

Organizing Transatlantic Innovation

Managing Transatlantic Opportunities through Innovation Intermediaries

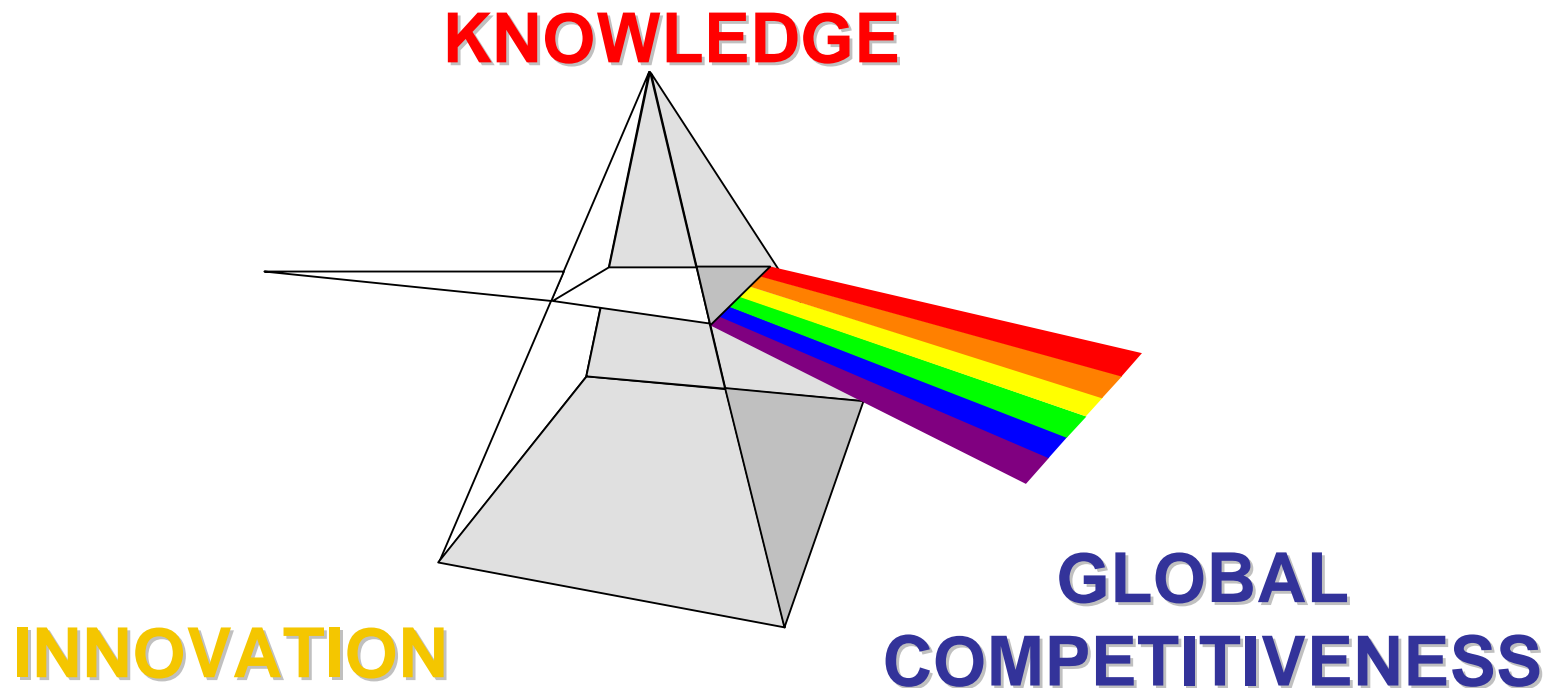
June 25-26, 2009 - Helsinki, Finland

Richard A. Bendis

President and CEO - Innovation America



Innovation Economy



“If a man empties his purse into his head, no man can take it away from him. An investment in knowledge always pays the best interest.”

--Ben Franklin

Knowledge Economy: Definitions & Terminology

- Knowledge is the confident understanding of a subject, potentially with the ability to use it for a specific purpose
- Knowledge economy is based on creating, evaluating, and trading knowledge
- Innovation is the creation and transformation of knowledge into new products, processes, and services that meet market need

Goals of Innovation-Based Economic Development

Intervene at the margins of private sector investment flows of capital (financial and intellectual) to:

- Address economic transition
- Capture the benefit of investments in research and development, higher education
- Build entrepreneurial cultures
- Help existing industries modernize
- Diversify economy
- Develop global innovation network

Implementing a New Innovation Paradigm

- Willingness to deviate from traditional and parochial perspectives
- Encourage public investment and risk taking
- Developing trust through collaboration
- Ensuring the paradigm is responsive to partners' missions
- Building consensus of all constituents through education, participation, and positive outcomes
- Move from technology-based economic development to **Innovation-Based Economic Development**

Traditional ED vs. Innovation-based ED

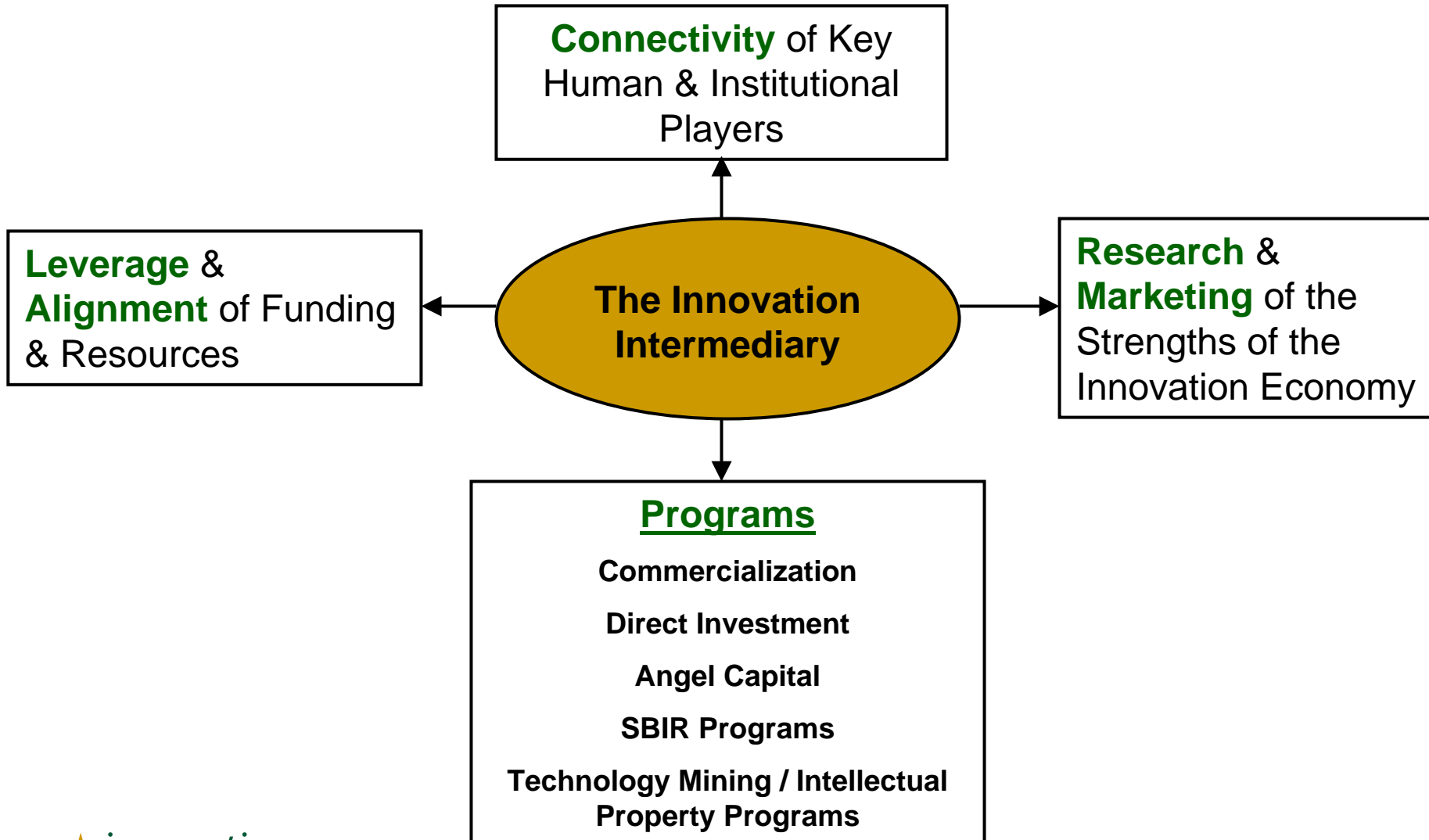
	<u>Traditional ED</u>		<u>Innovation-based ED</u>
• Competitive Basis	Natural resources Highways / Rail Proximity Costs	➔	Specialized talent Networks, information University research / professors Market understanding
	i.e. PHYSICAL		i.e. KNOWLEDGE
• Key values / offerings	Business parks Incentives	➔	Access to research Workforce competencies Lifestyle
• Lead Organization	Chambers / EDCs	➔	Innovation intermediaries, Economic developers

What is an Innovation Intermediary

- An Organization at the Center of the region's, state's or country's efforts to align local technologies, assets and resources to work together on advancing Innovation.



