProve Scoreboard, February 2011.

Figure 54: Average number of assessments per consultant by country

Source: Computed based on data from IMProve Scoreboard, February 2011.
Figure 55: Number of IMProve assessments per 100,000 registered businesses, by country

Appendix to the IMP³rove Case Study

Relevant research and innovation standards published in European countries:¹³²

- (ES) UNE 166001:2006 – Research, Development and Innovation (R&D&i) Management: R&D&i project requirements.
- (ES) UNE 166006 EX:2006 – Research, Development and Innovation (R&D&i) Management: Technology Watch System. (Under revision, new version to be published in March 2011)
- (FR) FD X50-551:2003 – Research-sector quality - Recommendations for organising and conducting a research activity in project mode, particularly with the framework of a network.
- (FR) FD X50-901:1991 – Project management and innovation. Memorandum for the use of the actors of an innovation project.
- (FR) GA X50-552:2004 – Quality management systems - Implementation guide for ISO 9001 within research units - Specificities of the research activity and implementation examples from ISO 9001.
- (FR) XP X 50-053:1998 – Watch services - Watch services and watch system introduction services.
- (PT) NP 4458:2007 – Management of Research, Development and Innovation (RDI). Requirements for a RDI project.
- (PT) NP 4457:2007 – Management of Research, Development and Innovation (RDI). Management system requirements of RDI.
- (UK) BS 7802:1995 – Glossary of terms used in operational research.

The IC² Global Commercialization Group
DST-Lockheed Martin India Innovation Growth Program

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>Flexible global network</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>60/year receive all services and 14/year receive advanced business development support*</td>
</tr>
<tr>
<td>Number of staff</td>
<td>2 at GCG and 5 within FICCI</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>none</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>1 year</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>USD 1.4 million (FICCI and IC²)</td>
</tr>
<tr>
<td>Program start year</td>
<td>2007</td>
</tr>
</tbody>
</table>

*Based on information from the DST – Lockheed Martin India Innovation Growth Programme 2011 brochure.
Nurturing Innovation: Venture Acceleration Networks

Special Features of the Program

✦ The program focuses on formal training, proprietary methodologies and brokering, and to a lesser extent on mentoring.

✦ A standardized technology commercialization assessment methodology is used as a screening tool and facilitates the transfer of good practices across commercialization institutions.

✦ GCG programs aim to transfer commercialization capacity to partner organizations through training, mentoring, and joint delivery of programs.

✦ GCG can leverage a global network of experts through various programs.

Lessons Learned

✦ In most cases the most important factor for start-ups is not access to capital, but access to the right people (consultants, mentors, business partners).

✦ Differences in business culture create significant obstacles for foreign entrepreneurs to penetrate the US market, particularly in places with unique entrepreneurial cultures such as Austin, Texas.

✦ Technology commercialization screening needs to consider the global potential of a product at an early stage.

✦ A “tournament” approach whereby projects compete for successive phases of funding can maximize the chance of supporting the best projects while not “picking winners” at the onset.

✦ Six months of in-kind business development support may not be long enough to deal with inexperienced entrepreneurs.
1. Business Model

Program Overview

The Global Commercialization Group (GCG) is a division of the IC² Institute, of the University of Texas at Austin that supports technology commercialization and SME innovation programs worldwide. It leverages IC²’s know-how, networks, and experience to incubate high-tech ventures, accelerate high-tech regional growth, and create centers of knowledge that contribute to the growth of entrepreneurs and high-tech companies.

One of GCG’s main functions is to identify innovative technologies with commercialization potential and help to commercialize them, by training, coaching and advising innovators and by brokering deals with partner organizations, largely in the US market but also in many other countries. This case study focuses on the Lockheed Martin India Innovation Growth program, which is representative of the GCG approach. The Case Study Appendix describes the TechBA-Austin Mexican startup accelerator, another type of GCG engagement.

The India Innovation Growth program was launched in 2007 as a joint initiative of the Indian government Department of Science and Technology, Lockheed Martin Corporation (a US-based defense company), IC², the Indo-US Science and Technology Forum, and the Federation of Indian Chambers of Commerce and Industry (FICCI). FICCI is an association of more than 300,000 Indian companies of all sizes. The program takes in a new batch of technology projects from Indian teams each year, which compete for successive rounds of commercialization support from FICCI and IC² over a one-year period.

Background on the Institution

History and development of IC²

IC² was founded in 1977 at the University of Texas at Austin (UT) as an independent entity for the analysis and support of technology commercialization and technology-based venture creation. It later became part of the university’s business school.

IC² and the Austin innovation ecology are success stories that owe much to the visionary Dr. George Kozmetsky (1917-2003). Dr Kozmetsky was Dean of the College of Business Administration and the Graduate School of Business. A lifelong educator and entrepreneur, he was a co-founder and former Executive Vice President of Teledyne, Inc., and served as a mentor and champion of high technology entrepreneurs including Michael Dell of the DELL Corporation.

IC² hosts the Austin Technology Incubator (ATI) to provide strategic assistance to technology entrepreneurs and the “Master of Science in Technology Commercialization” (MSTC) degree program (now part of the McCombs School of Business) to train new entrepreneurs. To create a deeper and broader network for it to drawn on, the Institute also runs the IC² Institute Global Fellows program (50 percent of whom are abroad and 50 percent in the US), the Visiting Scholar program, and international research projects, while GCG has deployed lessons learned around the world and established networks and nurtured partners to commercialize promising technology.
ventures. Dr. Kozmetsky also founded the Capital Forum Program and brought together people who had money in the city as an angel investor network with those who needed it.

IC² founded the GCG in 2004. Since then, the GCG has worked with regional policy makers, educational institutions, and local and international investors to promote venture growth and accelerate sustainable technology-based economic development. GCG has worked in 12 countries and current projects range from the Americas to Asia and the Middle East (see annex).

“Think-do” Approach

The IC² Institute is engaged in both methodological research activities and in implementing these methodologies. Concepts for open-ended solutions are developed and discussed. The most promising are taken forward and tested in various situations. A set of best practices is then developed. These best practices become formulated in publications, coursework and methods which are disseminated globally. The results, failures, challenges, successes, and experiences inform IC²’s research and helps fine-tune and alter methods.

Operational Model

GCG’s general approach is to search for technologies that have potential for commercialization and help deploy them, mainly in the US market, but also globally. Its global strategy is to build capacity in other countries through training, mentorship and technical support to partner technology commercialization institutions. There is no “one size fits all” model for engaging partners. Each engagement with a partner institution is different and context-specific. However, it typically draws from commercialization methodologies developed by IC². One major proprietary methodology is QuickLook. Its output is a 50 to 60 page expert-generated report that assesses the commercialization potential of a technology. It can be used as a screening process for shortlisting promising technologies. It is usually performed by IC² experts.

The India Innovation Growth program can be separated in several stages (Figure 56). It starts with an application process, open to teams in public, private or academic institutions with technologies that to commercialize. Shortlisted companies participate in a short commercialization training workshop where they undergo screening interviews. After further shortlisting, remaining participants receive a QuickLook assessment and participate in more advanced entrepreneurship training. Finalist who make it through a final round of selection are offered in-kind business development support by FICCI and IC² in India, the US and worldwide, depending on the technology’s commercialization potential as well as the entrepreneurs’ interest. Internal staff and external consultants from both institutions provide brokering, mentoring and advisory support to the project teams, helping them to connect with relevant partners, customers, experts or investors.
2. Financial Model

The GCG finances its operations through the university budget and contracts with private companies, governments and donor agencies. GCG has helped to implement a number of programs funded by Lockheed Martin, including in Poland, Chile and India. Most of GCG’s program costs cover staffing (the 17 full-time employees). GCG’s offices are housed in the university so it does not pay rent.

The USD 1.4 million annual cost of the India Innovation Growth program is split between the Indian Department of Science and Technology and Lockheed Martin. The main costs include FICCI and IC² staff. Participating companies do not receive any financial awards from the program nor do they pay participation fees. They are expected to pay for their own national and international travel costs during the business development phase with FICCI and IC².

3. Beneficiaries

Selection of Participants

The selection process is done through a competitive stage gate process. In 2011, the program received 914 applications over a three-month period, out of which 60 were nominated by subject matter experts from IC² and FICCI over another three month period. The nominated projects participate in a three-day commercialization workshop. At the end of the workshop, project teams present a 10 minute pitch followed by 10 minutes feedback and a 10 minute decision debate with an expert panel of IC² and FICCI experts. The panel selects 30 companies to proceed to the next stage of the program and undergo the IC² QuickLook commercialization assessment report. Following more commercialization
training, 14 out of the 30 teams will be selected by an international panel of judges to move forward to the program’s business development assistance phase. Out of 914 initial applicants, these 14 projects represent a 2 percent selection rate.

**Participants Profiles**

The majority of the organizations which developed the awarded technologies in the India Innovation Growth program during 2007-2010 were small-to-medium scale enterprises (SMEs) but still rather early stage. Such organizations constituted 39 percent of the total awardees during the same period. This is followed by start-ups which developed 31 percent of the total awarded technologies during 2007-2010. Universities, government laboratories and pre-startups combined, represented the remaining 30 percent (Figure 57). According to IC² most projects selected for business development assistance are at a too early stage of development to be presented to investors. Rather they are in better positions to benefit from connections with new partners, consultants and mentors.

![Figure 57: Awarded projects by organization type in the 2007-2010 India Innovation Growth programs](image)

**Program Impact**

It is difficult to assess the impact of the program given the short time span since the first batch of companies and the lack of a control group or precise beneficiary survey data. According to aggregate data from a feedback survey, the 240 projects supported between 2007 and 2010, have generated USD 75 million in revenues and commercialized 130 technologies in the past 4 years. The cumulative revenue generated by the selected technology participants amounted to around USD 75 million¹³⁵ between 2007 and 2010.


¹³⁵ INR 350 crores
One example of the technologies that have been developed was the Mico ATM in 2008, which is a small ATM that can be operated remotely through mobile technology. With the help of the program, the company presented the technology to leading banks in India, which have now adopted it, and deploy the Mico ATMs in disaster-prone areas so that people can still get cash when infrastructure is damaged.

4. Human Network

Scope of Advice

The three-day workshop provided to the 60 nominated project teams offers a “business 101” on technology commercialization strategies for entrepreneurs. The workshop is taught by IC² faculty members, including from the GCG, who travel to India. They draw from their experience with the IC² Masters program at the University of Texas at Austin, as well as their own experiences as entrepreneurs. The workshop covers a wide variety of management knowledge and skills such as how to raise funding, how to take a product to market and how to make a pitch to investors. Project teams also work on their pitch and receive feedback. During the workshop, participants are introduced to IC²’s QuickLook process, its technology commercialization methodology. IC² experts prepare 50-60 page QuickLook reports for each of the 30 shortlisted project team, offering them insight on the commercialization potential of their technology.

