



**Growing Intelligent Communities
Through Effective Innovation Intermediaries**

October 6, 2009

Moncton, NB



Presented by:

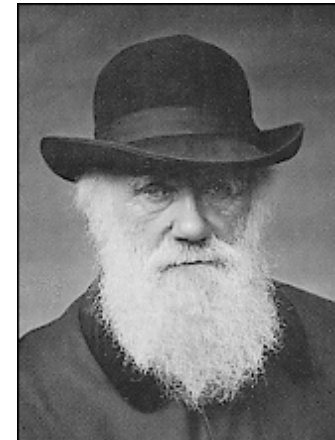
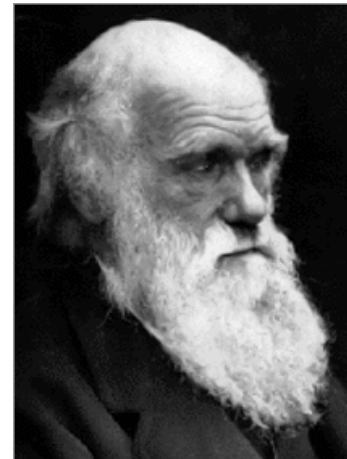
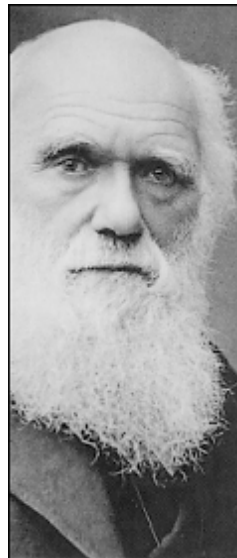
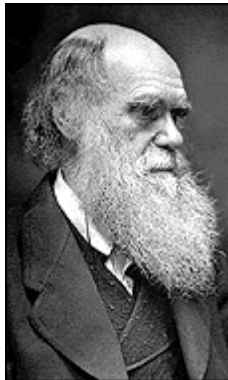
*Richard A. Bendis
President and CEO
Innovation America
October 5, 2009*