21st Century Innovation Intermediary



Innovation Intermediary Commercialization Structure

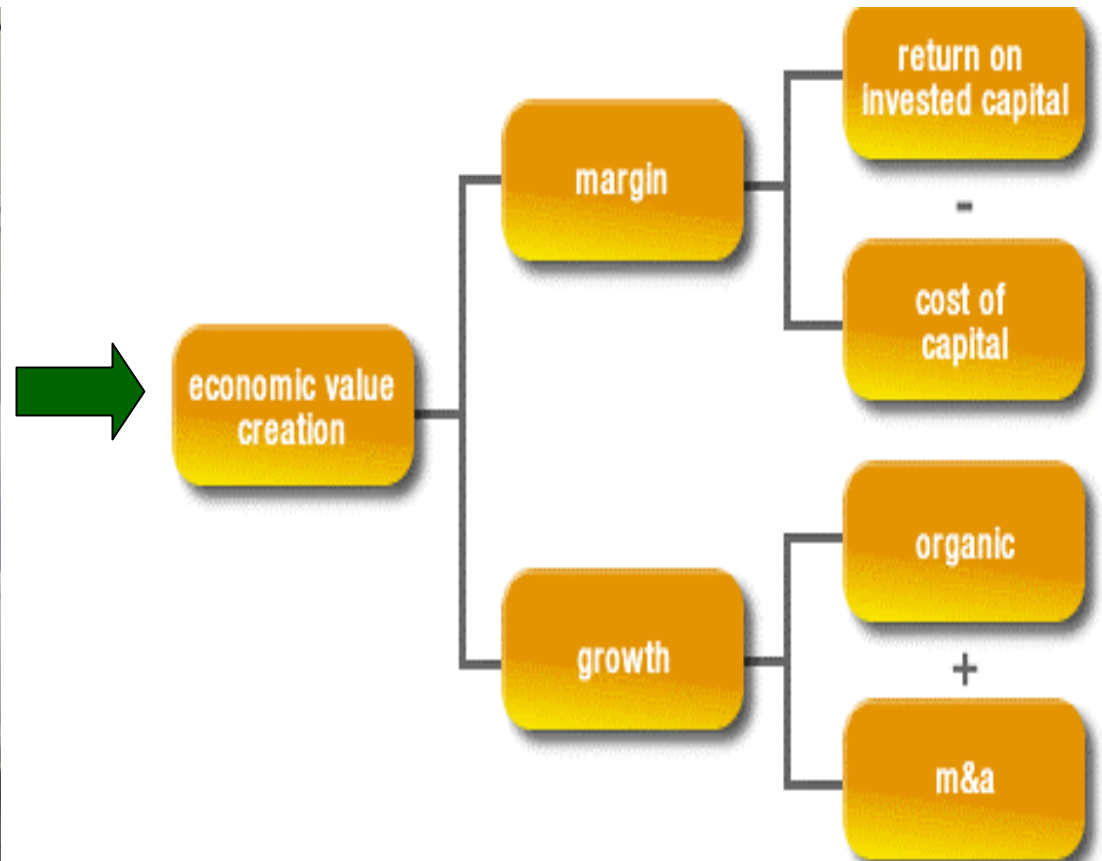
Investigation	Technical	Market	Business
Proof of Concept	Technology Concept Analysis	Market Needs Assessment	Venture Assessment
Development Phase			
Feasibility	Technology Feasibility	Market Study	Economic Feasibility
Planning	Engineering Prototype	Strategic Marketing	Strategic Business Plan
Introduction	Pre-Production Prototype	Market Validation	Business Start-Up
Commercial Phase			
Full Scale Production	Production	Sales and Distribution	Business Growth
Maturity	Production Support	Market Diversification	Business Maturity