A second training phase is offered to the 30 short-listed project teams through two weeks of workshops. These workshops are described as “mini-MBAs” and delve deeper into technology commercialization strategies, venture formation, venture finance, technology marketing, competitive technical strategies and presentation skills. They are also given by IC² faculty.

The 14 finalists receive support in the form of mentorship and brokering from IC² and FICCI staff, as well as advice from independent consultants. The scope of advice provided to the project teams encompasses a wide range of business topics, including how to approach business partners, customers, consultants and investors, as well as on understanding competition and localization strategies. The actual service package depends on the specific needs of the team.

In terms of brokering, IC² and FICCI try to connect the entrepreneurs with people all over the world. These connections might be with leading technology specialists in the US; potential customers; angel investors; large equity funds; partners to help him with regulatory approval; and government officials. Project teams receive coaching from their IC² and FICCI mentors before any meetings. Mentors attend meeting passively with the project teams and provide them with feedback afterwards.

Delivery of Advice

Mentoring and brokering is done both in person and virtually. Once the roughly 14 finalists have been selected for business development support, IC² experts meet with them in India for a couple of weeks in order to better understand their technologies and their needs. Project teams that have more potential and interest in the Indian market are
generally supported by FICCI, while those with global potential and interest are supported by IC². FICCI and IC² set up phone meetings with prospective partners and the technology teams. If there is mutual interest they then schedule a presentation. They moderate each step of the business development process. FICCI attends all the meetings with the technology teams.

Advisor Profiles

IC² draws on GCG business development experts and its graduate program faculty to train and support teams in the program. GCG staff as well as the advisors that work with the companies generally have a business development background and experience with a particular industry (Box 15). They are often entrepreneurs or were before joining the program.

Box 15: A profile of a GCG business development expert

Jim Booth has over 20 years of engineering, sales, and marketing experience within the semiconductor/IT industry. Mr. Booth developed strategic and tactical sales plans for a broad range of software companies, including Synopsis and Cadence, in targeting leaders within the PC marketplace. He spent 15 years in leadership positions with both broad based semiconductor manufacturers and startups. He has a Bachelor’s degree in engineering and an MBA from the University of Texas at Austin. Mr. Booth was attracted to IC² through his affiliation with the university and his interests in working with innovators and new technology. He has been working with the IC² team since 2005.

Besides its staff in Austin, IC² has a global informal and formal network of brokers, mentors and consultant, owing to its various international programs: the IC² Institute Global Fellows program, the Visiting Scholar program, international research projects, and GCG. The Global Fellows network is made up of 160 people across the world, including politicians, academics and people from the private sector. The network’s activities include providing entry to countries for IC² to build up programs; writing publications; meeting once a year to exchange the latest ideas and practices; conducting fee-for-service consultancy work. The incentives are clear for the fellows: visibility, access to a global network, and a flow of deals that they can work with.

FICCI has a full-time team of 30 people working on business prospecting and technology commercialization. Of these, 5 work on the India Innovation Growth Program. These people have been trained by IC² on commercialization. They are mostly staff who already worked at FICCI before the program started and do not have much industry experience. FICCI also relies on consultants to do more specialized tasks. They have worked with more than 1,500 in total. Some of the consultants obtain success fees if the company they help commercializes the technology. They hire them on a just-in-time basis. There is no fixed pool of consultants.

Recruitment of Advisors

IC² employs a dedicated business development team and has Consultants working with IC² are either recruited through informal networks or by finding them on the internet and LinkedIn.
5. Organizational Model

There are five partners in the India Innovation Growth program: IC², Lockheed Martin, FICCI, Indo-US Science & Technology Forum, and India’s Department of Science and Technology. FICCI and IC² are the two implementing partners.

The program is headed by a Program Director from the FICCI Center for Technology Commercialization. FICCI’s role in the program is to:

- Organize the application process and identify technologies in India.
- Perform the initial scan of technologies using an IC² template.
- Participate in the short listing of technologies.
- Help commercialize the technologies in India.

The GCG has 17 full time employees. Two of its employees are dedicated to the India Innovation Growth program: one program manager, and one business development manager responsible for screening, supporting and connecting entrepreneurs. In addition, GCG relies on external part-time ad-hoc consultants.

It has a Memorandum of Understanding with FICCI as well as a contract for the implementation of the program. The role of IC² is to:

- Provide initial training to FICCI staff.
- Provide training workshops to project teams.
- Prepare QuickLook technology commercialization reports.
- Help commercialize the technologies worldwide (but mainly in the US).
- Monitor the program to make sure processes are being followed;

There is no NDA requirement between the project teams, the partner institutions and the consultants. IC² advises project teams not to disclose all of their information. Project teams finalists that are selected for business development support sign an engagement contract with the program.

6. Innovation Ecosystem

Austin has a very entrepreneurial community which plays an important role in the relatively small-sized city. The culture in the city is conducive to entrepreneurialism. People are very helpful and understand the idea of making connections and nurturing networks. For example, consultants often initially give their advice for free and advice in general is often readily available. The University of Texas at Austin is also a highly-ranked university in the US, notably in the areas of science and engineering.

Austin has provided a definitive case model for research on innovative clusters. One successful ingredient was the location of major technology-based firms. The first was MCC, which offered pre-competitive research. The government had to change anti-trust legislation to make it legal, and thus possible for it to move to Austin. In 1988, when the city was selected for the semiconductor industry’s new research consortium, Sematech, both Austin and Texas were outbid
by several other contending cities and states over financial incentives. However, Sematech officials chose Austin because of the rare community effort put forth by Austin’s public and private sectors and the coordinated vision for a high-tech future that they presented. This community effort was not merely a parade prepared for the sake of securing Sematech’s interest. Rather, it was a concentrated effort on the part of regional champions to collectively promote a high-tech future for Austin. Another influential technology company, Bechtel, was also attracted to the city. With two major companies in Austin, a virtuous cycle began. IC²’s founder, George Kozmetsky, was one of the regional champions to make it happen, and IC² was his chosen tool.
Appendix to the IC² Case Study

The TechBA Austin Mexican Startup Accelerator

The objective of the TechBA-Austin program is to accelerate the growth of innovative Mexican start-ups in foreign markets, particularly the United States. It aims to achieve this by connecting them to sources of mentorship, advice, services and partners in Austin, Texas. TechBA brings representatives of Mexican startups to Austin and provides them with office space and support. Sixteen Mexican business representatives are in residence at any one time. Each company participates in the program for approximately 12 months. Over the past six years TechBA has helped 60 Mexican companies enter the US market. Tech-BA is embedded in ATI, IC²’s business incubator.

TechBA is financed by the Mexican Ministry of Economy via a university contract with the United States-Mexico Foundation for Science (FUMEC) but aims to become more self-reliable in the future. Its main program costs are staff, which includes both the TechBA manager and the IC² business development staff. The startups that take part must pay small fees which are redirected from TechBA to the Mexican Government. On top of these fees they pay for their relocation costs from Mexico to Austin.

TechBA operates two programs, one for early-stage firms and the other for more mature firms. For the latter a typical engagement cycle starts with the identification and competition-based selection of suitable startups in Mexico before bringing them to Austin. When the startups arrive in Austin they meet with TechBA business advisors who help them with research into suitable US markets. These advisors then provide connections to firms and people with more comprehensive knowledge of these markets, so that the startups might gain more insight into the possibilities of commercializing their products and services in the US. Apart from providing information on the possibilities of market entry, this support helps with the adjustment process that many Mexican entrepreneurs need to go through as they learn to adapt to the business culture in the US. The final role played by the business advisor is to connect the startups with consultants who might be able to help them with their market entry. These consultants are identified through personal networks and are not paid by TechBA. They are often willing to work for free for a short period in order to gain more information about the market, generate contacts and gain access to business opportunities. After that first period they might negotiate a contract with the given startup. The program also provides extensive assistance with housing, insurance, and access to immigration attorneys. There is also a TechBA advisory board of lawyers and other professionals which give feedback to companies.

The program for the early-stage firms starts with TechBA staff traveling through Mexico in order to select the most promising startups. These startups then spend a week in Austin learning how businesses can enter the US market, and meet with TechBA alumni. After this the startups return to Mexico for three months in order to develop a business plan that is sophisticated enough for financiers and
the US market. Finally, there are three days in Austin when the entrepreneurs receive training on making sales and pitching to investors, and receive access to a business expo which includes much of the Austin business community.

TechBA in Austin is run by two Mexicans who are primarily tasked with looking for and attracting companies to the program, but the organization relies on a diverse range of people. The five business advisors it employs are contracted from IC² and are either drawn from a particular industry or have close connections to it. They have substantial experience of the US and Mexican markets. They also have access to a network of business people in order to develop sales and marketing strategies.
## Endeavor

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>2,000+ global and local mentors</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>506 in 11 countries</td>
</tr>
<tr>
<td>Number of staff</td>
<td>166 in 11 countries</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>Varies by country. In some countries ventures pay monthly fee and surrender 1-2% of equity to Endeavor.</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>Not defined for most programs.</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>USD 14 million global expenses</td>
</tr>
<tr>
<td>Program start year</td>
<td>1998</td>
</tr>
<tr>
<td></td>
<td>USD 32,000 / company (2009)</td>
</tr>
<tr>
<td></td>
<td>Top 25 Program: 24-28 months.</td>
</tr>
</tbody>
</table>
Special Features of the Program

- A global headquarters launches independent programs in different countries through a franchise model, licensing its methodology, providing technical support, and participating in the entrepreneur selection process.
- Entrepreneurs benefit from mentoring and advisory support networks that are anchored both locally and globally.
- Highly resource and time-intensive entrepreneur identification and selection process. Multiple screening stages at the local and global levels over many months.
- Services through pro-bono consulting partners, such as Price Waterhouse Coopers and Boston Consulting Group.
- Premium global mentoring and support programs for the most promising entrepreneurs admitted in the program.
- Open to revenue-generating companies only, hence not suitable for early-stage companies.

