Overview

Innovation Works (IW) is a Venture Development Organization that invests risk capital, business expertise and other resources into high-potential companies with the greatest likelihood for regional economic impact. IW is part of the Ben Franklin Technology Partners (BFTP), a statewide technology-based economic development program whose mission is to stimulate Pennsylvania’s economy through technological innovation. BFTP operates regionally with four centers located throughout the Commonwealth. IW is located in Pittsburgh, Pennsylvania serving the nine counties of Southwestern Pennsylvania.

IW, and its BFTP counterparts, focus on entrepreneurial endeavors, viewing them as the ultimate engines of growth. In support of these companies, the BFTP Centers deliver crucial resources to help drive that growth, including:

- Investing risk capital in emerging technology-based enterprises and established businesses;
- Providing hands-on technical and business expertise to spur enterprise growth and accelerate commercialization activities; and
- Delivering customized solutions that draw on an extensive network of public and private resources, including universities, federal laboratories and research institutions.
While all of the BFTP Centers strive to stimulate Pennsylvania’s economy through technological innovation, each Center, by design, is different from its counterparts. During the program’s conception in the early 1980s, it was recognized by Commonwealth leaders that each Center must be provided a level of independence in order to be able to formulate their own strategies and programmatic content within their communities, and thereby form dynamic public/private partnerships that focus on the most impactful endeavors for their own particular region. This regionalization has enabled the program to stay current, to continuously evolve, and to remain a dynamic partner with its specific communities.

The business assistance and financial capital services of Innovation Works arose out of regional necessity. During the 1980s, most of the area’s steel mills closed, other factories shuttered, unemployment shot well into the double digits, and the city’s population fell by almost 50 percent.

At a crossroads, Pittsburgh leaders used this challenge to invest in a unique idea at the time—fund technology research and seed a new economy with money for the creation of technology companies. Technology-based economic development was virtually unheard of and untested, and the experimental Ben Franklin Technology Centers were considered to be a novel approach. Importantly, there was early recognition that the Centers would not resolve the economic challenges overnight; this strategy required a long term commitment and sustained investment.

IW’s earliest programs were focused on spurring university and industry collaborations, leveraging the strengths of Carnegie Mellon University (software, engineering and robotics) and the University of Pittsburgh (health and life sciences). IW’s programs were largely grant driven, and focused on commercializing technology through mature industry leaders within the region. The concept of focusing programmatic resources on startups was relatively new. However, as the venture capital industry began to evolve, and the nation began to recognize that entrepreneurial endeavors generated the majority of private sector jobs, IW began to transform its programmatic focus.

This evolution kicked into high gear about ten years ago when IW made the strategic decision to shift away from a grant-based model, and refocus its commercialization efforts to have a much larger emphasis on startup companies. Specifically, IW focused its efforts on areas in which it could intercede by playing a critical role in the commercialization continuum by working with entrepreneurs to fill the gaps, whether they were identifying high potential intellectual property, providing capital to mitigate risk and entice private investment, or developing the business acumen within the entrepreneurial community to successfully grow and scale an innovation-based company.

The original focus of IW’s activities in this area is its seed fund, which was designed to bridge the investment chasm at the earliest stages, and also surround the startups with business experts that had walked in the shoes of the entrepreneur. Today, IW has broadened its approach to include programmatic elements focused on a diverse array of needs and opportunities.
VDO Programs and Services

IW's programs seek to accelerate economic growth in Southwestern Pennsylvania by infusing business expertise and funding into early-stage technology companies and those pursuing the next competitive edge. IW helps to guide entrepreneurs through the commercialization pathway, assist researchers in commercializing ideas, and aid small manufacturers as they look to open new markets by adapting new technologies into their products and processes.

Summaries of IW’s programs and services are provided below.

Business Advisory Services

Business Coaching: IW helps guide entrepreneurs by providing them with a real-world understanding of the dynamics of technology markets and the nuances of starting and growing an early-stage company, including: developing a viable business plan, staffing for growth, product development, researching market opportunities, and positioning the company to attract investment capital.