Innovation Paradigm Shift

PROOF OF CONCEPT

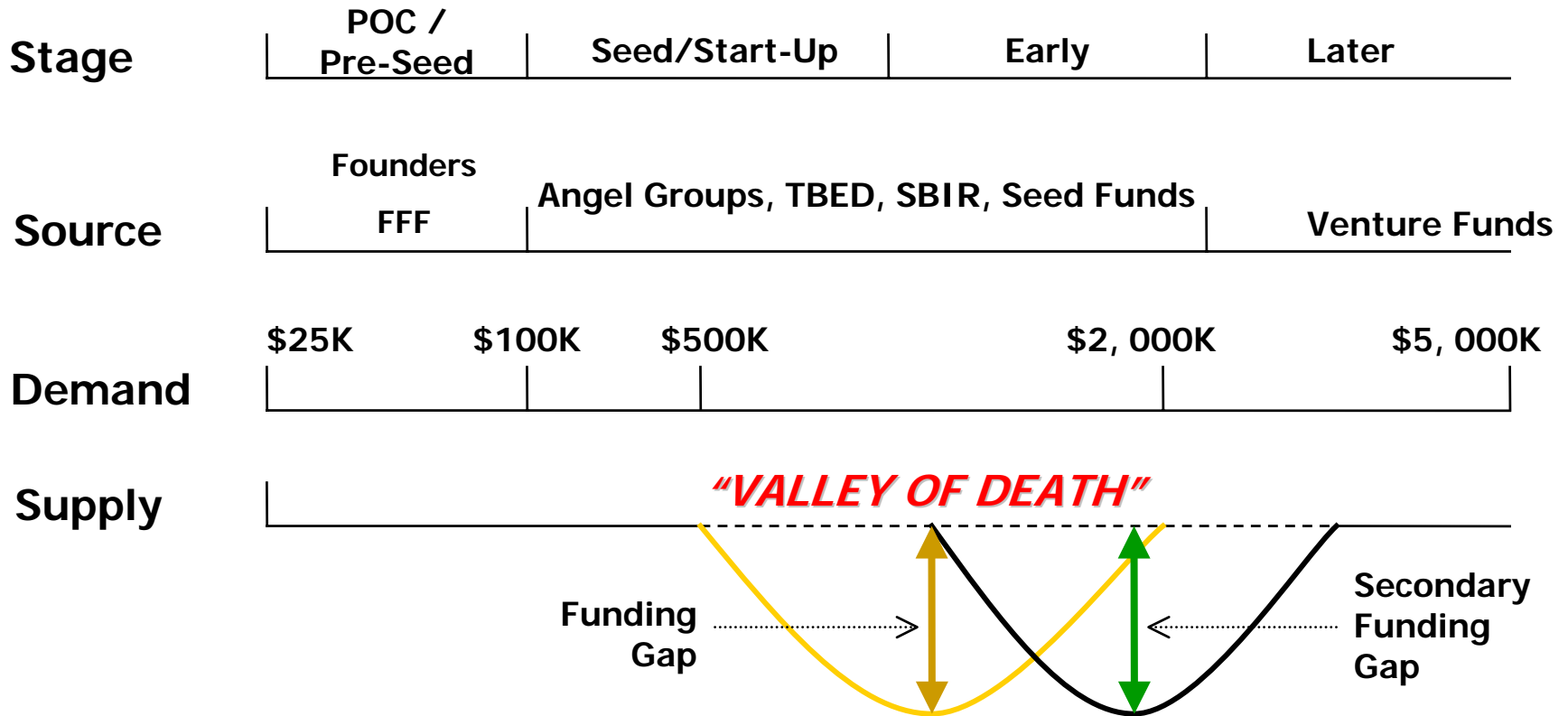


PROOF OF RELEVANCE

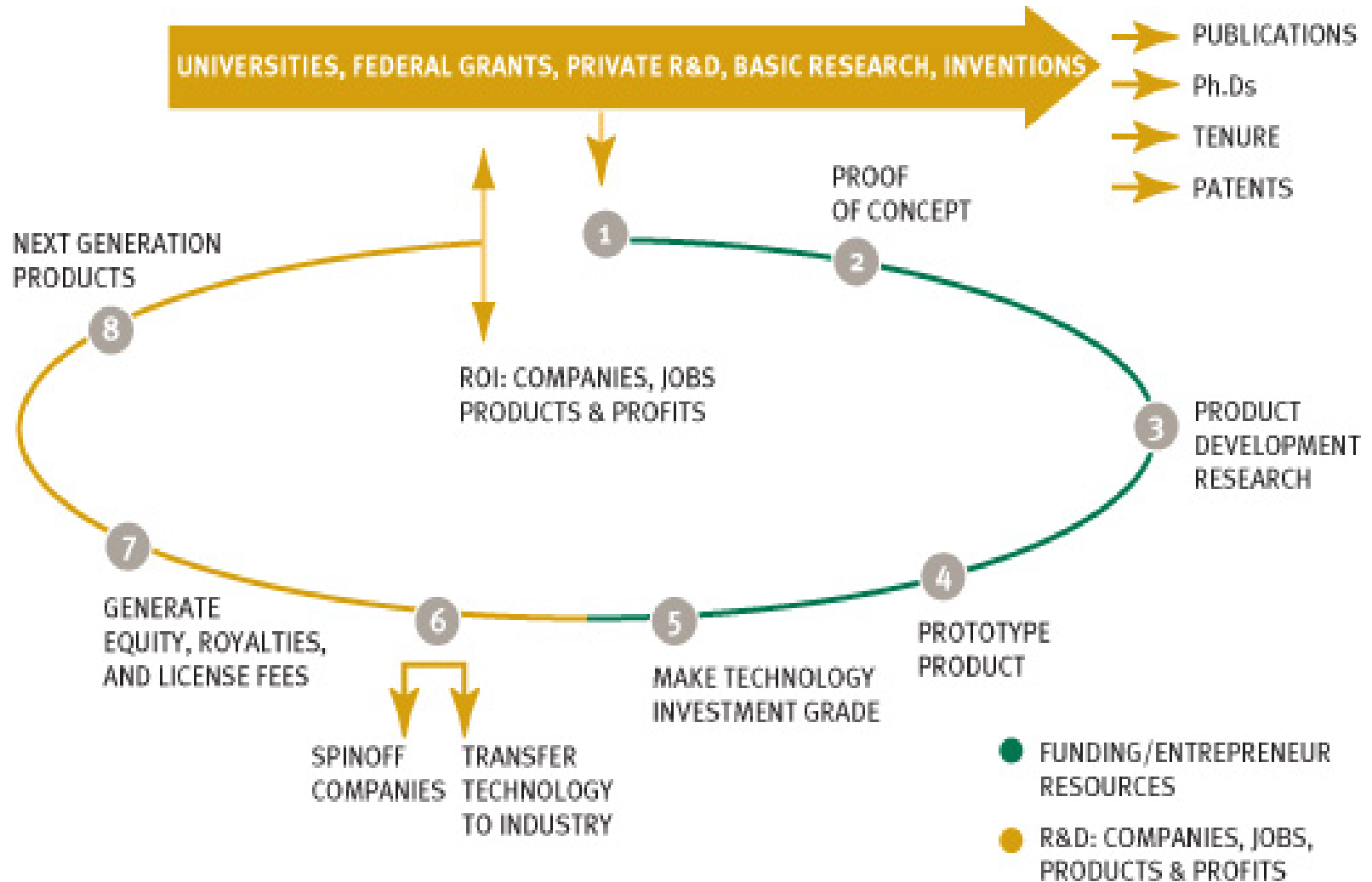


Innovation Capital Valley of Death

“VALLEY OF DEATH”



Commercialization Model



The Funding Gap Deepens

REDUCED ANGEL ACTIVITY

- Angel Investors reduced their investments by over 26% in 2008
- Availability of investment capital among angels decreased dramatically by 40% in 2008

VENTURE FUNDING MOVING DOWNSTREAM

- The average investment by venture firms last year was \$8.3 million per investment and only about 4% of the capital went to early-stage companies
- First Quarter of 2009 was the worst quarter in 12 ½ in terms of total capital invested by venture firms

STATE TECH-BASED ECONOMIC DEVELOPMENT

- Budgets decreasing

U.S. Innovation Intermediaries' Best Practices

- ☆ Ben Franklin Technology Partners (BFTP, 1982)

<http://www.benfranklin.org/>



- ☆ Innovation Philadelphia (IP, 2001)

<http://www.innovationphiladelphia.com/>



- ☆ Kansas Technology Enterprise Corp. (KTEC, 1987)

<http://www.ktec.com/>



- ☆ University City Science Center (UCSC, 1963)

<http://www.sciencecenter.org>



- ☆ UCSD Connect (1985)

<http://www.connect.org>



- ☆ Global Connect (2003)

<http://globalconnect.ucsd.edu>



National Best Practices, Common Attributes

- Longevity
- Bipartisan Support & Champions
- Independent Organizations
- Continuous Reinvention
- Private Sector Involvement
- Understand Return On Investment
- Sustainability In Funding
- Accountable
- Innovative
- Effective Leadership



pennsylvania
DEPARTMENT OF COMMUNITY
& ECONOMIC DEVELOPMENT

Technology Investment

Pennsylvania's Innovation Intermediary

Mission

The mission of the Technology Investment Office is to serve as a catalyst for growth and competitiveness for Pennsylvania companies and universities through technology-based economic development (TBED) initiatives including funding, partnerships and support services.

Our Goal

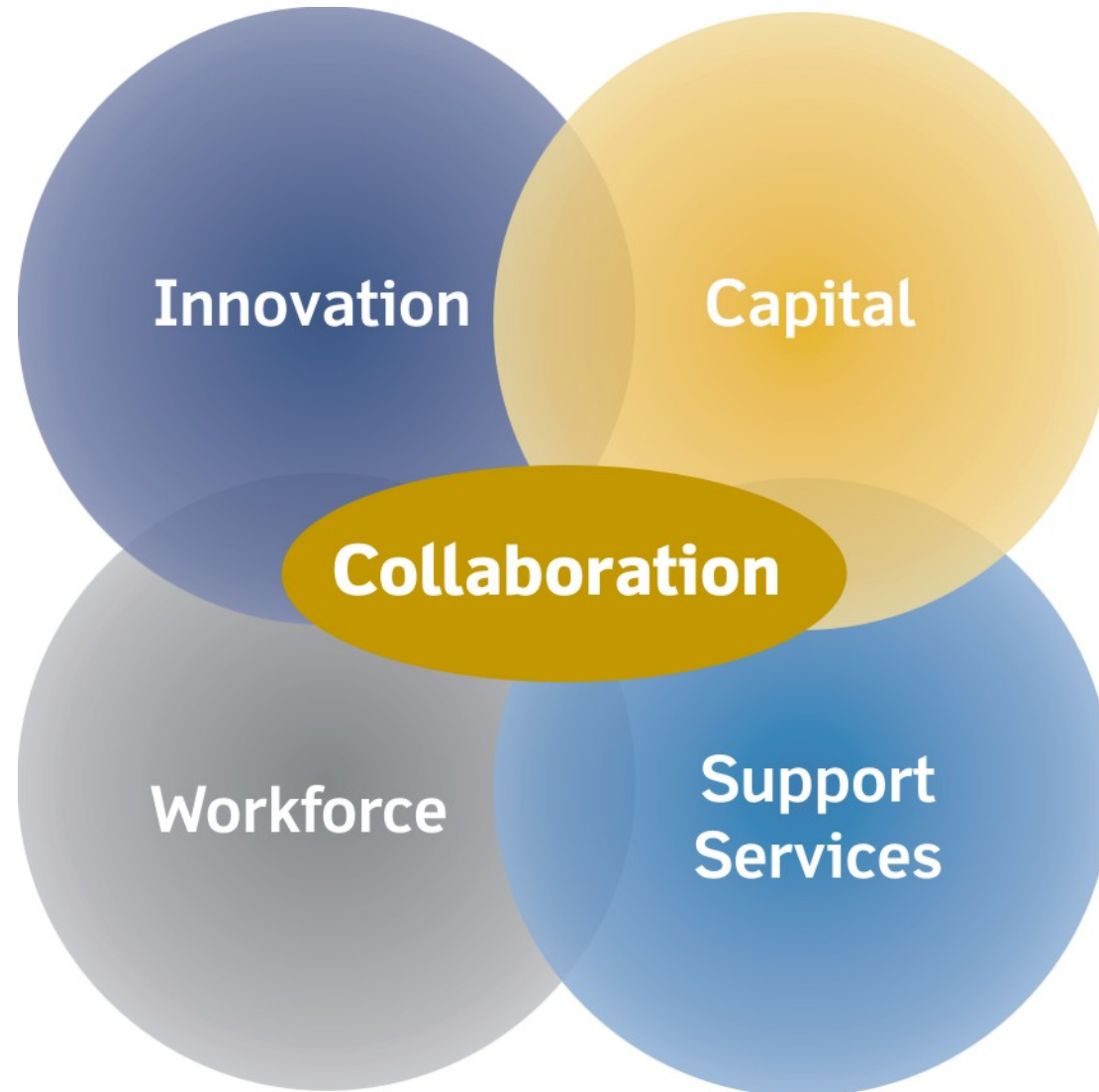
- The goal of the Technology Investment Office is to ensure that the variety of TBED organizations and initiatives located throughout the Commonwealth are working collaboratively to fully leverage the wealth of research, capital sources, and support services available to build a comprehensive infrastructure that supports company growth.