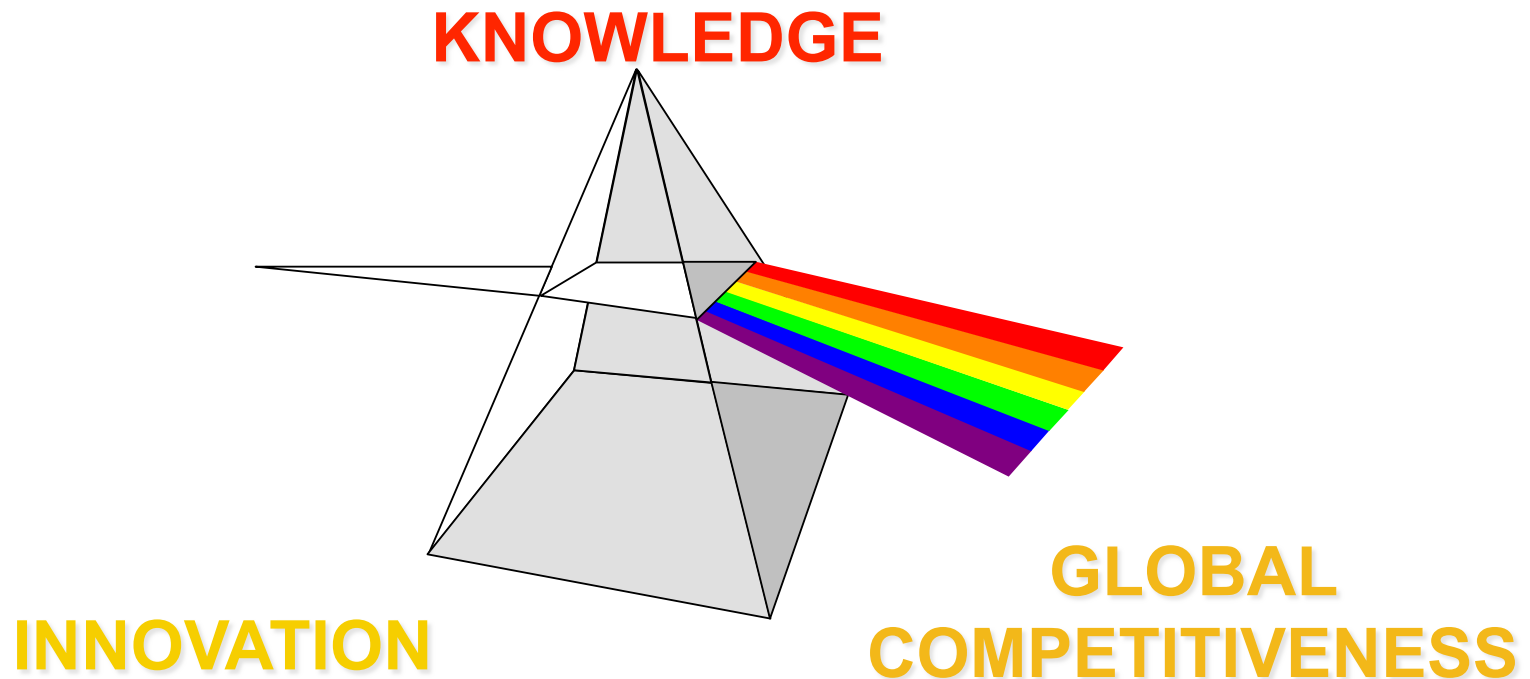
Change Is Inevitable

“ It is not the strongest of species that survive, nor the most intelligent, but the ones most responsive to change.”

-Charles Darwin



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.....and interactions, entertainment forms, and ways of communicating and collaborating