When IW first engages with a company, the entity is typically at the prototype stage and has on average four people working on the team. It’s rare for an entrepreneur or startup to be able to amass the range of expertise needed for success. IW helps fill in these gaps with internal experts and outside advisors who help entrepreneurs commercialize their technology, enter the market successfully, and scale.

IW had developed the following process when coaching a start-up company:

- First, an IW staff member, called an Executive in Residence, is assigned to work directly with the company.
- IW and the company determine whether the firm’s aspirations are consistent with the IW mission. If not, an attempt is made to introduce the company to a more appropriate resource.
- Next, IW and the company founders review the company’s business plan and discuss the strategic vision for the venture. Coaching focuses on the following types of questions: What is the company’s potential? How might that potential be achieved? What resources will be needed? If a business plan has not been prepared, IW provides guidance and direction as well as introductions to local resources that can help.
- If the company’s founders and the IW professionals share a vision of the company’s potential, the discussion moves to what must be accomplished in the short term, i.e., the next six, twelve, or eighteen months.
- These discussions often include consideration of whether or not IW will fund the enterprise directly. Companies receiving IW funding are likely to require access to resources well beyond those available from IW. As such, it is essential to focus on what the company must do in order to attract follow-on resources. These may include federal grant programs, angel and venture capital investment, and referrals to other business development companies.
With a shared vision and agreement as to the initial goals of the company, a detailed action plan is developed. This is material that should be part of the business plan, although it might require some reworking to align with an associated budget. This is likely to be contained in a quarterly plan for key, value-accrative actions by functional area and monthly financial projections for the next 24 months.

Procedurally, the IW Investment Committee must recommend an investment to the IW board of directors and the board must approve each investment.

Legal due diligence must be completed and a contract is signed.

It is important to note that about 200 companies approach IW for assistance each year, and approximately 10 actually receive a capital investment. Since its founding in 1999, IW has worked with more than 1,000 companies in a variety of capacities. Of these, IW has invested over $50 million in over 140 companies. These same companies have raised over $1 billion from other sources, including investors such as angels and venture capital firms.

IW professionals have helped companies secure this funding by providing the bridge between what the companies want to do and what a funding source wants to fund. IW helps its clients understand:

- How deals are being done, including valuations and form of investment
- The consequences of different forms of funding
- How to choose the path that is most appropriate for the company
- Risks and potential pitfalls of commercialization strategies encompassing development, sales, and marketing
- Boards of Directors composition and governance issues, and
- Ways to conserve cash.

In addition, IW acts as coach, liaison and facilitator, in an attempt to connect entrepreneurs with the most likely angel and institutional investors. They work with their clients to:

- Develop the funding pitch, tailored to a targeted funding source based on the company’s product, market, company stage and team
- Prepare for due diligence
• Review term sheets from prospective investors, and
• Structure the deal.

Entrepreneur's Toolkit Blog

The Entrepreneur's Toolkit Blog is a growing collection of articles, templates, and other materials that IW has developed in the course of working with local entrepreneurs and companies. From a contextual overview of the fundraising process to detailed guidance on diluting the founders' ownership, these materials span many aspects of the entrepreneurial process with particular attention paid to fundraising. Topics in the toolkit blog include:

• Business Models
• Compensation
• Corporate Governance
• Deals
• Founders’ Issues
• Fundraising
• Management
• Marketing & Sales

Alpha Lab: AlphaLab is a specific example of IW's continuous evolution. Recognizing that the rapid-pace of software development, including gaming and internet applications, was a prime opportunity for entrepreneurs in Southwestern Pennsylvania, IW launched AlphaLab in 2007. AlphaLab is a startup accelerator that helps capital-efficient startup companies launch quickly and successfully. Twice a year, up to six companies in the software, web, mobile, entertainment technology, or hardware space are selected to participate in an intensive 20-week program. During these weeks, companies rapidly iterate on their products and work with mentors, advisors, and the AlphaLab team to hone their business models. The program culminates in the AlphaLab Demo Day: a chance for companies to pitch what they’ve been working on to angel investors, VCs, and press outlets from around the nation.

Specific business services that companies receive include:

• $25,000 investment from Innovation Works in exchange for 5 percent common stock in their company
• Mentoring and hands-on assistance
Weekly educational sessions during which speakers talk exclusively to AlphaLab companies about a wide range of topics including, sales, investment, design, branding, and accounting.