Our Customers

- Pre-revenue, emerging and mature technology companies
- Universities engaged in R&D that can be commercialized
- Community organizations focusing on technology infrastructure, training and facilities
- Investment partners

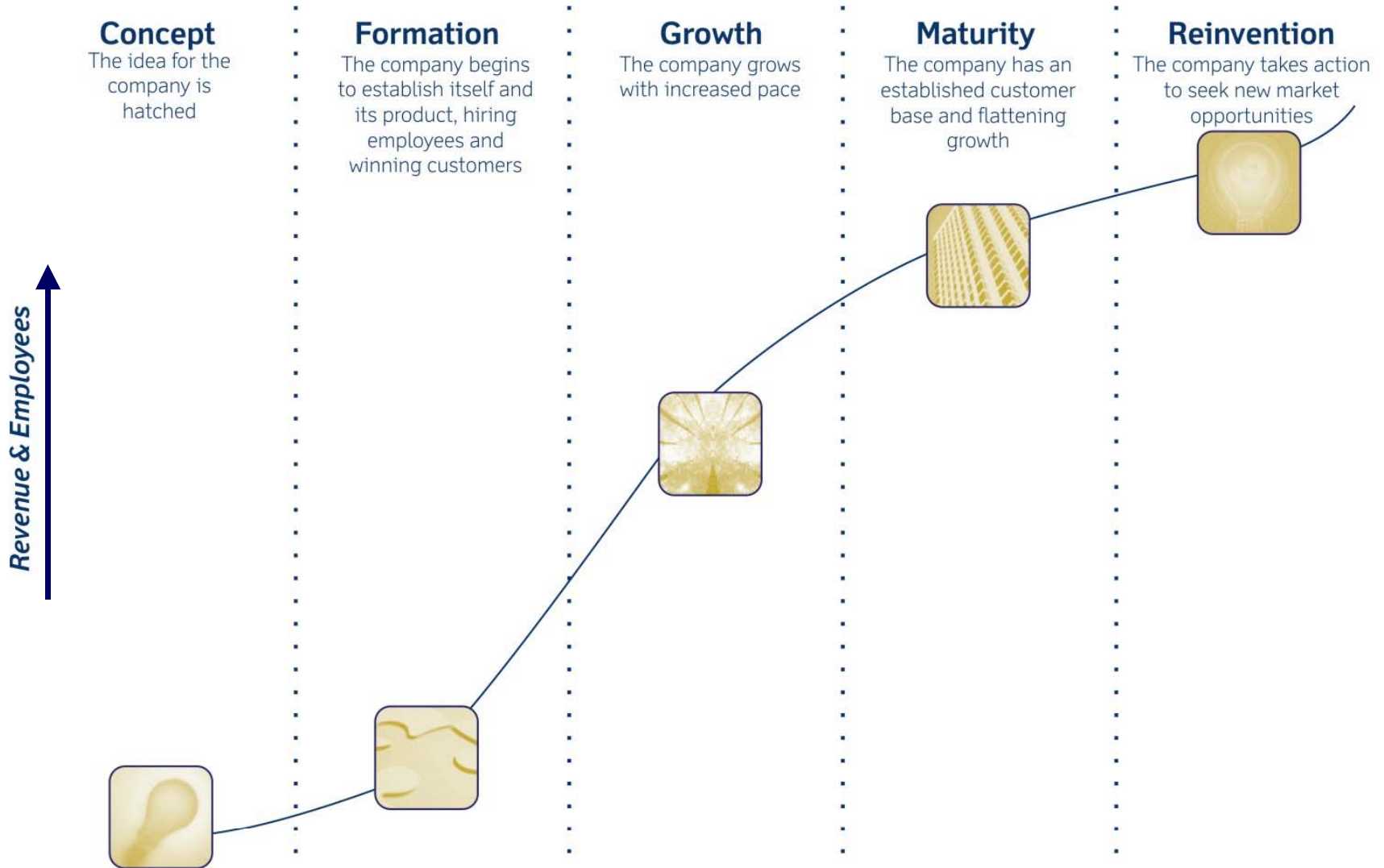


The Four Pillars of Innovation-based Economic Development



Technology Investment

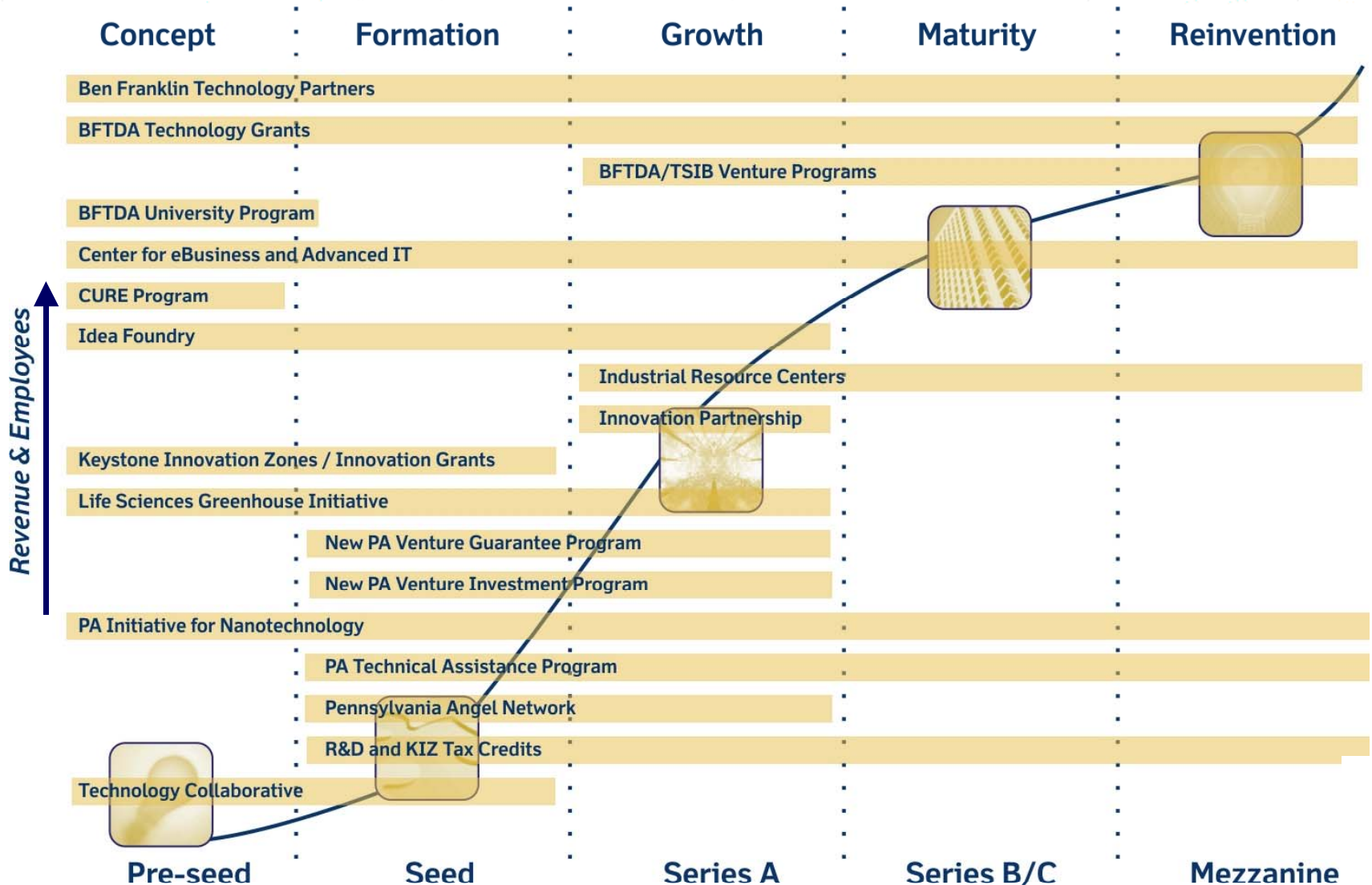
> ready > set > succeed



Technology Investment

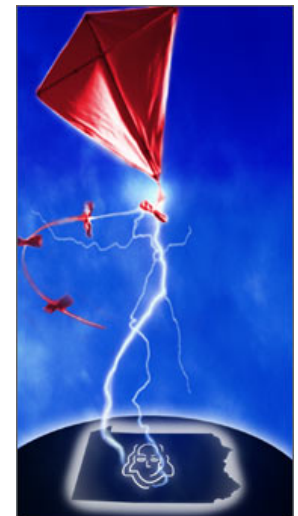
Technology-based Economic Development Tools Along the Continuum