Lessons Learned

- Access to a global network of business people and potential investors provides a strong incentive for entrepreneurs and mentors to belong and in some cases pay membership fees to Endeavor.
- Raising capital in emerging economies is more likely in local or regional markets rather than from the US or UK. Tapping US and UK Venture Capital requires building long term relationships.
- Endeavor country programs need to adapt their approach to their local context.
- It is possible to create a self-sustainable mentor network program without public subsidies, but it relies on enlisting top global business leaders and extensive communication and fundraising activities.
- Even in a medium-size country such as Mexico it is difficult to serve firms outside the city in which the program office is located. Mentor networks have a regional reach.
- There are economies of scale and learning in building mentor networks.
- Once a mentor network is assembled, it is important to keep mentors engaged or they will leave the network.
1. **Business Model**

**Program Overview**

Endeavor is a US-based non-profit organization that supports “high-impact entrepreneurship” in middle-income countries. It does so through mentor networks, advisory boards, consultant support, entrepreneurship training and entrepreneurship events. Endeavor operates through a “franchise” model where each country operation is its own independent organization and has a licensing agreement with Endeavor Global, the headquarters. Each country program has its own staff and offers its own set of semi-standardized Endeavor programs, including the VentureCorps local mentoring program, as well as its own idiosyncratic programs. Hence, there is some level of flexibility in the model. On a competitive basis, companies that are part of the various local programs can also benefit from programs administered by Endeavor Global, such as the global mentoring and consulting services from individuals and organizations based in the US and Europe. Participation in Endeavor programs is competitive. While each country program initiates and manages its own selection process, the last stage in the selection process involves a competition among candidate entrepreneurs from all Endeavor countries and an international review panel managed by Endeavor Global.

**Background on Endeavor**

Endeavor was conceptualized in 1997 as a mentor network program specialized in emerging markets. It was formally launched in Argentina and Chile in 1998. The programs then expanded to other countries, including Brazil and Uruguay (2000), Mexico (2001), South Africa (2004), Colombia and Turkey (2006), Jordan (2009), Egypt (2010) and Lebanon (2011).

The founders envisioned high-impact entrepreneurship as the key to sustained economic growth, and identified several barriers to entrepreneurs’ growth in emerging market: cost of failure, lack of role models, limited management expertise, lack of contacts or mentors, lack of trust, and limited access to smart capital. Endeavor is meant to address these barriers by identifying highly promising entrepreneurs and accelerating their growth through mentorship networks and strategic advice.

**Operational Model**

Endeavor entrepreneurs are offered a wide range of services offered at both the local and global levels. Once an entrepreneur is admitted into the program, services are accessed on an ad hoc basis. There is no clear program structure, milestones or timeline.

At the local level, entrepreneurs have access to mentorship networks, advisory boards made up of volunteer mentors, entrepreneurship workshops, networking events and promotion of the companies in the media.

Endeavor entrepreneurs also have access to a set of Endeavor “Global Entrepreneur Services”:

- **Talent Support Programs** involve MBA students from leading US and European institutions as well as executives from leading consulting firms, who guide Endeavor entrepreneurs on strategy,
operations, financing projects and provide research services through “internships” or projects of several months to one year long.

**Global Connections:** Endeavor Entrepreneurs connect to the Endeavor network through a needs-based approach to receive mentoring, strategic advice, introductions, and media exposure.

**EndeavorNET:** Launched in 2010, Endeavor’s private social network links the Endeavor community of entrepreneurs, mentors, VentureCorps, board members, and staff.

Top Endeavor entrepreneurs can also be selected for participation in two “premium” global programs:

- The **Mentor Capital Program** helps top Endeavor entrepreneurs raise capital through a hands-on boot camp cumulating in a pitch forum to top local and global investors. The program is two-months long, involves periodic meetings and calls with local and global mentors. The Endeavor country office coordinates the schedules. The program’s role is to connect entrepreneurs with real institutional investors who provide honest feedback and serve as a practice runs for future real pitches. While initially the Mentor Capital Program was focused on raising funding from the US, this proved difficult due to geographic preferences of institutional investors. The program has expanded its target to regional investors as well. Endeavor entrepreneurs in each country must receive the country office’s approval to participate in the Mentor Capital Program.

- The **Top 25 Program** provides high-touch, customized services to the highest impact Endeavor entrepreneurs, and aims to help them generate annual revenues of USD 100 million or greater. Entrepreneurs are assigned to a global mentor, a global mentor council, customized workshops, marketing and awareness support and financial guidance through tailored road shows and introductions. The program is 24 to 48 months long.

2. **Financial Model**

**Program Implementation Costs**

The required budget for each Endeavor country office varies. Each office has its own budget, including Endeavor’s Global Offices, its headquarters in the United States. Endeavor’s worldwide aggregate expenditures amounted to USD 13 million in 2009. Endeavor Global had the largest costs, worth USD 5.8 million, followed by the Brazil office with USD 1.8 million of expenses. Jordan has the smallest budget with USD 252,000 of expenses. Endeavor’s global operations imply annual expenditures of almost USD 32,000 on a per company basis. At the individual country there is a decreasing relationship between per company cost, and years since program launch and number of participating companies (Figure 58). This suggests strong economies of scale or economies of learning. Most of the program costs cover staff salaries.

136 Endeavor Impact Report 2009-2010
Program Financing

The vast majority of program income is from private donations. These include contributions from private individuals, corporate sponsors and country office board members. In Egypt, the annual contribution requirement for board members is between USD 25,000 and 50,000. Some country offices have fundraising events. In Uruguay, an annual gala dinner brings in one third of total revenues.

Some Endeavor country programs have instituted monthly or annual fees for mentors and entrepreneurs, but these constitute a small share of revenues. In Turkey, for example, they account for 10 percent of revenues. Fees vary by country. For example, in Uruguay the annual fee for Endeavor entrepreneurs is USD 4,000, and mentors are charged USD 12,000 annually.

Endeavor country programs also have equity “give-back” policies whereby participating entrepreneurs surrender one to two percent of their equity to Endeavor on either a mandatory or voluntary basis (Table 20). In some cases the equity ownership is split between the country office and Endeavor Global.

3. Beneficiaries

Selection of Participants

Entrepreneurs are selected through a competitive, multi-step process over a 12 to 18 month period. The first interview stages are conducted by Endeavor country staff and mentors (Table 21). The final selection stage is an International Review Panel via which entrepreneurs from different countries compete. There is no quota based on country of origin so it is theoretically possible that
Nurturing Innovation: Venture Acceleration Networks

Table 20: Approach to entrepreneur equity stakes in different Endeavor programs

<table>
<thead>
<tr>
<th>Country</th>
<th>Equity model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>2% voluntary commitment of equity</td>
</tr>
<tr>
<td>Brazil</td>
<td>2% mandatory commitment of equity</td>
</tr>
<tr>
<td>Chile</td>
<td>2% voluntary commitment of equity on an exit basis</td>
</tr>
<tr>
<td>Colombia</td>
<td>2% voluntary donation of equity or incremental revenues</td>
</tr>
<tr>
<td>Mexico</td>
<td>1% mandatory commitment of equity for cash-outs</td>
</tr>
<tr>
<td>South Africa</td>
<td>2% commitment of equity or profits annually</td>
</tr>
<tr>
<td>Uruguay</td>
<td>2% mandatory commitment of equity participants of premium programs. 1.5% is retained by Endeavor Uruguay and 0.5% by Endeavor Global.</td>
</tr>
</tbody>
</table>

Source: Endeavor Impact Report 2009-2010 and interviews.

Endeavor country offices find themselves without a successful candidate during some selection cycles. Between January 2009 and June 2010 there were eight International Review Panels, roughly one every two months. The International Review Panel also serves as a feedback mechanism for candidates. On average, each panel has 18 members. From among the candidates that enter the initial review stage, four percent are selected to become Endeavor Entrepreneurs. This is within the three to five percent yield rate of angel investors in the United States.\(^{137}\)

There is no sector preference. Selection criteria are focused on the company’s business prospects and the entrepreneurial team (Table 21).

Participating Company Profile

There is a total of 506 companies currently participating in Endeavor programs. The smallest and most recent program, Lebanon, just launched in 2011, has only three companies, while the largest program in the largest country, Brazil, launched in 2000, has 95. Figure 60 shows a roughly linear relationship between program age and number of companies, suggesting that programs started small but were able to gain traction.

Endeavor companies represent a wide range of sectors, but knowledge-intensive sectors such as ICT are overrepresented (Figure 59). In 2009, three-quarters of Endeavor firms invested in R&D. On average, each Endeavor firm has filed or is filing 1.6 patents.

Companies admitted to the Endeavor program are typically past their early stages of growth and are already generating income. Firms generating beyond USD 1 million are given preference (there is also generally an upper limit of USD 15 million). The income-generation requirement shields Endeavor from some risk since in most Endeavor countries there is virtually no angel investor or VC market.

\(^{137}\) MIT Entrepreneurship Center, *Venture Support Systems Project: Angel Investors*, MIT Entrepreneurship Center, 2000, p 35
Table 21: Endeavor selection process stages and corresponding number of candidates from January 2009 to June 2010

<table>
<thead>
<tr>
<th>Selection Stage</th>
<th>Number of candidates at the stage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Identification of candidates</strong> through online applications, pro-active research by Endeavor staff and recommendations from the Endeavor network. The online application process is straightforward. It includes common information that would be found in a typical business plan.</td>
<td>N.A.</td>
</tr>
<tr>
<td><strong>2. Initial screening</strong> by Endeavor staff to ensure that the candidates comply with the basic program pre-selection criteria. Pre-selection business criteria include:</td>
<td></td>
</tr>
<tr>
<td>a. A registered business</td>
<td>N.A.</td>
</tr>
<tr>
<td>b. A minimum income stream (typically &gt; USD 1 million).</td>
<td></td>
</tr>
<tr>
<td>c. Past growth and existing opportunities for major growth.</td>
<td></td>
</tr>
<tr>
<td>d. Innovation that leads to a sustainable competitive advantage.</td>
<td></td>
</tr>
<tr>
<td>e. Scalability and potential for high growth.</td>
<td></td>
</tr>
<tr>
<td><strong>3. Initial interview</strong> of one hour by Endeavor country staff to get to know the candidate, understand the business. In addition to the business viability the purpose of the interview is to gauge the entrepreneur’s energy, passion and vision, role model potential, values, ethics and capacity to benefit from the program.</td>
<td>2,653</td>
</tr>
<tr>
<td><strong>4. Second opinion interviews</strong>: five to seven mentors with relevant industry or functional expertise, conduct separate interviews to assess business strategy, growth potential, personal qualities.</td>
<td>553</td>
</tr>
<tr>
<td><strong>5. Local selection panel</strong>: 10 to 15 mentors and local board members conduct interviews.</td>
<td>242</td>
</tr>
<tr>
<td><strong>6. Final review</strong>: a managing director from another Endeavor office conduct an interview and a finance expert reviews company financials. There are four to five international panels annually.</td>
<td>N.A.</td>
</tr>
<tr>
<td><strong>7. International selection panel</strong>: An panel of international business leaders and Board members from various Endeavor offices make a final selection through a unanimous vote.</td>
<td>159</td>
</tr>
<tr>
<td><strong>Selected Endeavor companies</strong></td>
<td>70</td>
</tr>
</tbody>
</table>

**Nurturing Innovation: Venture Acceleration Networks**

**Program Impact**

As in most other mentor-based programs, there is no rigorous impact evaluation, hence it remains difficult to estimate the impact of the program. Although the program publishes a series of metrics on Endeavor companies, they are not disaggregated by the year the companies entered the programs and there are no benchmarks. The only real impact metric reveals that 82 percent of Endeavor companies state that they would not have met their mentors without Endeavor.