Access to IW’s broad network of advisors, investors, alumni and community partners

Office space within AlphaLab’s 5,000 sq. ft. facility, and

Startup legal services.

The companies are expected to remain in the region after the end of the AlphaLab program, and the terms of the investment include pay-back provisions if a company decides to relocate. IW’s goal is to help the entrepreneur build a successful technology company and to add to the critical mass of flourishing technology companies in the Pittsburgh region.

Over the three years of operation, AlphaLab has attracted more than 600 applications from entrepreneurs in 35 states and seven countries interested in starting their businesses in Pittsburgh. The program has helped mostly first-time entrepreneurs launch 38 new companies, trained more than 120 entrepreneurs, hosted over 80 events annually that have together attracted more than 1,000 participants and helped more than half of its graduates raise follow-on funding.

Possibly more important than the metrics, AlphaLab has become a focal point for the community of entrepreneurs, developers, and organizations of entrepreneurs in the region. It has created a way for that community to develop a critical mass with greater cohesion, more entrepreneurial energy, and value for all participants.

**Strategic Human Resource Assistance:** IW combines its knowledge of startups with resident human resource (HR) expertise to help entrepreneurs develop and execute HR strategies to drive growth and success. These experts help start-ups:

- Executive (C-level) talent sourcing and selection process tools
- Write job descriptions and develop interview techniques for candidates
- Develop compensation strategies
- Implement organizational effectiveness and design
- Pursue leadership development

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Institute performance management techniques
Develop business scorecard metrics, and
Conduct HR organizational vulnerability compliance audits.

The program has placed more than 100 key hires in more than 40 technology companies in critical positions such as vice president of sales, chief financial officer, and specialized technical positions.

Financial Capital

IW manages several financial capital funds in addition to helping its companies gain access to other external sources. The funds managed internally are discussed below.

**Seed Fund:** When IW launched its seed fund in 1999, the program was seen as a way to begin to pull technology out of the region’s research centers while also coaxing venture capitalists from outside of Pittsburgh to participate in deal flow in the Pittsburgh market. Since its inception, the seed fund has been IW’s primary investment program. Funds are typically invested in early stage technology companies in the form of convertible debt. IW’s investments are made in companies very early in their lifecycle, providing risk capital into companies that could otherwise not secure private investment.

The size of IW’s initial investments depend upon the company’s commercialization plans, the magnitude of the opportunity, the required finances, and whether IW alone, or IW in conjunction with other funding, will enable the company to make significant progress towards agreed-upon milestones. The average IW investment is roughly $340,000 and does not exceed $600,000. IW is typically the first investor in a startup technology company after founders, friends and family. On average, IW invests 21 months prior to an early-stage venture capital investor. IW also supports the investment with a variety of professional services provided through a network of in-house Executives in Residence. Investable companies are those that meet at a minimum the following criteria:

- U.S.-owned
- Located in or willing to relocate its headquarters or primary operations to Southwestern Pennsylvania
• Employs fewer than 50 people
• Developing a proprietary technology in an area that addresses high-potential emerging and growing markets such as: life sciences (medical devices, biotechnology, therapeutics, diagnostics, informatics), information technology (hardware, software, internet infrastructure), energy, clean technologies, robotics, advanced materials, consumer electronics, etc.
• Has a clear and compelling value proposition in a viable market
• Has a strategy to achieve full-scale commercialization, and
• Willing to accept coaching, a dedication to the commercial success of the company, and a desire to grow and prosper in the region.

IW invests in convertible notes. In other words, IW will lend the company money, like a bank, but has the right to convert the outstanding principal and accrued interest into equity at the time of a subsequent transaction in which the company’s valuation is established. IW’s conversion rights include a discount to the share price based upon how long the note has been in effect, i.e., 10 percent in the first year, 20 percent in the second, and 30 percent after the second anniversary of the note. If no such “priced” investment occurs, the note matures on its fifth anniversary and repayment is expected at that time.