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

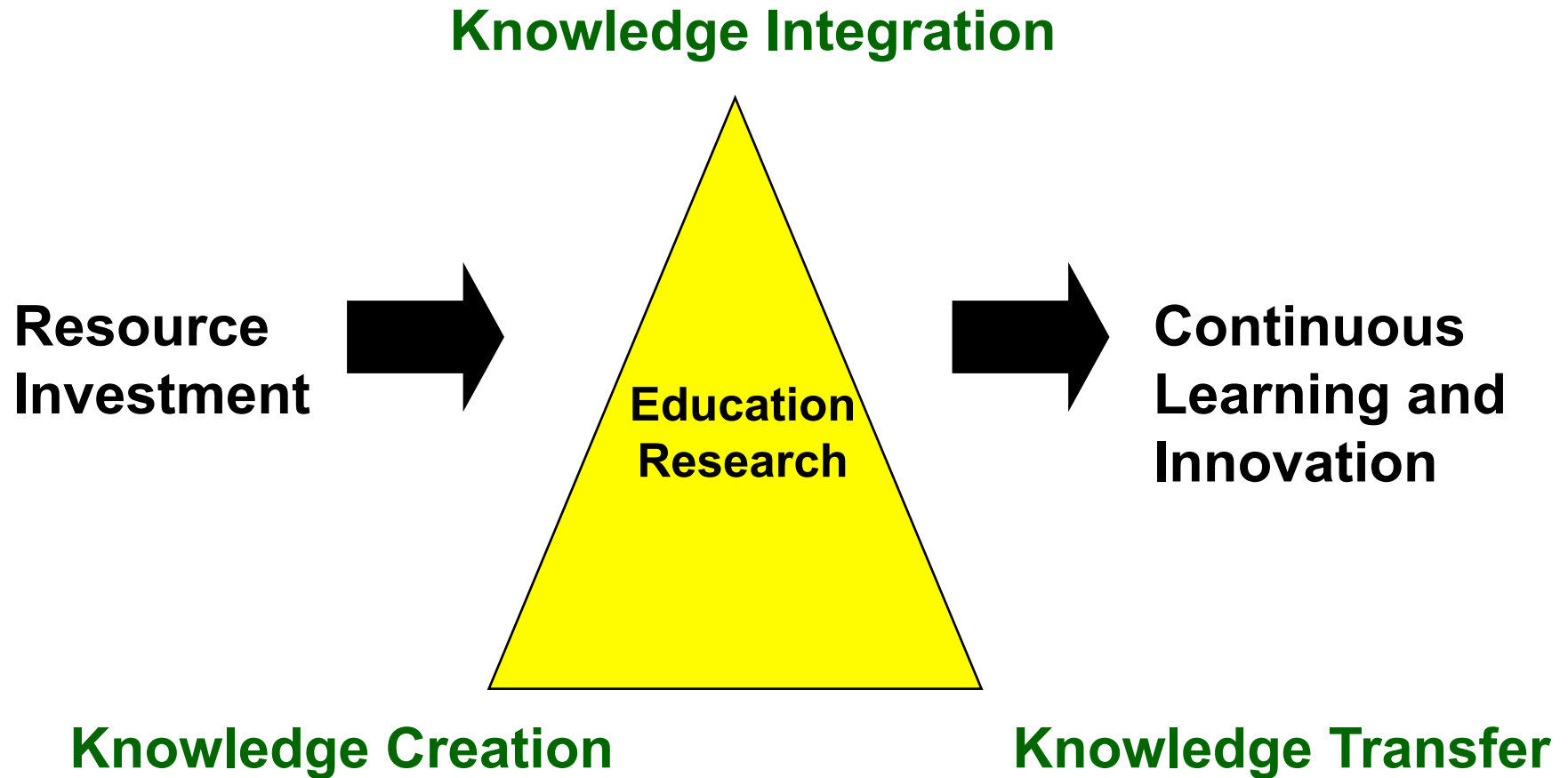
The Role of the Public Sector

- A healthy, educated public
- Job creation, economic health, and Knowledge Worker development
- World leadership in STEM (science, technology, engineering and mathematics) and innovation
- Improved environment quality and sustainable development
- Harnessed information technology
- Enhanced national security

Government's Role in S&T

- Long term vision and planning
- Identify gaps and trends in science and technology environment
- Be a catalyst through strategic investments and partnering
- Develop a balanced and flexible research and development investment portfolio
- Encourage private sector innovation
- Establish performance-based research and development

The Role of Academia



The Role of Industry: Wealth Creation

Capitalism is a Process

of

Creative Transformation

“The interaction of technological innovation with the competitive marketplace is the fundamental driving force in capitalist industrial progress.”

--Joseph A. Schumpeter, 1942

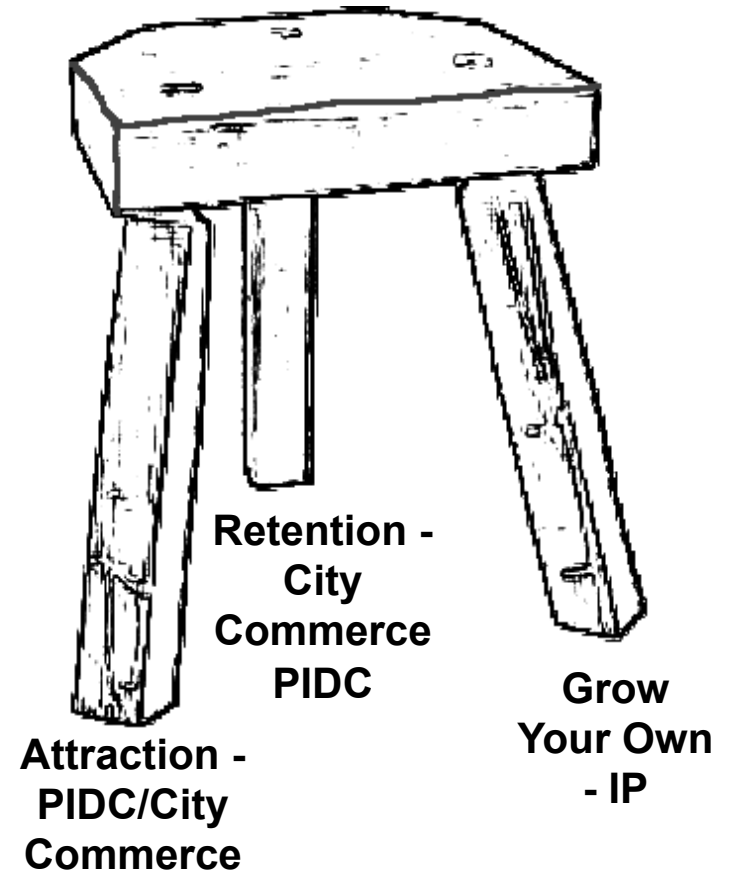
Public/Private Partnership

- Progress is promoted by strong industry, government and university leadership
- Sustained by dynamic public/private partnerships
- These leaders create new, responsive models of governance