> ready > set > succeed



Ben Franklin Technology Partners

- Established in 1982 to stimulate economic growth through innovation, entrepreneurship, and the development and adoption of new technologies.
- BFTP operates on a Regional level through four centers strategically located throughout PA , with offices in Pittsburgh, State College, Bethlehem, and Philadelphia.
- Every dollar invested in BFTP yielded nearly \$23 of additional income in the state.
- BFTP generated 93,105 job-years at a cost to PA of \$3,342 per job-year*.
- The state garnered more than \$400 million in additional tax revenue as a direct result of the program, which more than covered the operating costs of the program over the same period.
- BFTP boosted Pennsylvania's economy by \$8 billion.
- Web site – www.benfranklin.org



Kansas Technology Enterprise Corporation



www.ktec.com

KTEC Mission:

“To create, grow and expand Kansas enterprises through technological innovation.”

What is KTEC?

- A quasi-private entity created by legislation in the State of Kansas in 1986
- A holding company which manages a portfolio of programs, investments, subsidiaries & affiliates which operate as for-profit and not-for-profit entities
- An equity or royalty investor in emerging Kansas technology businesses
- 20-member industry-led board of directors comprised of stakeholders representing the legislature, government, universities and the private sector
- In addition to its enabling legislation, KTEC operates under corporate bylaws similar to a private corporation
- KTEC is managed by a professional technology management team

Board of Directors

KTEC Program Structure

KTEC Staff

Federal Initiatives and Partnerships

Research

For Inventors, Entrepreneurs and
University & Industry Scientists

- Advanced Manufacturing Institute (AMI)
- Kansas Polymer Research Center (KPRC)
- Information Technology & Telecommunications Center (ITTC)
- Higuchi Biosciences Center (HBC)
- National Institute for Aviation Research (NIAR)
- EPSCoR

Investments

For Inventors, Entrepreneurs and
New & Existing Companies

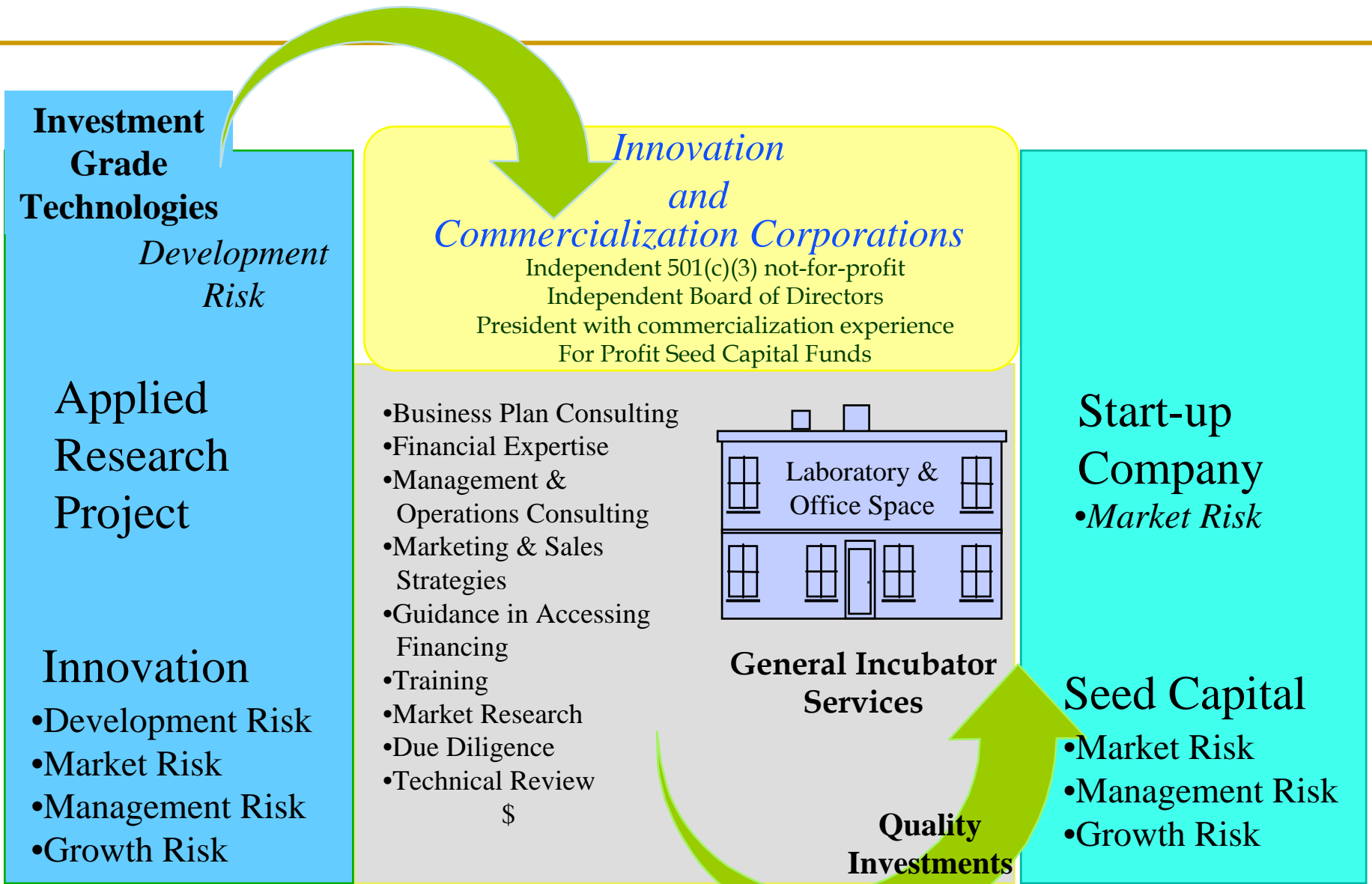
- Small Business Innovation Research (SBIR) Awards
- SBIR Bridge Funding
- State-Sponsored SBIR
- Applied Research Matching Fund (ARMF)
- ACE-Net
- Ad Astra Funds I & II
- Kaw Holdings (KIC)
- Wichita Ventures (WTC)
- Manhattan Holdings (MACC)
- Prairie Investments
- Quest Ventures
- KU Medical Center Research Institute Pre-Seed Fund
- Alliance for Technology Commercialization

Business Assistance

For Inventors, Entrepreneurs, Scientists
and New & Existing Companies

- Kansas Innovation Corporation (KIC)
- Mid-America Commercialization Corporation (MACC)
- Wichita Technology Corporation (WTC)
- Mid-America Manufacturing Technology Center (MAMTC)
- Capital for Manufacturers (CFM)
- Information Research Corp. (IRC)
- Kansas Integrated Commercialization Information Network (KICIN)
- Intern Program
- Business Residency Program
- Inventor Development Assistance Program (IDAP)

ICC's Expand the Life Cycle





SCIENCE
CENTER™



The Science Center

- **Founded in 1963 – 46th Anniversary**
- **Non-Profit organization**
- **Largest & Oldest Urban US Science Park**
- **17 acres, 15 buildings – over 2 million sq. ft. of laboratory and office facilities**
- **56,000 sq. ft. of state-of-the-art incubation facilities (effective 9/1/08)**
- **Wet-Dry Lab & Office Facilities**
- **Lab equipment & access to academic collaborations**
- **Birthplace of 400 + companies employing today 29,000 with annual revenues of \$9 billion +**
- **SC Campus has 100 tech-based, 7500 employees that work in healthcare, technology & research institutions**
- **Campus expansion plan – 2.0 million sq. ft. to 3.5 million sq. ft.**



Science Center Research Park

The facilities at the Science Center serve as:

- A physical hub, bringing together entrepreneurs, scientists, and established businesses with the resources they need.
- Science Center facilities include almost 2,000,000 square feet of space dedicated to the advancement of life science and technology companies.
- It ranges from incubator space with fully-equipped laboratories to “plug ‘n play” offices for entrepreneurs, to customized tenant office space.