Historically, about one in twenty companies that approach IW receive funding. In a typical year, IW will add 10 to 12 new companies to its portfolio and re-invest in about the same number of existing portfolio companies. New companies receiving investment will meet two primary criteria:

• An investment in the company is aligned with the IW mission of funding early stage companies that are commercializing technology and have the potential to have a significant impact on the regional economy; and
• The company must be evaluated by IW’s team to be one of the top 10 or so that seeks funding from IW in any 12-month period.

IW leadership believes that the Seed Fund’s success can largely be attributed to its underlying investment philosophy that understands the different qualities startups in various industry sectors require to garner interest from private capital markets. IW recognizes companies will not sustain positive cash flows or profitability solely on IW’s investments. Therefore, to help the company get to a value creation inflection point where they are interesting to the next class of investor, IW’s investment is coupled
with business assistance that focuses on a commercialization strategy, building out the human capital team, and developing a funding strategy.

Since 1999, IW has invested more than $50 million in seed funding to more than 140 startups. That level of investment makes IW the largest seed-stage funder in Southwestern Pennsylvania and one of the most active in the U.S. IW participates in about 25 transactions per year, both new and follow-on, totaling about $4 million each year from its Innovation Investment Fund (IIF).

Important to note for the economic development goals of the public funding sources for IW’s work, of the total number of companies that have received investments over the past 12 years, only four have left the region. The leadership of IW believes the reason for that great retention rate is once these companies start to build their human capital and intellectual know-how in the region, which is really the key asset in a technology company, the companies are less likely to leave.

**University Grants:** The Pittsburgh region’s university base has an annual research budget of nearly $1 billion in federal grant money, thereby creating the potential for companies to spin out after incubation in a university or federal research lab. IW works in partnership with local universities, including Carnegie Mellon University, the University of Pittsburgh, Duquesne University and Robert Morris University and others to identify and cultivate high-potential technologies, and provide grants up to $25,000 to help speed commercialization. IW has provided more than $1.2 million in University Innovation Grants (UIGs) since the program’s inception.

These early-stage grant funds are used to answer fundamental questions regarding the commercial potential of promising research, including market research, business case validation, intellectual property freedom-to-operate analyses and validation of technical feasibility through prototype development and applied research activities.
IW also works with university partners on educational initiatives designed to demystify the commercialization process for university researchers and make it easier for them to see a path from their research to market potential. To this end, in 2010, a partnership between IW and Carnegie Mellon University (CMU) was one of six winners of the inaugural i6 Challenge held by the U.S. Economic Development Administration. The i6 Challenge awarded funding to six teams around the country with the most innovative ideas to drive technology commercialization and entrepreneurship. IW’s winning submission focuses on creating an Agile Innovation System to accelerate the commercialization of technologies being developed within the region’s universities and small businesses.

Innovation Adoption Grant Fund: In 2004, IW conceptualized and outlined a program that would seed technology development more effectively in rural counties and economically distressed communities. The eight rural counties of Southwestern Pennsylvania have a much different economic base than Allegheny County where Pittsburgh is located. Towns in these rural counties are supported by thousands of small manufacturing companies that are fighting to survive and prosper in a competitive global market. IW saw an opportunity for a program that would grant money to those established manufacturers that are interested in utilizing or creating cutting-edge technology for new product development or manufacturing process development. Many of these companies face tremendous pricing pressures from overseas competitors, and they need to make products faster and more efficiently. They also need to continuously innovate new products and processes to stay ahead of their competition. But the problem is that many of these companies do not have the financial and technical wherewithal to build in-house research divisions to continually innovate.

IW’s Innovation Adoption Grant (IAG) Fund pairs small manufacturing companies (with less than 250 employees) with non-profit centers of excellence. The centers help the companies develop new products or create new and better manufacturing processes, on a fee-for-service basis. Grants of up to $50,000 (matched by the companies) are awarded to manufacturers that have research and development needs but don’t have robust R&D departments to conduct the work internally. These grants go to offset the cost of the outsourced R&D. Since inception, the IAG Fund has:

- Awarded more than $2 million to approximately 150 companies in all nine counties of Southwestern Pennsylvania;
- Generated an additional $2 million in matching investment in private R&D;
- When last evaluated, created or retained more than 800 jobs (at a cost of $1,875 per job) that pay an average annual salary of $45,000;
- Helped to design, prototype, test and commercialize more than 30 new products; and
- Helped to implement at least 75 new manufacturing processes that bring operating efficiencies and higher profitability to the participating companies.
Moving the Needle

Throughout its history, IW has consistently advanced the practice of technology-based economic development. When IW was originally conceived, the concept of growing economies through any means other than company attraction and expansion of existing firms was virtually unheard of and untested. IW has not rested on its early success. Instead, it has continued to evolve its model to meet changing economic conditions and new challenges.