Economic Development

- Economic Development is like a three-legged stool:
 - Attraction
 - Retention
 - Grow Your Own (Innovation Philadelphia's focus)
- TBED requires patience and persistence, continuity and consistency.
- Working with early-stage companies takes time.
- “If it worked in Philadelphia, it can definitely work in **Moncton**”



Traditional ED vs. Innovation-Based ED

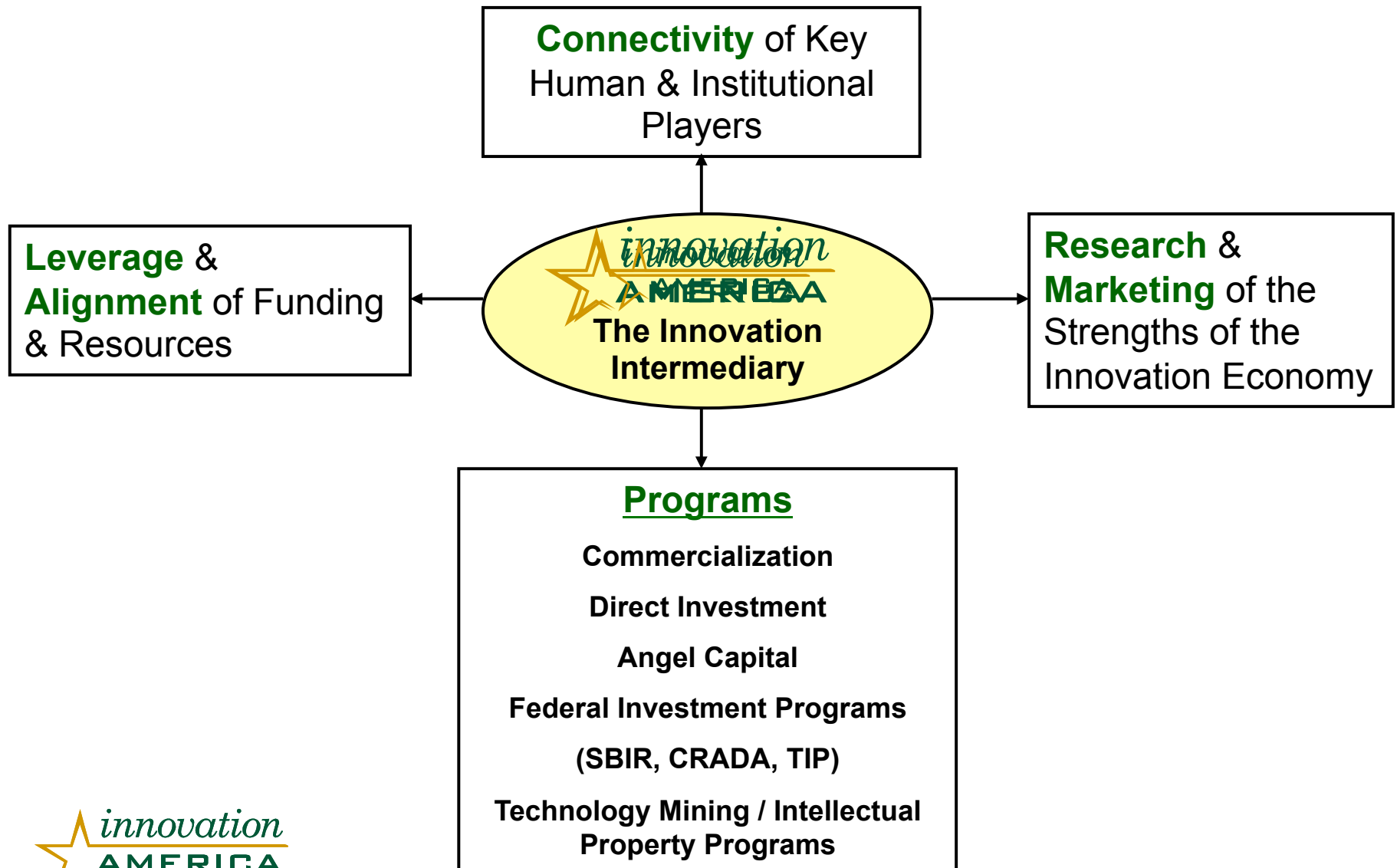
	<u>Traditional ED</u>		<u>Innovation-based ED</u>
• Competitive Basis	Natural resources Highways / Rail Proximity Costs	➔	Specialized talent Networks, information University research / professors Market understanding
	i.e. PHYSICAL		i.e. KNOWLEDGE
• Key values / offerings	Business parks Incentives	➔	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.