Soft Landing Innovation Center



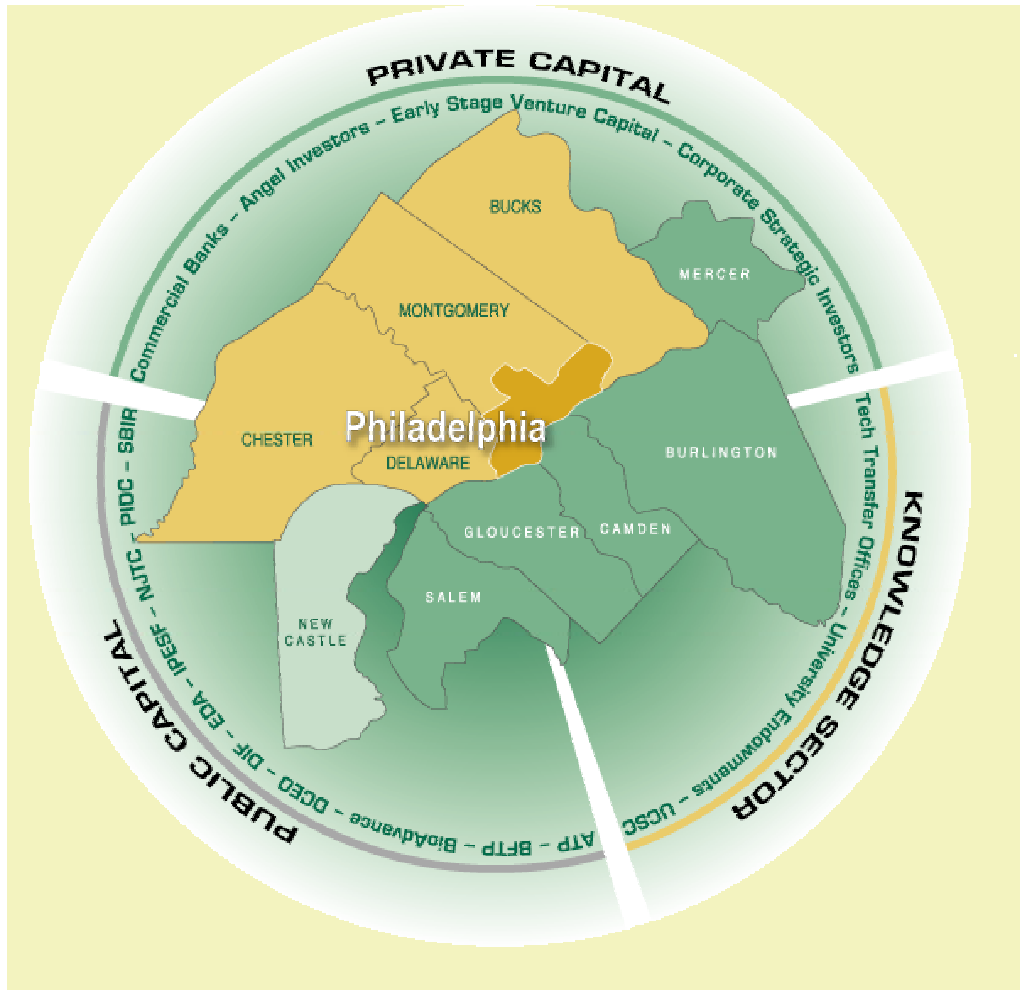
The Science Center is an attractive “soft landing” place for international companies to launch their US businesses and a powerful economic engine for the regional economy.

Science Center Global Soft Landing

- Established in 2005
- Focus on Asia and Europe
- Country site visits: Greece, India, China, Malaysia, Italy, South Korea, Germany, Ukraine, Turkey, Spain, and more.....over 75 site visits
- Relationships with JETRO (Japan), Rhone/Alps Region (France) & Belgium Trade Office (Wallonia Foreign Trade & Investment), Spain, UK and Germany
- Project funded by U.S. Department of Commerce - EDA
- \$2.5M project for construction and facility programs
- 10,000 sq. ft. of wet laboratory and offices



Innovation Philadelphia: Leveraging the Resources of the Greater Philadelphia Region



3 states
11 counties

- ❖ **Pennsylvania:** Bucks, Montgomery, Philadelphia, Chester, Delaware
- ❖ **New Jersey:** Mercer, Burlington, Camden, Gloucester, Salem
- ❖ **Delaware:** New Castle

Innovation Philadelphia's Mission



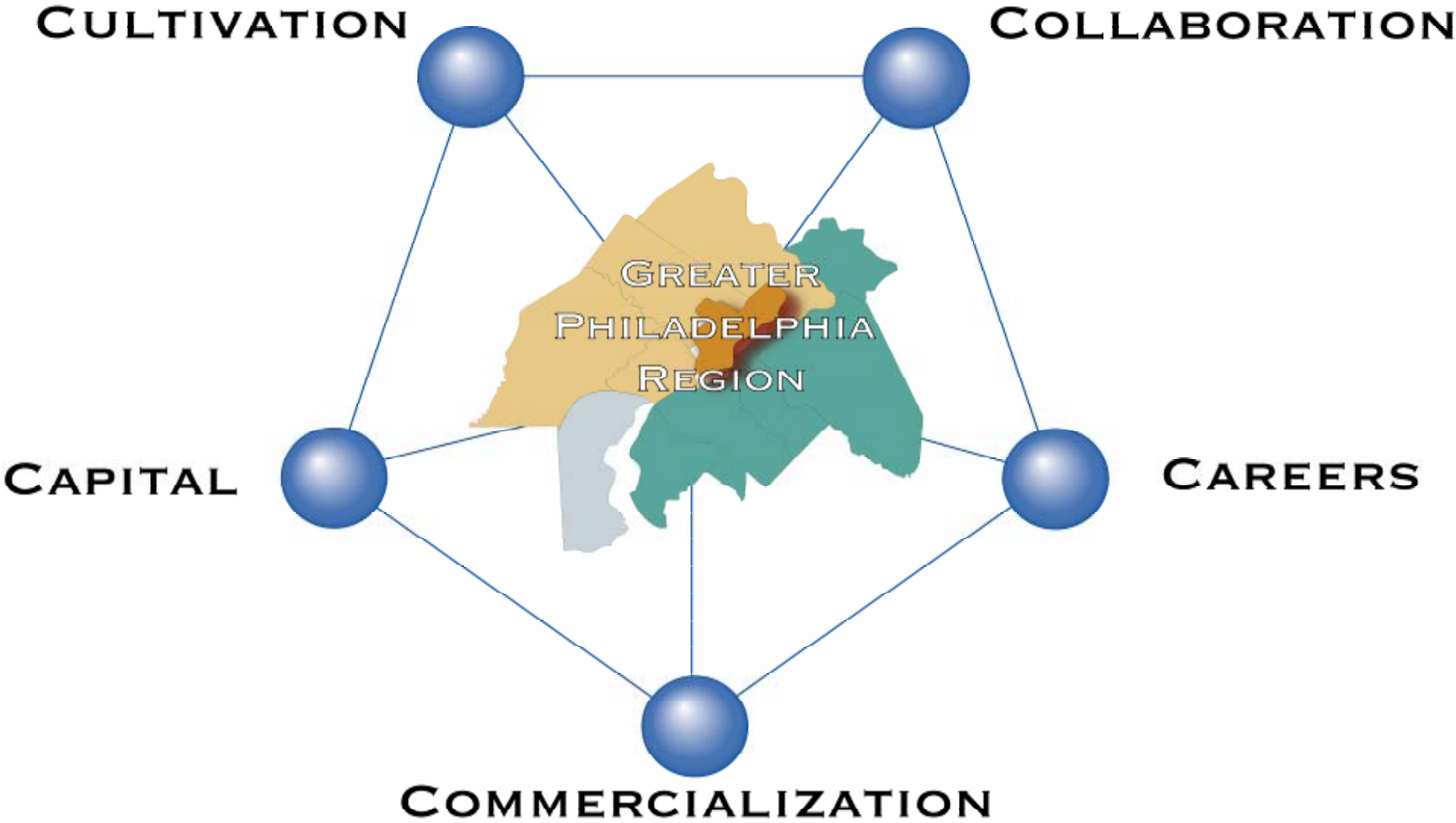
A Public/Private Partnership
created to:

Grow the
Wealth and
Workforce of the
Greater Philadelphia Global
Innovation Economy

Innovation Philadelphia's Strategic Goals

- Increase the **INVESTMENT** in knowledge-based companies
- Increase the **KNOWLEDGE** Economy workforce
- Foster and **LEVERAGE** Regional **COOPERATION** to Accelerate Technology **COMMERCIALIZATION** and Wealth Creation
- **BRAND** and market the Greater Philadelphia Region
- Promote **SUSTAINABLE** economic development
- Increase the Number of **INNOVATION-BASED COMPANIES** in the Greater Philadelphia Region

Innovation Connectivity



IP Core Products / Services

Investment



Commercialization



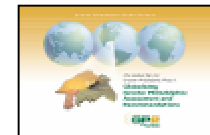
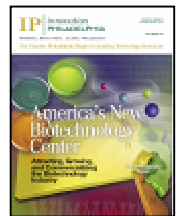
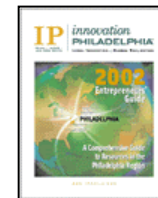
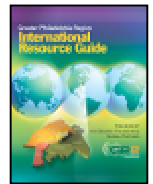
World's Best
Technology Network



Global & Regional Workforce / Economic Development



Branding, Research & Marketing



Why SBIR & Federal R&D Programs?

- **Over \$2.0 Billion available of SBIR funds over \$50 Billion in other federal R&D programs!**
- **Not a loan – no repayment**
- **Provides recognition, verification & visibility**
- **Potential leveraging tool to attract VC/other sources of \$\$\$**
- **Fosters partnerships (e.g., large corporations, academia)**
- **Small business concerns are recognized as a unique national resource of technological innovation**
- **Intellectual property rights are normally retained by the small business**
- **Provides money to fund high risk projects**
- **Creates jobs and generates tax revenues**

Research Dollars Program



- Research Dollars connects entrepreneurs to federal grant money, providing financial grants and technical assistance, as well as research support to early-stage technology companies.
- Federal grant programs such as Small Business Innovation Research (SBIR), Small Business Technology Transfer (STTR) and Technology Investment Program(TIP) are the focus of this web-based program.
- IP's Research \$ companies are twice as successful as the national average.
- Research Dollars transferred to the Innovation Partnership in 2006

Innovation Partnership



- Opportunity to tap into more than \$2B available SBIR/STTR funds and over \$50B in other federal R&D programs annually.
- Outreach/education
- Proposal Preparation Reviews
- Microgrants



Innovation Partnership

Founding Partner Organizations



Associate Partner Organizations



Innovation Partnership Accomplishments – Year 1

- IPART has assisted more than **197** portfolio companies to win more than **\$1.9 million** in federal research and development grants.
- IPART has provided **91** micro-grants valued at more than **\$350,000** to Pennsylvania companies.
- IPART leverage is **4:1**.
- The IPART award to proposal ratio is **21%**.
- Outreach and marketing to more than **1,000** small businesses and university representatives.

World's Best Technology Network



Cumulative Funding Per Deal	Cumulative Funding Per Deal	Total Annual Deal Funding Available
Ben Franklin	Up to \$750K	\$3M
BioAdvance	Up to \$1M	\$5M
Science Center	Up to \$500K	\$3M
IP (ESF)	Up to \$100K	\$500K-1M
MAG	Up to \$250K	Up to \$1M
IPART & IP SBIR Program	Up to \$750K	Up to \$13M



- Regional Branding & Marketing
- Common Investment Review Process
- Shared Due Diligence



IP's International Accomplishments

- Attracted and hosted a United Nations (U.N.) Conference in December 2003, the first U.N. Conference in the United States to be held outside of Washington D.C. or New York.
- United Nations Educational, Scientific and Cultural Organization (UNESCO) has opened an office in Philadelphia.
- Signed a Memorandum of Understanding to strengthen cultural, educational, economic and trade ties between the cities. The two cities have agreed to exchange information, organize conferences, invite each other to participate in events, and take steps for both sides to realize the benefits of the agreement, including increased trade, foreign direct investment, and tourism.



Greater Philadelphia Global Partners



GP2 strives to strengthen the Greater Philadelphia Region's global interaction and outreach through connectivity and collaboration.

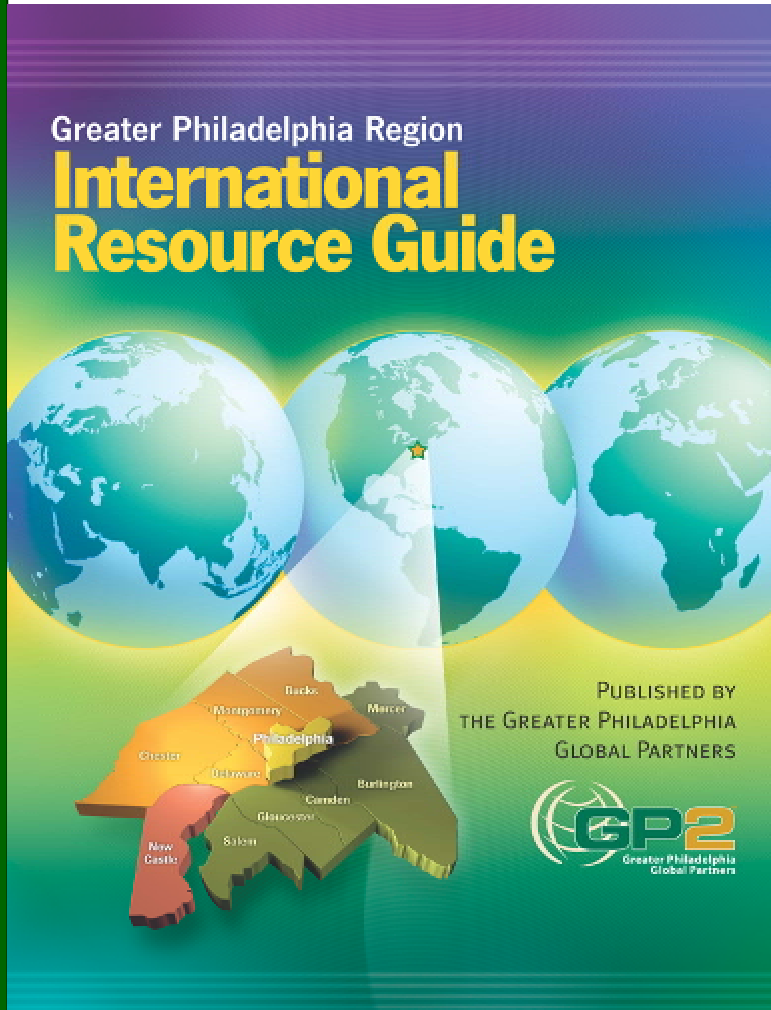


Why GP2 was Created?

GP2 was created to foster collaboration and connectivity between internationally-focused organizations in order to initiate and grow:

- International Trade
- Foreign Direct Investment
- International Travel and Tourism
- Immigration
- Cultural, Educational, and Scientific Linkages with
- Foreign Governments

GP2 Accomplishments



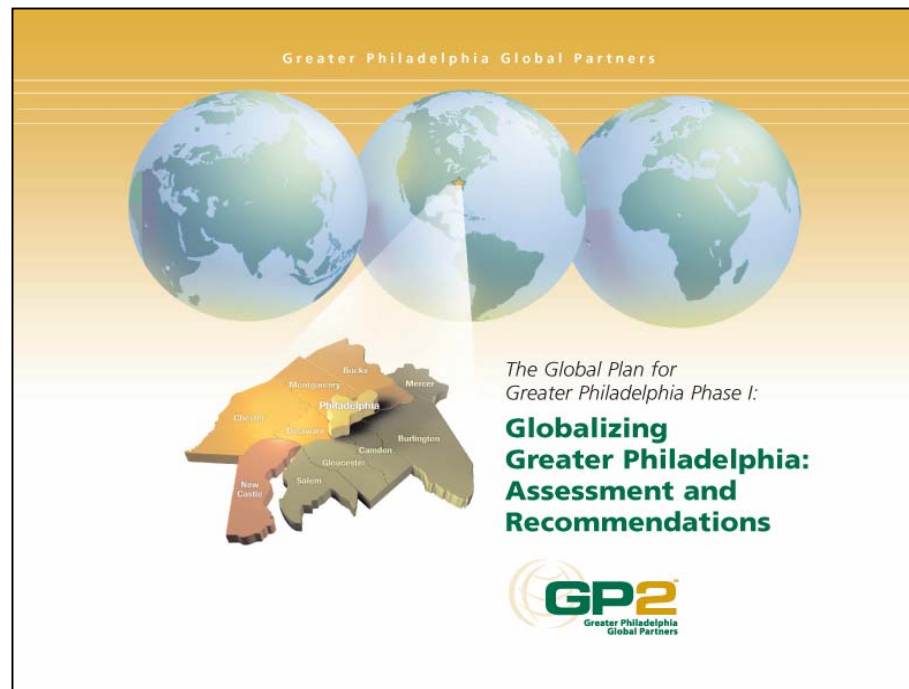
The Greater Philadelphia Region International Resource Guide includes more than 100 private and public Regional organizations whose goal is to serve the needs of the international community.