**4. Human Network**

**Scope of Advice**

Endeavor offers a combination of broad mentoring and targeted consulting advice through different channels:

- **Mentoring:** At the local level, mentoring provided through the Venture Corps and the Advisory Boards programs provide mostly strategic advice, but also more minute advice ranging from raising finances to human resource development, proper legal structures or international marketing plans. Mentors also act as sounding boards for entrepreneurs and connect them to relevant individuals. Inputs from Advisor Boards tend to be more detailed and technical since the Boards include a mix of individuals with different specializations. At the global level, the “premium” Top 25 Program provides broad strategic advice as well, but mentoring provided through the “premium” Mentor Capital program focuses exclusively on fundraising processes and the pitch.

- **Consulting:** The local and global consulting advice offered to Endeavor
companies involves in-depth work on selected topics. These topics can include, for example, legal expertise, technological expertise, market studies, strategic planning and financial planning.

Delivery of Advice

Local mentors typically meet entrepreneurs in person, and sometimes by phone, while meetings with global mentors are typically virtual. Venture Corps mentors meet with entrepreneurs as needed while Advisory Boards on a quarterly basis. Since the Mentor Capital Program is an accelerated program, meetings with local mentors occur every two weeks, and conference calls with global mentors every two weeks as well, all coordinated by the local country office staff. In certain countries Endeavor entrepreneurs have opportunities to receive feedback on their businesses through breakfast meetings with other member of the Endeavor network, as well as through workshops and roundtable meetings organized by mentors. In 2009, the 506 entrepreneurs in the program received on average 32 hours of advice each from Venture Corps mentors, or two-and-a-half hours per month.

Advisor Profiles

Of the more than 2,000 mentors at Endeavor, roughly half are global and half local. The number of local mentors varies by country. While some have several hundreds (300 in Brazil) others have ten times fewer (27 in Chile). There is no clear relationship between the number of mentors, city size or time since the launch of programs. Brazil and Uruguay have three-to-one mentor-to-entrepreneur ratios while Chile has the inverse ratio. The mentor-to-entrepreneur ratio appears to depend on the local context.

The profile of mentors is varied but they share several characteristics. All are senior professionals with leadership positions in the private sector, and often, but not always, they are entrepreneurs themselves. Global mentors have large personal networks and institutional knowledge of the sectors they work in. They also have experience raising capital or are investors themselves. Many Endeavor mentors are also past Endeavor entrepreneurs. Local mentors typically also need to have international experience to understand global markets.

Recruitment and Selection of Advisors

Global and local mentors are typically invited to participate in the program through personal networking of Endeavor staff but different countries use different procedures to invite them. For example, the Egypt program accepts unsolicited applications for mentors through an online application form.

5. Organizational Model

Endeavor operates using a “franchise” model. Each country office is registered as an independent non-profit organization with its own board and budget (Figure 62). Endeavor Global’s Board of Director is constituted of global business leaders. Each country office board is constituted of prominent local business leaders. In countries with large successful diasporas such as Lebanon, board members also include members of the diaspora. Each Endeavor country office has a licensing agreement with Endeavor Global whereby it receives the brand, methodology,
support staff, access to global mentors and a final screening of its entrepreneurs in the international selection panel. The role of Endeavor Global, with a staff of 32, is to provide technical support to country offices, identify and disseminate good practices among the country offices, operate the global entrepreneurs services and mentor networks programs, and open new offices. It does not support entrepreneurs in the United States.

Country program staffing requirements vary from five staff in newer programs in the Middle East, to 32 staff in mature programs with multiple offices such as Mexico. An analysis of the number of companies in relation to staff members suggests strong economies of scale and learning effects (Figure 61). As expected, Brazil and Mexico are outliers since they have multiple regional offices. The typical basic staffing structure of a small country office is as follows:

- A **Managing Director**, typically with many years of experience in senior private sector positions, sometimes with entrepreneurship and venture capital backgrounds.
- An **Entrepreneurs Services Director** who is responsible for offering entrepreneurs support services and connecting them to useful partners. This includes overseeing the mentorship program and overseeing consulting projects. This is typically a junior to mid-level professional with private sector experience.
- A **Search and Selection Coordinator** who seeks out and screens high-potential entrepreneurs, and seeks volunteers to assess and mentor the candidates. This staff member also prepares company overviews and profiles for the International Selection Panels. This is typically a junior to mid-level professional.
- A **Communications and Outreach Officer** who diffuses Endeavor’s messages to the wider public. This is typically a junior to mid-level professional.
- A **Finance and Administration Manager** who is responsible for human resources, administration and accounting needs.

**Figure 61: Number of companies per staff in each country program**

Source: authors’ calculations based on Endeavor Impact Report 2009-2010
The structure of the various country operations also shows that to be effective, mentor programs need to operate at the region level. Recently, half of the Endeavor country programs, mostly the more mature programs, have opened regional offices to serve companies outside of the capital cities. For example, Mexico has ten offices in total and Brazil has four.

6. Innovation Ecosystem

Endeavor Global has a dedicated team for its international expansion, which is composed of three directors and one executive VP. The selection of a country follows a “pull-push” approach. Endeavor selects countries that have a critical mass of entrepreneurs, have a sound enabling framework for entrepreneurship and are still developing countries. They combine country analytics and dialogue with the local business community to identify opportunities. Most of the companies are located in the largest cities of the different countries, usually the capital, where the main country office is located. In spite of their sound perceived entrepreneurial framework, Endeavor countries are relative laggards along most innovation metrics such as R&D investments, patents or entrepreneurship.

A critical step in establishing a country office is identifying a Board of Directors, typically six to eight individuals, who have the profile and resources to provide seed funding for the program. Endeavor actively scopes emerging markets for international expansion and hopes to add two to three countries per year. Endeavor’s future expansion includes pending launches in United Arab Emirates, Vietnam, Kenya, Indonesia, Philippines and Saudi Arabia.
Figure 62: Organizational structure of Endeavor

Endeavor Global Offices

- Endeavor Global Board of Directors
  - Endeavor Global Management & Staff (32)

Endeavor Country Offices (11)

- Country Board of Directors
  - Country Management & Staff

- Local consultants
- Local mentors

- Global mentors
- Global consultants & students teams

Coordination

Licensing agreement

In some cases fees and equity

Advice & research

Endeavor companies

Mentorship
U-M Tech Transfer, the Catalyst Resource Network and the Mentor-in-Residence Program, University of Michigan

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of advisors</td>
<td>20</td>
</tr>
<tr>
<td>Number of beneficiaries</td>
<td>30-50 very early stage startups</td>
</tr>
<tr>
<td>Number of staff</td>
<td>30 in total, including 5 PT mentors and 1 FT person in CRN</td>
</tr>
<tr>
<td>Financial arrangement with beneficiaries</td>
<td>Mix of licensing and sales royalties</td>
</tr>
<tr>
<td>Typical program duration</td>
<td>2-24 months, unstructured and tailored to need</td>
</tr>
<tr>
<td>Program annual budget</td>
<td>USD 6 million through internal revenues</td>
</tr>
<tr>
<td>Program start year</td>
<td>UMTT since 1980, MIRP since 2007</td>
</tr>
</tbody>
</table>
Special Features of the Program

- Concentrates on converting academic research findings – technological discoveries – into commercial products.
- Provides a “single window” through which university faculty can access all of the commercialization support services on offer.
- Has a mentor-in-residence system where mentors are tasked with finding, examining and commercializing viable technology research and inventions.
- Consultants are given the chance to become part of a given startup’s management team.
- Focuses on very early stage evaluations and in narrowing down to a pool of potentially successful companies as quickly as possible. These startups then receive extensive mentoring.

Lessons Learned

- Integrating mentoring and other entrepreneur-related services into one unit, U-M Tech Transfer, may be a good way of commercializing the university’s inventions and research, especially where there are incentives for university faculty to become entrepreneurs.
- In an academic environment a proactive approach to finding and commercializing technology through mentors-in-residence is key.
- Offering consultants with industry-specific skills the chance to join the management team of a given startup may be a good way to attract good consultants to an area.
- Mentoring is all about people, so it is important to engage people who have created or managed a startup.
- Startups should be mentored as early as possible so that they can be killed quickly if they are unlikely to succeed.
- An initial University of Michigan fund for translational research did not succeed because the reviewers were only faculty and staff from the university. Such funds must have external reviewers with business expertise.
1. Business Model

Program Overview

U-M Tech Transfer (UMTT) is the University of Michigan’s (UM) umbrella program for commercializing the research findings of its faculty. It consists of the Office of Technology Transfer (OTT) and an offshoot, OTT-North. OTT operates several sub-programs that encourage faculty staff to consider the commercialization of their discoveries, assist in the process of commercialization, introduce experienced entrepreneurs to the budding startups spun out by UM, and draw existing firms in to work with UM on the market potential of its work.

OTT works by sifting through discoveries and technology with commercial potential as quickly as possible, and then concentrating resources on the ones most likely to succeed. Rather than having a wide purview that gives attention to many potential successes, it focuses on the small handful of research findings that are likely to hit market. These findings are commercialized either by licensing the technology to an existing firm or through the creation of a startup that will carry the technology to market. Every year OTT makes over 100 patent applications, facilitates around 90 license agreements, and spins out approximately ten startups.

One of the most important sub-programs is the Catalyst Resource Network (CRN). It maintains a database of mentors, industry experts, consultants, alumni and potential startup managers who can facilitate the transition of research findings by UM faculty into marketable products. This database, or network, is on hand to provide assistance and mentoring to any project that has the potential to get to market. CRN was created because UM researchers did not have access to people in Michigan who could provide expert help in the licensing or development of startups that is needed for technology commercialization. By creating a network, it was hoped that relevant and available specialists could be brought together to support UM’s aim to bring more of its research findings to market.