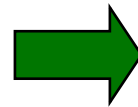


21st Century Innovation Intermediary

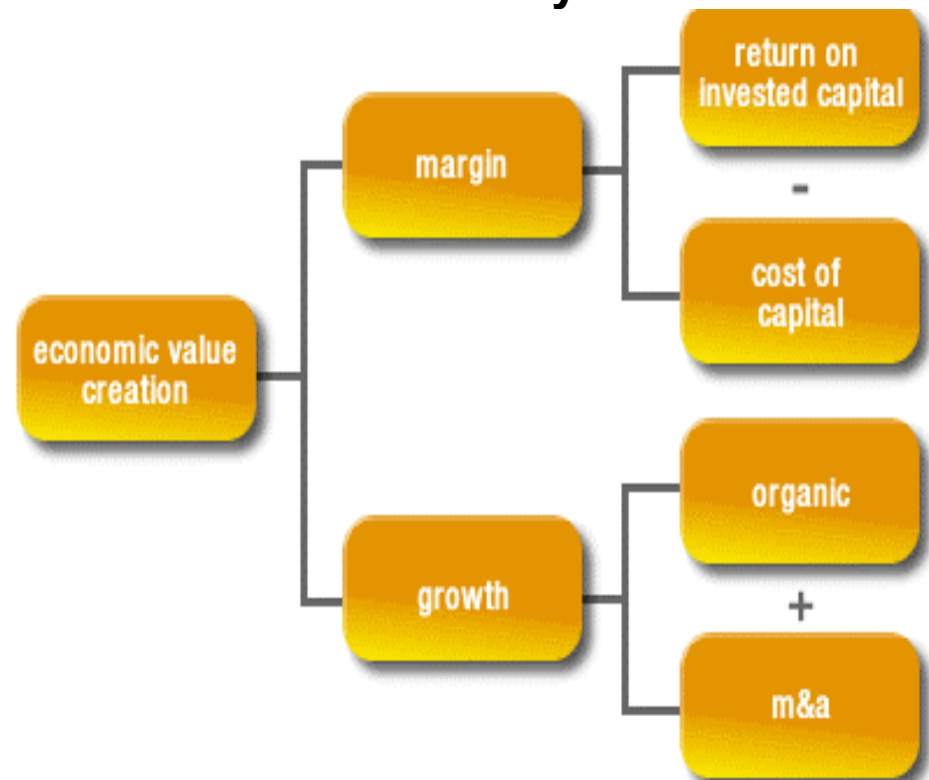


Innovation Paradigm Shift

PROOF OF CONCEPT
(Technological Feasibility)
“It Works!”



