Supporting Frontier Technology Ventures

Supports for entrepreneurs - including mentorship, business strategy, operations support, and technical advice - play a crucial role in the shaping the overall direction of a new company. These early inputs help frame the company’s business model and set the tone for their growth for years to come. Numerous studies have shown that incubators and accelerators have positive impacts on growth, external financing, and firm survival. Their role in identifying bad ideas and closing down failing companies faster has been equally valuable. Supports can be particularly meaningful for frontier technology start-ups, where the quality of ideas and underlying technology play a more important role than factors like company structure and connections to valuable networks. Autonomous vehicle startup Cruise Automation, for example, was able to leverage its successful completion of the Y Combinator accelerator into an immediate acquisition by General Motors for $581 million. Two years later, it was valued at $11.5 billion.

Current Channels for Support

There are four major types of support resources for entrepreneurs: incubators and accelerators, universities, VC active management, and Boards.

Incubators and Accelerators

Incubators and accelerators are often the first line of support for early stage entrepreneurs. In exchange for either monthly leasing fees or equity, incubators and accelerators provide entrepreneurs with office space, mentorship, specific skills training in areas like business operations and growth strategy, and often facilitate connections to potential investors. Many of the well-known incubators and accelerators tend to focus on digital consumer products and services. However, there is a growing cadre of incubators and accelerators, often affiliated with universities, which cater specifically to the needs and challenges of frontier technology start-ups.

The Engine, launched by MIT in 2016, works to support breakthrough innovations whose underlying technology—typically in robotics, manufacturing and materials, health, biotechnology, and energy—exceeds the typical three to five year commercialization timeline of digital technology startups. In addition to providing specialized equipment and lab space, mentorship for technical founders and access to MIT’s network, The Engine also invests directly in its portfolio companies out of a $200 million investment fund. The Engine currently supports 17 start-ups.

Greentown Labs is the largest clean technology incubator in the United States. It offers 70 largely hardware-oriented startups nearly 100,000 ft² of lab, office, and event space, as well as legal support and access to the organization’s investor network. To date, Greentown Labs has helped more than 120 startups raise over $240 million. More than 80% of Greentown Labs startups are still operating today.

Universities

Many frontier technology start-ups are born out of research conducted in university laboratories. Major research universities have launched labs and mentorship programs addressing the particular needs of frontier technology founders: access to advanced tools and equipment, commercialization support, and helping prepare technical founders to lead business ventures.

Pagliuca Harvard Life Lab is Harvard’s 15,000 ft² incubator for biotech and life sciences start-ups founded by Harvard affiliates. For a monthly fee ranging from $200 (individual) to $20,000 (team), start-ups get access to specialized work stations including bio-safety level 1 and 2 facilities, while the Life Lab handles pain points like purchasing and waste removal. The Life Lab anticipates start-ups will incubate for 6-24 months.

Creative Destruction Lab partners with business schools at seven leading universities in Canada, the United States, and the United Kingdom. The program focuses on supporting start-ups in seven areas—AI, blockchain, cities, energy, health, quantum, and space—primarily with business development. They connect start-ups with founder and investor mentors, scientific advisors, MBA students to help build financial models and market analyses, and potential investors.

VC Active Management

Levels of day-to-day involvement with companies vary widely across the VC industry. Capital is the lifeblood of early stage start-ups, and financing plays a crucial role in supporting good ideas and good teams. For much of the industry’s history there was little expectation that investors should provide much beyond financing and a voice on the Board of Directors. Today, however, funds are increasingly offering a platform of services in order to both better support their
portfolio companies and stand out in a crowded market. These services range from traditional mentorship and incubator services to in-house subject matter experts and talent acquisition teams.

Andreessen Horowitz uses a VC platform model by building a large core team of operational and recruiting experts to support its portfolio companies at a time when most firms relied on a small, partner-heavy team. Today, Andreessen Horowitz employs a talent team of nearly two dozen and an operations team of more than 40. The fund expanded into biotech in 2015, building out its operational capacity in the industry and raising $650 million in dedicated investment capital.9 10

First Round Capital launched two initiatives to provide outside advisory support to portfolio companies. The first, Short-Term Advisory Relationships, paired founders and advisors for 90-day sprints with predetermined deliverables and standardized compensation. The second, the First Round Expert Network, connects founders with outside operational experts who advise on issues like product, design, engineering, marketing, finance, business development, and human resources. Like Andreessen Horowitz, First Round also offers recruiting services for its portfolio companies.11 12

Boards

One of the first sources of support for early-stage start-ups are their Boards. At the earliest stages, the Board may consist solely of the founders and investors.13 In contrast to later-stage companies, venture boards typically lack specialized board members and committees that provide a broader range of oversight and outsider relationships and support. There is also less attention paid to issues of board diversity in terms of gender, race, geography, professional backgrounds, or other important dimensions.14

Support for Societal Impacts

The need for greater support for high-growth ventures to consider societal impacts has received much attention in the last few years. Facebook, for example, suffered the largest one-day loss in the history of the U.S. stock market—$120 billion—in July 2018 after 18 months of blistering public, regulatory, and Congressional scrutiny.15 These types of cases have had investors, governments and the general public taking a much closer look at how the foundational values and practices related to management of societal impacts were considered in the earliest stages of tech companies.

Risk management, ESG evaluation, and legal and public relations strategies are all avenues that companies pursue to help mitigate societal harms. Unfortunately, many of these functions are not fully operational in early stage tech-driven ventures.
Endnotes


5 *The Engine*, www.engine.xyz/.


14 Ibid.


16 Ethical OS, https://ethicalos.org/.