A key part of CRN is the Mentor-in-Residence Program. It maintains a small handful of experienced entrepreneurs on the UM campus who assist startups spun out of UM technology to establish themselves, target the right markets and grow as quickly as possible. The mentors volunteer their time and work on a range of projects.

OTT has several staff who are specialists in the licensing and patenting of technology, but it has a specific department, the Venture Center, which contains business formation specialists who help UM startups to get going. They work alongside any mentors that are involved in a project. The Venture Center also has the Venture Accelerator, which was founded in 2011 to give more help to UM startups in their pursuit of growth. Further support for UM’s technology commercialization efforts come from the National Advisory Board, which helps to guide overall UM policy towards commercialization and Ann Arbor Spark, a regional development organization.

Background on UMTT

UMTT, established in 1980, used to provide matching (mentors, experts) on an ad-hoc basis, but formalized the mentoring service four years ago. The head of UMTT was crucial to its development. He came to the Michigan, Ann
Arbor area 13 years ago with a background in the auto industry. The most important challenge in Michigan at the time was the failure of potentially successful technology produced by the university to make it to market, as no ecosystem existed. His vision was to nurture the local community and at the same time attract world-class people. Furthermore, he wanted people to stay in Michigan and senior business people to re-invest in the community.

How was UMTT developed? First, UM looked at its core expertise, which was technology research. Recognizing that its researchers needed help to commercialize their findings, it fashioned a strategy to bolster its research-to-market efforts. Active creation of an entrepreneurial environment was deemed necessary because the state’s economy was so dependent on the troubled car-building industry. The strategy was twofold. First, UMTT was created in order to facilitate the transfer of technology from UM departments to the marketplace. Second, a regional business development agency, Ann Arbor SPARK, was created to bring firms to the area.

In 2011, OTT created the Venture Accelerator to provide even more support for startups at UM. It gives space at minimal cost to startup companies headed by faculty entrepreneurs and others in Pfizer’s former two-million-square-foot facility in Ann Arbor. It aims to speed up the commercialization of potentially profitable research discoveries. This year there were five startup firms in the program.

Operational Model

OTT starts the process of technology commercialization as soon as a researcher makes an approach with an invention. Around 300 ideas are reviewed each year and 30-50 potential startups are chosen; from there, around ten startups are launched. The chosen startups receive business advice and are helped to develop business plans. The selection process is geared towards making early-stage evaluations and in narrowing down the pool of potential firms very quickly. The best ones then have attention focused upon them.

OTT tries to ensure that researchers are aware of the options available to them in developing the commercial potential of their research. Staff are trained to assist with questions related to marketability; funding sources; commercial partners; patenting and other protection methods; startup considerations; and university policies and procedures. The OTT team provides researchers with a licensing specialist supported by internal legal assistance and, if a new business startup is being considered, a new business formation specialist as well.

The process of commercialization proceeds through several stages, some of which work simultaneously or at different times according to the needs of the particular startup. The first stage takes place when a contact is made between researchers and OTT staff, including the mentors-in-residence and experts from CRN. Here, the discovery or technology, as well as the later stages of commercialization, are discussed. A confidential “invention report” is then written, which outlines the commercial potential of the product and starts the process of transferring the given technology from laboratory to marketplace. The report is confidential and all sponsors, such as the government, industry or a foundation, are notified.

An analyst from OTT then reviews the invention report, conducts any necessary patent searches
and further assesses the product’s potential for commercialization. This review may lead to changes to the invention and recommendations may be made as to whether it should be licensed to an existing firm or be the focus for a new company. This review takes between one week and three months.

The inventor’s involvement in the licensing process is very important. It is often the inventor’s knowledge, contacts, sustained effort, and ongoing interactions with his technical counterparts in the potential licensee that closes deals and helps turn the invention into a product. Licensing is a team approach involving both OTT and the inventor. When the licensing route is chosen, the licensee continues the advancement of the technology, and makes other business investments to develop the product or service. This step may entail further development, regulatory approvals, sales and marketing, support, training, and other activities. The inventor may have an opportunity to participate in additional research and/or consulting.

OTT business formation specialists may assist in planning, creating and funding the startup once its technology has been assessed for commercial potential. If a startup has been created in order to commercialize the discovery then the mentors-in-residence, together with the CRN, may identify consultants to provide further help (Box 16).

Box 16: The path of two UM ventures

Compendia Bioscience

The first steps towards creating the Compendia Bioscience were taken when the CRN manager contacted a consultant over the potential that could be generated by findings from a life science researcher. After meetings between the consultant and the researcher, the researcher agreed with the university that it would work with the consultant. The consultant thus entered into a contract with OTT that tasked him with working on product development.

The consultant analyzed the commercial potential of the product and helped to create a business plan. Through taking part in fundraising alongside OTT he managed to generate USD 25,000 from Ann Arbor SPARK to fund further consulting. The consultant also assisted with the appointment of the management team.

GeneVivo

GeneVivo’s founder spotted a commercial opportunity and took entrepreneurial classes at Michigan’s MBA program in order to develop his idea. He subsequently won the university’s internal competition for student entrepreneurs, which made him eligible for the Ann Arbor SPARK boot camp. This initial success gave him the chance to present at the New Enterprise Forum.

At the New Enterprise Forum, the same consultant that was involved with Compendia Bioscience was operating on a pro-bono basis and became connected with the founder. The consultant then convinced Ann Arbor SPARK to support the company and used their funding to provide GeneVivo with help in developing a business plan and market research.

The technology was licensed from OTT. Once the consultant joined the startup as CEO he was reasonably successful in raising funds, which may have been due to the fact that potential customers were already lined up. However, the company encountered a scientific problem and the product was not developed as planned.
The progress of the potential commercialization initially depends on the attitude of the member of faculty. Some faculty members do not want to be distracted from research and shun the opportunity to develop a business, while others are more open, particularly if they already have commercial interests. Sometimes, the faculty member will carry on with their original research and the idea will be pursued by their post doctoral students.

For inventions that have the potential to obtain a patent, OTT works with a patent attorney and researcher to determine the likelihood of obtaining a patent. The patent attorneys also help with analysis of the potential of the invention and how it can be best exploited for commercial gain. There is then a marketing stage when OTT employees contact potential licensees. There may be several firms that express an interest and non-disclosure agreements are often signed with interested firms so that they can gain more access to the discovery.

Where more than one firm are interested in commercializing the invention, OTT will identify the most appropriate partner. The choice depends on several factors: 1) ability to commercialize; 2) ability to obtain or provide funding to support the enterprise; 3) likelihood of using its other assets during product commercialization; and 4) the provision of technical and management personnel. Reaching a final agreement also depends on the extent of any existing relationship; the willingness of the researchers to work with the licensee; and the licensee’s satisfaction with the license terms imposed by OTT.

The main role of CRN is to connect UM’s budding entrepreneurs to consultants and experts with the aim of eventually making them part of the management of a startup. There are full-time mentors, as well as part-time mentors who are contracted on demand. OTT uses the depth of experience of the mentors-in-residence to improve its ability to spot early-stage commercialization opportunities and to expand UM’s new business ventures. The mentors also help to expand CRN’s connections with entrepreneurs, consultants and potential managers. Having on-site mentors is necessary because staff in publicly funded universities have less freedom to start companies than their peers in privately funded universities so need the regular attentions of pro-active mentors.

2. Financial Model

Funding Sources

In principle, UMTT is funded from the university’s budget, but OTT generates a lot of its cash flow through revenues from the businesses it supports and by tapping into state and national funds. It also owns all of the inventions it deals with and thus the intellectual property too. In total, through a mixture of startup-generated revenue, and a fund for mentoring, marketing and office space it generates a total of USD 6 million in revenue. UM is effective at attracting state and regional funds, and leverages them internally and externally through matching funds. It is among the top four universities in the United States for receiving research grants and was one of nine universities to recently receive a grant from the Wallace A. Coulter Foundation, which provides USD 580,000 each year for a period of five years. Each university that received a grant from the Wallace A. Coulter Foundation established a committee of stakeholders to oversee the commercialization of research findings. The stakeholders include the
Biomedical Engineering Department Chair and representatives from the medical school, OTT, and the business school as well as entrepreneurs and local venture capitalists.

UMTT has also created a Gap Fund. "Gap funding" is a term applied to a pool of resources within the university for funding the early commercialization activities of technologies with strong market potential. Gap Funding provides commercial validation for technologies or projects beyond the point where traditional research funding is available or appropriate. It is available to projects based on UM technologies which are under active management by the Venture Center. Dozens of successful companies have been launched from UM based on technology that was commercialized with the help of gap funding.

Program Costs

The experts that CRN draws on are crucial to the work of OTT, but are remunerated in a variety of ways. Mentors and consultants are meant to have “skin in the game”, meaning that their interest should be in more than just a short-term assignment. Mentors are unpaid, but around 50 percent of them eventually work for the company they have mentored. They thus have long-term financial incentives to fully engage with the UM startups. Some of the best CEOs for the startups have been found this way.

Consultants are paid, but not during the first few stages of their work. During the initial steps of consultation they are not allowed to receive any money from the companies they are advising. The initial contact is allowed to evolve through the consultant representing the startups to investors and searching for management expertise, into a formal arrangement that involves the charging of fees. After a while, OTT may pay between USD 10,000 and USD 20,000 for a consultant to write a business plan, help with marketing or generally assist the startup. These fees are paid out of state funds channeled through UMTT. Full-time OTT employees such as Senior Business Formation Specialists cannot invest in any startups they work with as doing so is regarded as a conflict of interest.

Participant Financing

Startups must pay for the services they receive, although the amount they pay greatly depends on their type and stage of development. For example, OTT receives compensation through the licensing of a product if that route is chosen for commercialization, while more mature firms generate royalties for the university. However, for the very youngest startups there is only a small licensing fee and royalties can be deferred for between five and ten years.

3. Beneficiaries

Selection of Participants

The identification of potential innovations is the first step in the selection process. Researchers and inventors are then encouraged to write reports about the work that they are doing and to make a business case for their product. The reports are then assessed by a panel who work to identify the business prospects for the invention. The evaluation process, which may lead to a broadening or refinement of the discovery, guides strategy on whether the potential product will be licensed to an existing company or used to create a startup. The evaluation stage takes between one week and three months.
Nurturing Innovation: Venture Acceleration Networks

Participating Company Profile

The main purpose of OTT is to create a flow of “venture quality” deals. A considerable number of inventions and technologies are licensed out to established companies, but about 10 startups per year are created and mentored. They are often from the life sciences sector but clean technology inventions are also becoming more common.