The Guide is available in print and online at www.GPTWO.com.

GP2 Accomplishments

Global Plan for Greater Philadelphia

Phase I: “Globalizing Greater Philadelphia: Assessments and Recommendations”



IP is Addressing the Flat World

Political Map of the World, April 2001

Australia: independent state
Bermuda: Dependency or area of special category
■: Capital
●: Major city
○: Minor city



Partners in International Innovation Development



ASSOCIATION OF
UNIVERSITY
RESEARCH
PARKS

Creating Communities of Innovation

<http://www.aurp.net/>



<http://www.asme.org/>



European Private Equity &
Venture Capital
Association

<http://www.evca.com/>



ANGEL CAPITAL ASSOCIATION
THE PROFESSIONAL ALLIANCE OF ANGEL GROUPS

<http://www.angelcapitalassociation.org/>



<http://www.nasvf.org/>



<http://www.eban.org/>

**Community Development
Venture Capital Alliance**

<http://www.cdvca.org/>



*The Association of
University Technology
Managers*

<http://www.autm.net/>



<http://www.astp.net/>



NBIA

NATIONAL BUSINESS INCUBATION ASSOCIATION

<http://www.nbia.org/>



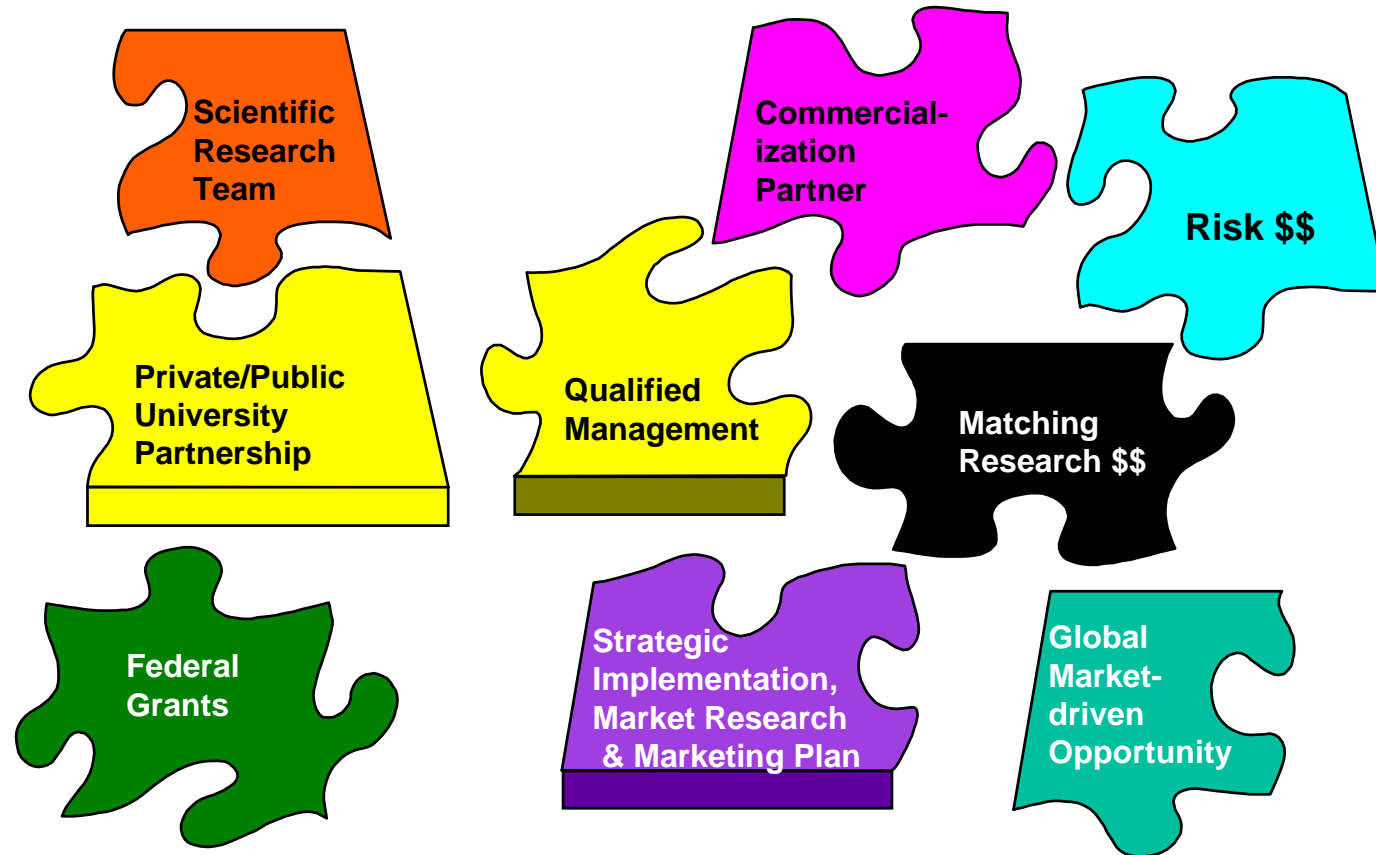
<http://www.ssti.org/>



<http://spice-group.net/>

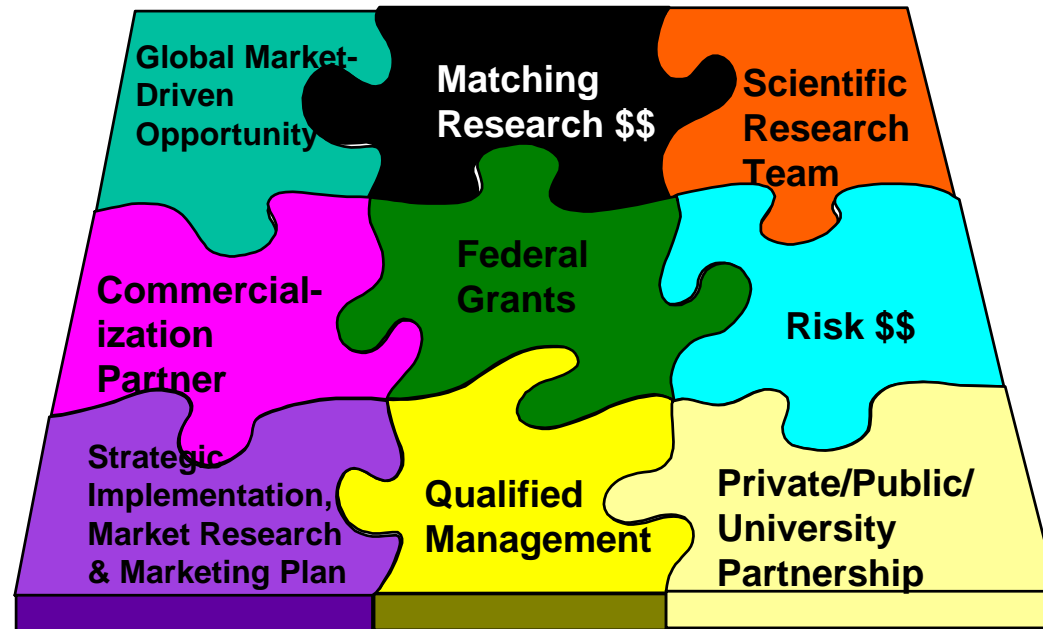


The Road from Basic Research to Commercialization



...has many complex pieces!

The Road from Basic Research to Commercialization



All of the puzzle pieces must come together early in order for the project to have any hope of commercial success



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