PROOF OF RELEVANCE
(Market Pull)
“I’ll Buy It”



Innovative Small Business Facts

- Innovative small business have generated 60 to 80 percent of net new jobs annually over the last decade
 - Employ 30 percent of high-tech workers, such as scientists, engineers, and computer workers
- SME's produce 13 times more patents per employee than large patenting firms
- Small Companies are a key source of innovation by themselves and for Large Companies

Source: Small Business Administration

Innovation Capital Facts

- Proof of Concept, Start-up, and Seed stage companies lack investment support
- Most Seed stage firms need investments of \$500K - \$2M
- The average venture capital investment today is \$8.3M

Source: PriceWaterhouseCoopers – MoneyTree©



“The Perfect Storm”

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 TBED Budgets Decreasing

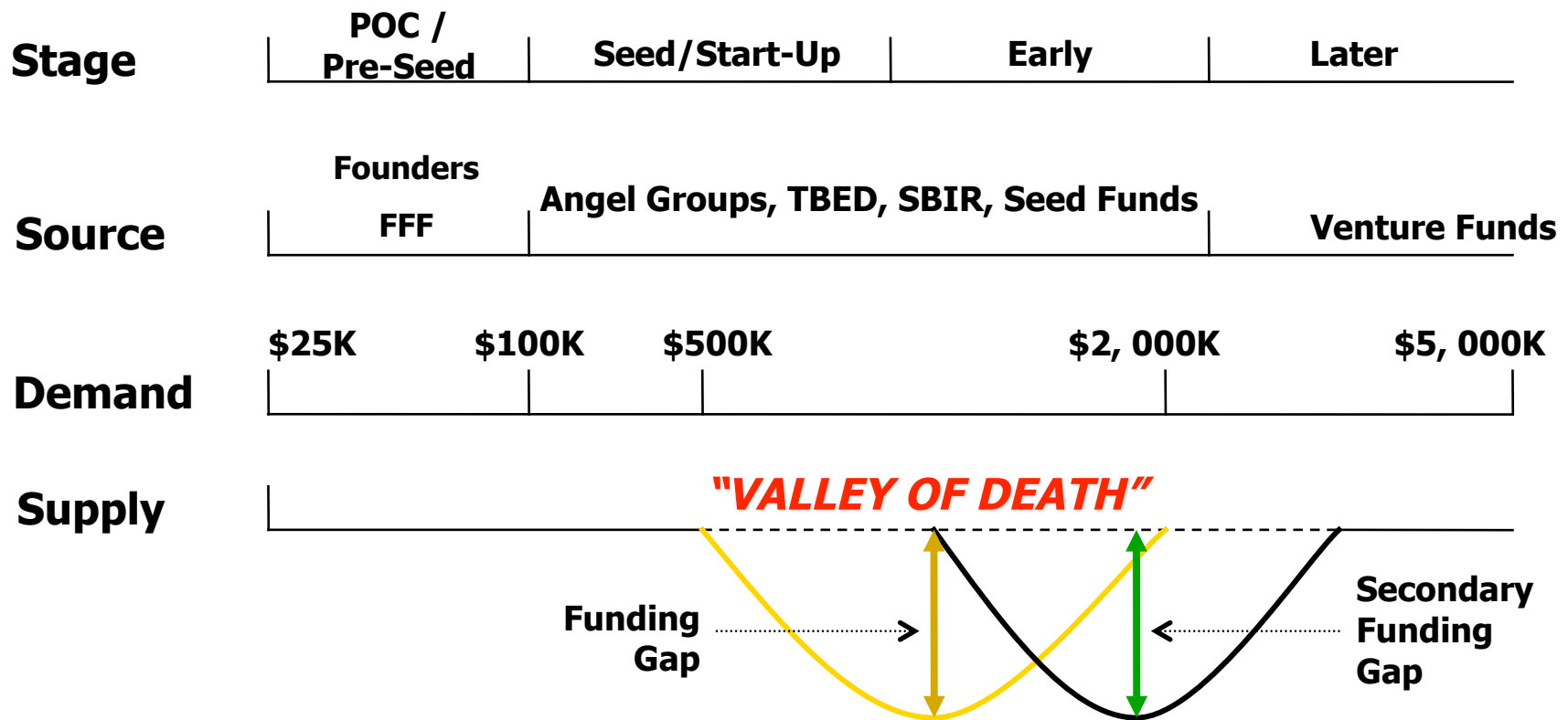
- 44 states have budget deficits

**NO SBIR RE-AUTHORIZATION &
TIP UNDERFUNDED**



Innovation Capital Valley of Death

“VALLEY OF DEATH”



Jobs! Jobs! Jobs!