Program Impact

Despite the challenging economic climate, OTT continues to demonstrate progress. During the 2009/2010 fiscal year it received 290 new inventions, entered into 97 agreements and produced 10 startups, thus matching its record in 2008/2009. Since 2001 OTT has helped to launch 93 new startup ventures. Table 22 shows OTT’s performance between 2004 and 2010.

Many inventions are created and patents issued, but only a small number of them are commercialized by OTT. This may be related to the fact that there is only a small pool of capable managers in the region. The lack of local venture capital may also explain why more startups are not created. About 25 percent of all startups leave the area after they graduate. OTT would have to allow more to do so if it wanted to enlarge the startup pipeline.

4. Human Network

The time required to help a startup develop varies by case. It can take anything from two to 24 months and is not conducted in a structured manner. Each company receives substantial attention from OTT and its mentors, but the point at which a company graduates depends on when it receives external investment. Business formation experts and mentors from CRN play key roles in the first contact with an inventor as they analyze the potential of a technological discovery. There are five mentors who work for three days a week and operate closely with the business formation team. Non-disclosure agreements are sometimes signed between mentors and mentees, although conflict of interest stipulations are flexible and the mentors are aware of the importance of any perception that there is a conflict of interest.

OTT matches budding UM entrepreneurs to mentors and experts within the university, as well as external consultants. The mentors and experts volunteer but must have a strong technical or business backgrounds. The ideal mentor understands the details of a particular invention and can discuss its development with whichever researcher has invented it, but can also translate the invention into a viable product.

Consultants are often local entrepreneurs with extensive business experience. They are paid at a market rate. In order to facilitate growth in the startups, OTT is supportive of consultants joining the company that they were originally hired to help.

Scope of advice and advisor profiles

The OTT team consists of seasoned professionals with significant industry experience in technology assessment, protection, marketing, and licensing. They work closely with UM researchers to license technologies to commercial partners. OTT also has seasoned legal advisers, marketing professionals, and administrative resources to draw on as a way of enhancing its ability to create opportunities and in engaging with business and venture partners.
Table 22: OTT performance, 2004-2010

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royalties (USD millions)</td>
<td>9.2</td>
<td>13.4</td>
<td>10.8</td>
<td>12.8</td>
<td>12.5</td>
<td>15.1</td>
<td>17.5</td>
</tr>
<tr>
<td>Equity Sales (USD millions)</td>
<td>2.5</td>
<td>3.3</td>
<td>9.6</td>
<td>0</td>
<td>12.5</td>
<td>3.2</td>
<td>22.3</td>
</tr>
<tr>
<td>Disclosures</td>
<td>285</td>
<td>287</td>
<td>288</td>
<td>329</td>
<td>306</td>
<td>350</td>
<td>290</td>
</tr>
<tr>
<td>U.S. Patent Applications</td>
<td>135</td>
<td>130</td>
<td>136</td>
<td>144</td>
<td>132</td>
<td>151</td>
<td>153</td>
</tr>
<tr>
<td>U.S. Patent Issued</td>
<td>74</td>
<td>80</td>
<td>79</td>
<td>87</td>
<td>75</td>
<td>72</td>
<td>82</td>
</tr>
<tr>
<td>License/Option Agreements</td>
<td>73</td>
<td>86</td>
<td>97</td>
<td>91</td>
<td>91</td>
<td>78</td>
<td>97</td>
</tr>
<tr>
<td>Inventions in Agreements</td>
<td>129</td>
<td>119</td>
<td>191</td>
<td>175</td>
<td>141</td>
<td>121</td>
<td>154</td>
</tr>
<tr>
<td>New Business Startups</td>
<td>13</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>13</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

The Venture Center – a part of OTT – has a team of business formation professionals who can accelerate promising startup venture ideas and connect these opportunities with entrepreneurs and the venture community. They provide hands-on assistance to help plan and launch new businesses based on UM-researched technology. This assistance can include product evaluation, business plan writing, and assistance in locating funding and the startup team.

The mentors-in-residence are selected not only by qualifications and references, but also according to their ability to contribute to a balance of backgrounds and diversity of expertise among the existing mentors. OTT assesses potential mentors for their knowledge of technology commercialization and their experience of management in early-stage companies and, in particular, their knowledge of regional startup resources such as potential managers.

Mentors must also be willing to help expand OTT’s business formation capacity through sharing their business contacts. They are required to make time commitments to the program and be experienced in raising capital. Mentors provide a wide range of advice. They can be asked for help with developing business plans, assisting with grant proposals, creating market entry plans, looking for staff and monitoring progress. Mentors typically engage with a variety of projects, depending on their interests. They can be assigned between four and six projects at any one time and often spend around three years as a mentor-in-residence, reporting to the full-time OTT staff.

To avoid any real or perceived conflict of interest, mentors are not actively involved with ventures where they have any financial stake and are required to disclose any relationships with companies that are likely competitors for OTT ventures. Mentors are also required to maintain strict confidentiality with regards to OTT business ventures and intellectual property.

Consultants play a different role to mentors, not least because they are paid. They are tasked with developing the startup within the given resource constraints and using their expertise to guide the appropriate commercialization of the product.

Delivery of Advice

There is no set structure for the delivery and receipt of advice. Mentors may start approaching faculty members when a product is
close to commercialization, and frequently become a given startup’s “Acting CEO”. From here, they can give between four and 32 hours a month to the startup, lasting for up to two years.

**Recruitment of Advisors**

Good advisors are hard to find. They are often found in diverse areas of Michigan and are accessed through the CRN. This access happens through efforts to tap the alumni base, and through the local business community, the members of which can often provide general help and guidance on who to look for.

Attraction to the network is based on the quality of the local area and the offer of potential work. The latter is particularly important as consultants and experts are often attracted to the pipeline of projects and the chance that they might be involved in the management of a startup.

The network of mentors is more formal than it previously was. Potential mentors must now pay a fee to enter because the network has, due to its success, evolved from its original idea. The attraction for mentors is that they get to give back to their alma mater, but also that they gain the opportunity to work with dynamic startups. OTT has found that mentors are more effective in the role they play than consultants or consulting firms as their level of expertise can be useful and, in some cases, the mentors are motivated enough to come out of retirement in order to take part of the venture.

**5. Organizational Model**

UM concentrates on offering a “single window” approach to its services. OTT operates as this single window and combines the licensing and mentoring services on offer. This approach is different from that available at places such as MIT, which benefit from a stronger entrepreneurial culture and can offer sometimes complementary, sometimes overlapping, services.

The “single window” approach also gives UM the ability to monitor department research for its commercial potential. This helps with the university’s drive to push technology out into the market and means that the faculty does not encounter trouble through starting firms in a public university.

OTT has around 30 staff members. They are primarily divided between the licensing and business formation (Venture Center) departments, but also contain the legal advisors and administrative staff (Figure 63). In the licensing department there is a director, two associate directors, two senior licensing specialists, and three further licensing specialists. The Venture Center is divided between business formation specialists and mentors-in-residence.

CRN and the work of the mentors is coordinated through a member of staff in OTT. The member of staff maintains the database of contacts that underpins the connections that CRN makes between UM entrepreneurs and external experts. CRN’s close affiliation with the Venture Center and licensing department means it can stay in touch with the type of experts that are needed.

There are two hubs for external agents to connect with UM over commercial opportunities. The first, the Business Engagement Center, provides industry with straightforward access to all of the university’s
Figure 63: OTT organizational chart

- President’s Office
  - Engineering Department
  - Vice President for Research
  - Life Sciences Department
  - Executive Director OTT
    - Administration
    - Licensing
      - 1 Director
      - 2 Associate Director
      - 2 Senior Licensing Specialist
      - 3 Licensing specialist
    - Legal
      - 2 Associate General Counsel
  - Business Engagement Center
    - National Advisory Board
    - Business Formation
      - 1 Associate Director
      - 3 Sr Business Formation Specialist
      - 5 Mentors-in-residence
    - Catalyst Resource Network
      - 1 Staff
  - Code of Conduct and NDAs
  - NDAs
  - Consultants/Experts
  - Startups
  - Companies/Licenses
  - Mentorship + Potential Management
resources, technology and expertise. It builds partnerships with the business community to advance the university’s education, research, economic development and service missions. These partnerships typically involve firms supporting faculty research, university provided training programs for business people, or the use of student design projects in solutions to business problems. The second, The Michigan Venture Center, was recently created as a “front door” through which entrepreneurs and firms can access all of the services offered by OTT.

The National Advisory Board was founded in 2002 and helps to shape the university’s approach to commercialization and technology transfer. It contains representatives from industry, venture capital, government, offices from other universities that are also pursuing commercialization of their research, and entrepreneurs.

6. Innovation Ecosystem

The business environment in Michigan is challenging. The economic downturn has caused problems in the state and state funding has been cut for several areas important to business development. Furthermore, the venture capital industry does not have a strong local presence. Combined, these issues make founding and running startups difficult.

OTT has tried to develop the investment environment by attracting the companies and non-profit organizations who can provide assistance to early-stage firms. It provides yearly events for investors, entrepreneurs and mentors. Consequently, they have been able to partner with some pivotal organizations such as the Michigan Venture Capital Association and create new connections with Ann Arbor SPARK which provides support through education, consulting services, funding and development support for entrepreneurialism in the region. UM has also begun to offer a postgraduate program on entrepreneurship, weekly coffee meetings for researchers and successful entrepreneurs.

There are some local organizations such as the non-profit New Enterprise Forum (NEF) which was founded in 1986 and tries to help entrepreneurs grow their businesses. It connects entrepreneurs to management expertise, capital and potential venture partners, mentors and business services.