For example, IW recently introduced a new model for incubation that it views as quite different from the traditional incubator model. AlphaLab takes start-up companies through a very intense period of company development and education that culminates after twenty weeks of assistance in “Demo Day” where outside investors are pitched and companies are launched. IW believes that AlphaLab represents an incubation model in which scalable companies have products, customers, a business model, and further connections to risk capital investments within a relatively short time frame due to the intensive level of business assistance that is provided. Likewise, ideas that turn out not to become viable businesses are quickly ascertained so that time, energy and further resources are not wasted. In any case, all companies move out of the physical space to make room for the next AlphaLab class.

IW's constant and unrelenting focus on meeting the needs of the region's entrepreneurs has helped foster a new culture concentrated on developing a critical mass of start-up activity with greater cohesion, more entrepreneurial energy, and added-value for all participants. IW's leadership believes that its experience within the risk capital and entrepreneurial assistance domain has allowed the organization to continue to evolve as it works to stimulate and leverage what's happening in the community and “turbo-charge” the growth. They believe that IW created the spark plug to ignite much of the entrepreneurial energy in the community.

In addition, IW is the single largest seed investor in Southwestern Pennsylvania and one of the most active seed investors in the nation. As a result, Pittsburgh is one of the fastest growing venture capital markets nationally over the past 10 years in terms of total dollars, companies funded, and dollars per capita.
Organization

IW's staff of 20 employees is heavily focused on seasoned business and financial talent in order to deliver the level of sophisticated services to the technology entrepreneurs that they work with through the business assistance and financial capital programs. The organization believes that it must be staffed with experts who have walked in the shoes of entrepreneurs. Therefore, IW's staff is comprised of startup experts such as former entrepreneurs, investors and executives responsible for product and business development, marketing, operations and human resources. They augment their own expertise with trusted mentors from the community who offer additional insight, contacts and guidance to the startup companies.

IW also has a very active Board of Directors, comprised of 12 members representing the region's most successful entrepreneurs, key leaders from the research institutions, and the founding partners of the largest venture funds. Therefore, the board members possess intimate familiarity with the challenge and needs of early-stage companies, which in turn enables them to provide strong leadership for the organization. Also, because it is not a large board, it can be focused on operational issues as well as strategic and governance issues.

Summary of Key Success Factors

There are a number of key success factors that have enabled the success that IW has achieved. First, IW focuses considerable energy and resources on tracking, maintaining, and analyzing the metrics of its programs. This enables the organization to make adjustments to its programmatic offerings as well as be able to communicate effectively with local stakeholders, legislators, and other elected officials about the success of the program in a very tangible way.

Second, IW leadership believes a broad community-wide, public-private partnership is important. To undertake the programmatic endeavors that IW has within its portfolio without having buying in and support from other key stakeholders would be nearly impossible. IW believes that one of its roles as a VDO is to be an evangelist for the cause and to seek buy-in from all the key partners, whether its state, local, government, universities, foundations, business community, etc.

Third, IW believes that a key factor of success is to remain absolutely focused on the needs of the entrepreneurs the organization is serving. A VDO cannot lose sight of the fact that the organization succeeds when the assisted company is succeeding. It is not about the VDO growing big or adding jobs within the organization. Constantly focusing on how the organization can add value to the innovation system and constantly evolving to meet new needs is critical to long-term sustainable success. The leadership of IW asserts that if its staff wakes up everyday thinking about how he/she can help a company or an entrepreneur become successful, then the VDO will stay on track. When the organization begins to become inwardly focused, trouble arises.