There is an attempt to create “pockets of innovation” in order to broadcast successes and to recruit talent. To help with this, a University Research Corridor has recently been created to leverage the intellectual capital of Michigan’s three public research universities (Michigan State University, the University of Michigan and Wayne State University), to build knowledge economy businesses and find the research activity that feeds new enterprise, educates the workforce and develops new industries. Thankfully, an increasing number of venture capitalists are starting to get attracted to the state. Recently, startups Health Media and Handylabs, which both came out of UM attracted venture capital from state and national sources. Credit Suisse oversaw the investments, which included USD 95 million from the Venture Michigan Fund (VMF) and USD 109 million from the 21st Century Investment Fund. The respective fund managers were very good in combining these investments in syndicates of out-of-state investors. USD 30 million of the VMF money has been reinvested in 11 state companies, with co-investors matching that money by a ratio of 6.2 to one. USD 31 million of the 21st Century money has
been invested in 12 state companies, with co-investments leveraged at a 5.5 to one ratio.
### Carbon Trust

**Entrepreneurship Fast Track Program**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of advisors</strong></td>
<td>6 program contractors (10 full-time program staff in total) supported by subcontracted consultants</td>
</tr>
<tr>
<td><strong>Number of beneficiaries</strong></td>
<td>40 in 2010, 100 for networking services and 300 in total since 2001</td>
</tr>
<tr>
<td><strong>Number of staff</strong></td>
<td>5 full-time in the Carbon Trust</td>
</tr>
<tr>
<td><strong>Financial arrangement with beneficiaries</strong></td>
<td>Grants of up to USD 114,000(^{138}) in consulting services + up to USD 812,000(^{139}) for research projects</td>
</tr>
<tr>
<td><strong>Typical program duration</strong></td>
<td>Up to 2 years</td>
</tr>
<tr>
<td><strong>Program annual budget</strong></td>
<td>USD 4.9 million(^{140}) for disbursement in 2011</td>
</tr>
<tr>
<td><strong>Program start year</strong></td>
<td>2010 in its current form, and since 2001 in other forms</td>
</tr>
</tbody>
</table>

\(^{138}\) GBP 70,000

\(^{139}\) GBP 500,000

\(^{140}\) GBP 3 million
Special Features of the Program

- Package of services offered at the national level: a) networking for investment and investment pitch efforts b) commercial advice c) grants. Sub-contracting model for commercial advice through partner incubators/program contractors who mobilize local consultant networks.
- Service delivery distributed among national and regional agents: general advice and mentoring by The Carbon Trust and its program contractors, and specialized services by subcontracting consultants.
- Both societal and economical criteria are used to support companies: reducing carbon emissions and boosting technology and innovation.

Lessons Learned

- A subcontracting model minimizes the need to build up internal specialized advisory capabilities and can leverage other organizations’ existing networks.
- A subcontracting model can be used to stimulate the market for consultants. Subcontracted consultants are willing to work at slightly below market price for opportunities to expand their markets.
- In the United Kingdom, there is only a handful of specialized companies with the capabilities to act as program contractors for a technology commercialization program.
- Separating fund-raising from mentoring functions between different service providers can reduces its efficacy.
- Early-stage ventures face difficulties in identifying their consulting needs. To be successful, a program based on external consultants needs the internal capabilities to help ventures understand their challenges and connect them with relevant services and consultants.
- Programs that offer separate highly specialized services cannot always make a venture investment-ready.
- Public venture support programs need to be closely linked to sources of additional public and private finance or ventures may experience a financing gap – the familiar “valley of death” following initial development services.
1. Business Model

Program Overview

The objective of the Carbon Trust’s Entrepreneurship Fast Track Program is to foster the commercialization of low carbon technologies in the United Kingdom by accelerating start-ups and supporting SMEs working in this sector. The Entrepreneurs Fast Track Program offers advice, grants and networking services during a two year period:

- **Advice:** The Carbon Trust refer early-stage companies to their program contractors. The contractors provide strategic and business development consultancy, advice on corporate finance, legal advice, management team recruitment and mentoring, market research and engagement and guidance on intellectual property protection. The Carbon Trust provides up to USD 114K of advisory support per accepted start-up/spin-out company, paid directly to the incubator partners/program contractors for services provided to the company being incubated. The amount varies with the beneficiary’s needs and their capacity to absorb the provided knowledge. The consulting fees are paid from the Carbon Trust to its program contractors, who administer the funding and recruit service providers for the companies.

- **Grants:** The Carbon Trust provides matching funds of USD 33,000 to USD 812,000 for research projects (e.g. 60% Carbon Trust, 40% from companies)

- **Networking:** The Carbon Trust connects entrepreneurs with VCs and program contractors (Carbon Trust corporate clients as entrepreneurs’ supply chain partners/customers) through 1) high-level events with investors, 2) conferences and 3) a time-intensive individual brokerage on a one-on-one basis.

After offering its services in separate programs in the past, The Carbon Trust has consolidated them into a single customized package in 2010. The new institution of the program was being informed by a needs study of 400 relevant firms (Figure 64).

**Background on the Carbon Trust**

The Carbon Trust is a not-for-profit entity created and funded by the government of the United Kingdom to promote the transition to a low carbon economy by working with the private and public sectors. In 2000, it established its VC company Carbon Trust Venture Capital, a USD 75 million fund, which it invests - leveraged with other private funding - into the UK’s clean energy technology industry, and provides start-ups with up to 50 percent in equity.

The Carbon Trust virtual incubator was established in 2001. Its objective is to offer broad-based services to technology-based companies in the United Kingdom. One reason for the government’s focus on supporting the clean-tech and low-carbon sectors was their overlap with a broad range of other sectors and regions. So far, the UK has seen the rise of strong technology-based companies, but they are localized in clusters such as in Cambridge where networks formed, and/or in a specific sector such as in biosciences. Carbon Trust’s role is to perform “technology landscaping” whereby IP that has a commercial potential is brought to the market through advisory and

---

141 GBP 70,000
142 GBP 20,000 to 500,000
The Carbon Trust has two main programs. One is the Entrepreneurships Fast Track Program. The other program, the Tech Business Accelerator, is much larger in scale. It runs competitions, funds start-ups with up to USD 13 million\(^{143}\) in 4 years.

Recently, the Carbon Trust has been seeking to partner with other institutions, networks and experts. Carbon Trust’s has closed a partnership with two Chinese state-owned enterprises to form a JV to invest in energy efficiency technologies in China. Carbon Trust has also invested in a joint clean technology fund with the government of Qatar.

**Operational Model**

*The Entrepreneurship Fast Track program uses* different operational models in its different services. The application process, though, is standardized and the successful candidate companies have access to the whole package of services.

**Commercial Advice** is offered through commercial and technical consultancy services up to a value of USD 114,000.\(^{144}\) The Carbon Trust does not directly hire individual external advisors; it contracts the administration of

---

\(^{143}\) GBP 8 million

\(^{144}\) GBP 70,000

---

**Figure 64: Carbon Trust Survey of the needs of low carbon ventures and SMEs**
external advisors to six contractors which include university technology transfer offices, technology commercialization consulting firms and venture capitalists: ANGLE, CLT, Isis Innovation, Conduit Partners, E-Synergy and The Technology Partnership (TTP). The contractors receive service fees from the Carbon Trust and provide services to the beneficiary companies. These contractors are responsible for identifying the needs of the companies, translate them into advisory services, and connect the companies to specialized consultants through a consensual process. The program recognizes that entrepreneurs may not have the skills and experience to determine from the outset the range of analysis and coaching they need in order to make their company investment-ready, one of the program’s objective. The typical process of working with and obtaining advisory support from Carbon Trust is shown in Figure 65.

**Networking opportunities** are provided with investors and industry partners through the Carbon Trust. Carbon Trust staff administers this part directly. For networking purposes, especially related to VC, Carbon Trust relies both on internal staff as well as on consultants. Some of the examples of how Carbon Trust’s network has helped organizations in the past include:

- Introductions to suitable potential customers – corporate and SME.
- Facilitation with potential partners.
- Press opportunities with national, international and trade press.
- Introductions to suitable investors.
- Involvement in our investor and corporate showcases and forums.
- Involvement in Carbon Trust and industry events, debates and consultations.

**Figure 65: Phases of the Entrepreneurship Fast Track program**
The program is currently fully funded by the UK government. In 2010 and 2011, USD 3.2 and 4.9 million respectively are at the program’s disposal for disbursement for grants.

In view of prospective cuts in public funding, the Carbon Trust is seeking deals with private corporate entities to co-finance its programs. The Carbon Trust’s value proposition is to increase the deal flow for large corporations by helping to make start-ups market-and corporate-ready. Large corporations do not typically have the capacity to engage with early stage ventures. It is not clear at this point whether Carbon Trust will achieve this objective.

The Carbon Trust compensates its program contractors through a multi-tiered scheme: a) Contractors receive compensation for each company they support e.g. a flat fee of around USD 16,000; b) contractors are compensated for phone calls answered during the application process; c) contractors receive the venture advisory funding to administer (up to USD 114,000) as lieu of payment for the consulting services they subcontract d) contractors with equity funds may also invest in the beneficiary companies – there is no clause in the contract with Carbon Trust which would forbid this. Publicly-funded programs such as the Carbon Trust contribute to varying shares of the different contractor’s revenues. For some public funding constitutes the main source of revenues, for others only a small portion. Contractors also benefit from the program by expanding their networks of investors and consultants, as well as the visibility they acquire from the program. Contractors pay the

---

145 GBP 500,000
146 GBP 2 and 3 million
147 GBP 10,000
148 GBP 70,000
149 Other temporary public partners for TTP eg were UK National Health Service (NHS), and Ofcom, the
specialized consultants at around market-rate or in some cases below market-rate. Consultants benefit by being connected to new potential SME clients.

**Participant Financing**

The Entrepreneurship Fast Track services are free to the selected companies. Ten percent of start-ups in the Fast Track Program eventually receive funding from the Carbon Trust Venture Capital. All start-ups in Fast Track program sign a clause that makes them eligible for VC investment. Contractors are permitted invest in the beneficiary companies they work with, although this rarely happens.

3. **Beneficiaries**

**Selection of Participants**

The Carbon Trust markets and advertises the Entrepreneurship Fast Track program in various ways: its program contractors; universities; its networks of investors and companies; its website; government agencies such as the Small and Medium-Sized Program and the Ministry of Economy.

The selection process involves a series of discussions, online applications and interviews. The application process takes between two to five weeks. An important component of the selection process consists of conversations, either by phone or in person, between the Carbon Trust and applicants. Roughly 15 percent of companies expressing initial interest in the program are selected. Out of 700 applicants in the first stage (phone call), 400 will have phone discussion with Fast Track program contractor, out of which 150 will complete an application form. In 2010, the Entrepreneurship Fast Track Program supported 40 companies. The application process can be seen in (Figure 66).

After the last stage of Figure 66 Carbon Trust staff and experts hold an iterative set of meetings with the company, after which a decision is taken to admit the company into the program or not. The two main selection criteria include:

- Good business proposition.
- Value for reducing carbon footprint.

**Participating Company Profile**

The program targets a variety of ventures that fall under a list of priority technologies with a preference for innovative start-ups:

- Corporate spin-outs.

---

**Priority technology list for applications based in England:**

- Biogas
- Biomass (heat and CHP, power, power with CCS)
- Buildings (heating, ventilation and air conditioning, lighting systems, materials and design)
- CCS (coal fired, gas fired, industry CCS, CO2 transport and storage)
- Electricity grid (efficient transmission, grid connection and balance of system, smart distribution grid)
- Energy storage (electrical, thermal)
- Fuel cells (large power and small power)
- Heat distribution
- Heat pumps (air source and ground source)
- Hydrogen (energy storage, fuel cell vehicles, production)
- Marine renewables (wave, tidal range - barrage and lagoons, tidal stream)
- Offshore wind
- Solar hot water heating

---

Independent regulator and competition authority for the UK communications industries
**Universities, research institutes and their start-ups.**

**Small and micro businesses.**

**Overseas organizations willing to relocate to the UK.**

**Commerciy-oriented projects not yet oriented in a dedicated company, but where there is potential for company formation or licenses.**

---

**Nurturing Innovation: Venture Acceleration Networks**

**Figure 66: The Entrepreneurship Fast Track application process**

- **Call to the Carbon Trust customer center**
  - 100% of applicants.
  - A general discussion to give entrepreneurs an indication of their eligibility to apply and to respond to questions. If the venture is eligible its details are passed on to one of the program contractors.

- **Discussion with Carbon Trust contractor**
  - Approximately 80% of applicants.
  - A technical and commercial telephone discussion to give entrepreneurs an indication of the likely success of their application.

- **Completion of the application form**
  - Approximately 60% of applicants.
  - A 3 to 4 page form application covering questions of a technical and commercial nature, including impact on carbon emissions.

- **Interview**
  - Approximately 50% of applicants.
  - A 45 minute interview in person or by phone by one technical reviewer and one commercial reviewer.

- **Free business analysis**
  - Approximately 15% of applicants.
  - An assessment of the venture as well as potentially a road-mapping session with Carbon Trust, destined to identify gaps and propose areas to support.

**Source:** adapted from http://www.carbontrust.co.uk/emerging-technologies/fast-track/how-to-apply/pages/how-to-apply.aspx
The Carbon Trust also supports established SMEs if they have innovative products. Relative to startups, more mature SME have better knowledge of their markets. The program’s focuses its assistance to SMEs on R&D-related issues. SMEs are also assisted with connections to investors and in preparing their pitch.

**Program Impact**

In 2009 and 2010, the Entrepreneurship Fast Track program has supported grants to 19 companies directly and advice support to 24 companies through its incubator partners. In the past decade, one hundred companies have benefited from The Carbon Trust’s networking service and have raised USD 471 million\(^\text{151}\) in VC and joint development funding so far. Often, consultants in the program are retained by the beneficiary companies after the program has ended.

However, there are reports that raising capital via the Carbon Fund Entrepreneurship Fast Track program has been difficult. Some start-ups have received specialized services from the program but found themselves not fully equipped and prepared for making a high-quality investment pitch, and insufficiently linked to potential future investors. A failed attempt to secure further funding through the Carbon Trust can reportedly influence investment decisions by outside investors.

The Carbon Trust assesses its impact through the following criteria:

- Additional private financing raised.
- Increase in sales.
- Do they make their first revenues?
- Does the R&D of early-stage start-ups have clear outcomes such as patents or licensing deals.

The Carbon Trust employs key performance indicators with its 6 program contractors. The Carbon Trust will also require a program assessment.

### 4. Human Network

**Scope of Advice**

Under the program’s commercial advisory service business line, the type of advice varies from company to company, and also depends on whether the maturity of the company. In general, the most important need and request is business advice. Other services most demanded by companies include: capital/finance – connecting them to financiers, and preparing them for the pitch, and market assessments from independent technical expertise – often a prerequisite for VC investment. The Program’s advertised range of advice includes:\(^\text{152}\)

- “Advising on patenting and intellectual property strategies.
- Prioritizing markets and providing advice on how to enter them.
- Building capable management teams.
- Help finding customers, partners and investors.
- Developing an investor ready business plan and pitch – this is often done in cooperation with The Carbon Trust which runs courses.
- Boosting marketing and PR capabilities.

\(^{151}\) GBP 290 million

\(^{152}\) [http://www.carbontrust.co.uk/emerging-technologies/fast-track/pages/default.aspx](http://www.carbontrust.co.uk/emerging-technologies/fast-track/pages/default.aspx)
Nurturing Innovation: Venture Acceleration Networks

- Providing expert engineering, modeling and product development.
- Developing supply chain strategy.
- Meeting product tests and regulations.
- Assistance with scale-up for manufacture.”

When working with a company, contractors generally perform an initial validation of the technology. They usually do not fund or help to fundraise for the prototyping phase, and hence are not part of the technical development phase.

Delivery of Advice

The grant for advisory services can take a value of up to USD 114,000 and can be disbursed in various stages according to the evolving needs of the beneficiary company. The first trench is decided upon by Carbon Trust, the subsequent trenches of disbursement are disbursed by Carbon Trust to the partner incubator based on perceived demand from the partner incubator and the company. The delivery of advice is based on a three-stage process:

1) Staff from the program contractor organizations have iterative meetings with the entrepreneurs to understand their needs and understand their technologies. Often, entrepreneurs do not know what to focus on first, and how to commercialize their technologies. As a first entry point he/she may demand an assessment of the strength of their technologies.

2) Once a specific advisory product is identified and agreed upon, a collaborative and consensual effort is made together with the firm to identify the best suitable consultant from the contractor’s network to carry out the task. Depending on the service, this can require technical (engineering, scientific) expertise or business expertise.

3) The consultant is then hired and carries out the specific advisory service.

In most cases, the grant is not fully disbursed at the beginning. Rather, through a continuous process of meetings with the contractor and identifying tangible ways/services forward based on emerging issues.

The engagements are of a maximum duration of 18 months, and can cover a wide range of meetings, depending on the number and type of advisory services implemented through the grant. ANGLE has supported roughly 40 companies, and is the longest serving contractor of The Carbon Trust.

Advisor Profiles

Program contractors are organizations specialized in technology commercialization and early-stage ventures (Box 17). Program contractor organization staff are well versed in both technology development and product development and commercialization services, and have good people skills. The contractors employ a range of technical (engineering, scientific) staff and business staff which engage with the benefitting firms.

Consultants who are hired by the contractors are experts who span a wide variety of technical and business fields. Most work in the private sector have extensive industry experience.
Box 17: Profile of two Entrepreneurship Fast Track incubators/contractors

Founded in 1994, ANGLE focuses on the commercialization of technology and the development of technology-based industry. ANGLE creates, develops and advises technology businesses on its own behalf and for its clients. ANGLE’s specialist Management services business provides support on a fee-for-service basis to major clients around the world involved in incubation, IP commercialization, SME innovation and growth and the operation of science and technology parks. ANGLE also owns a portfolio of company holdings with high growth potential in the medical and technology sectors. ANGLE seeks to retain a substantial shareholding in these companies with a view to ongoing returns from dividend, milestone, royalty and capital returns.

TTP has specialized over the years in providing cutting-edge technology (product) development and related consulting services. On the technology side, TTP provides fee-for-service consulting for technology in a wide range of sectors – from embedded technology in the dynamic, growing global market for digital broadcast TV, radio and multimedia services delivered to mobile devices, to electronics, sensors microdevices, optics and providing specialist knowledge in software and systems development. On the product development side, TTP spans also a wide range of sectors, stemming from consumer products to healthcare, communications, printing and industrial products. TTP operates internationally, with much of their business outside the UK. They are particularly active in continental Europe, the USA and the Far East. Product Development Consulting: the integrated technology and commercial branches of TTP offers a distinct advantage: the breadth and depth of their scientific, engineering and business capability, all of which is brought to bear for every project; that makes them combine three aspects: they have deep knowledge of current advances in technology; they understand the commercial implications of its exploitation for the business; they have the engineering and project management skills to develop and deliver your new products. TTP does projects not only in UK, but also wider Europe and the US.


Recruitment of Advisors

Program contractors were identified through a public procurement process. Contracts are usually for a two years time period with a one year possible extension. ANGLE’s first contract had a potential total maximum value of USD 1.5 million. The actual value of the contract depends on the number of companies which ANGLE supports.

The program contractors are responsible for finding the right consultants to perform the different support tasks. They do this jointly with the entrepreneur to recruit the best candidate. Consultants are hired on an as-needed basis and the consultant networks of the program contractor institutions are rather fluid. In many cases consultants continue working directly with start-ups after their initial contact through The Carbon Trust and drop out of the contractor’s available network temporarily. ANGLE for instance depended mostly on “arms length” consultants.

5. Organizational Model

A small team of five people within The Carbon Trust runs the Entrepreneurship Fast Track program (Figure 67). With its current operational demand, staff is stretched to its

---

154 GBP 900,000
limit, and the program reports requiring one to two more staff for an ideal work flow delivery. The contractors add another 10 full-time staff to the program.

- **Profile of internal staff**: broad range of technology experts; Business director; Head of Research program; marketing specialist
- **Profile of program contractors**: knowledge in VC; experience in commercializing technology; a good network and consultants; experience in R&D; engage well with people (soft skill).

The assessment of program contractors is done based on criteria of how much deal flow is created for companies. Program contractors have to deliver regular business reports with key performance indicators to The Carbon Trust. The Carbon Trust also follows up with the entrepreneurs to obtain feedback on the contractors.

6. **Innovation Ecosystem**

By focusing on low carbon and clean technology companies, and acting as a “virtual” incubator, the Carbon Trust aims to break through the “patchy” situation in the UK where supportive innovation institutions are localized and based in isolated sectors and regions. Nonetheless, all of the program contractors are clustered in the South and South-East of the UK. This is related to the availability of high-quality of contractors in the UK. In view of the specific nature of the technology commercialization activities of the program, only about 10 entities in the UK really qualify as program contractors.

As the UK market still does not have expertise in every technology niche, and consultants and investors in part are lacking the right skill set, The Carbon Trust is now trying to reach out more to other program contractors and incubation providers in Germany and Scandinavia to learn from them and program partner with them. It is also reaching out to the US market.
Figure 67: Organizational structure of the Entrepreneurship Fast Track Program

- Carbon Trust
  - Carbon Trust management
  - Entrepreneurship Fast Track team (5)
  - Other programs

- 6 Contractors
  - Contractor management
  - Entrepreneurship Fast Track staff (10 total)

- Fundraising
- Mentorship
- Advice & information
- Contract
- Individual consultants
- Ventures

Other programs

Contractors
Case study program location on the McKinsey innovation cluster map and Russian city comparators.

Nurturing Innovation:

VENTURE ACCELERATION NETWORKS

A Review of Existing Models