**Does Seed Investing
REALLY
Create Jobs?**

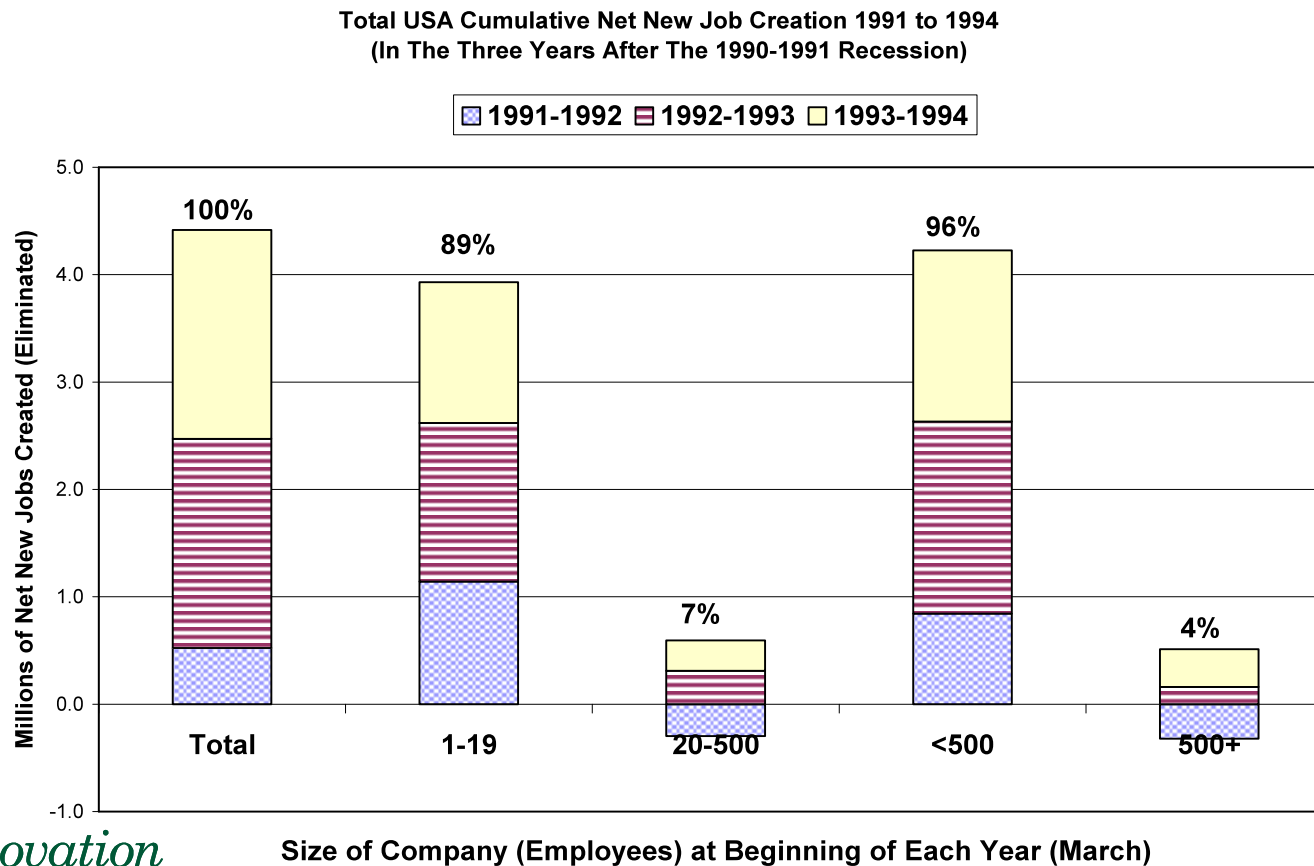


Public Investment Job Creation

	State of PA	CDVCA	Stimulus Bill
Funds Invested	\$90M	\$26M	\$800B
Jobs Created	8,150	3,700	4,000,000
\$ Per Job Invested	\$11,000	\$7,100	\$200,000

1991 Recession: Small Business Drives Job Creation

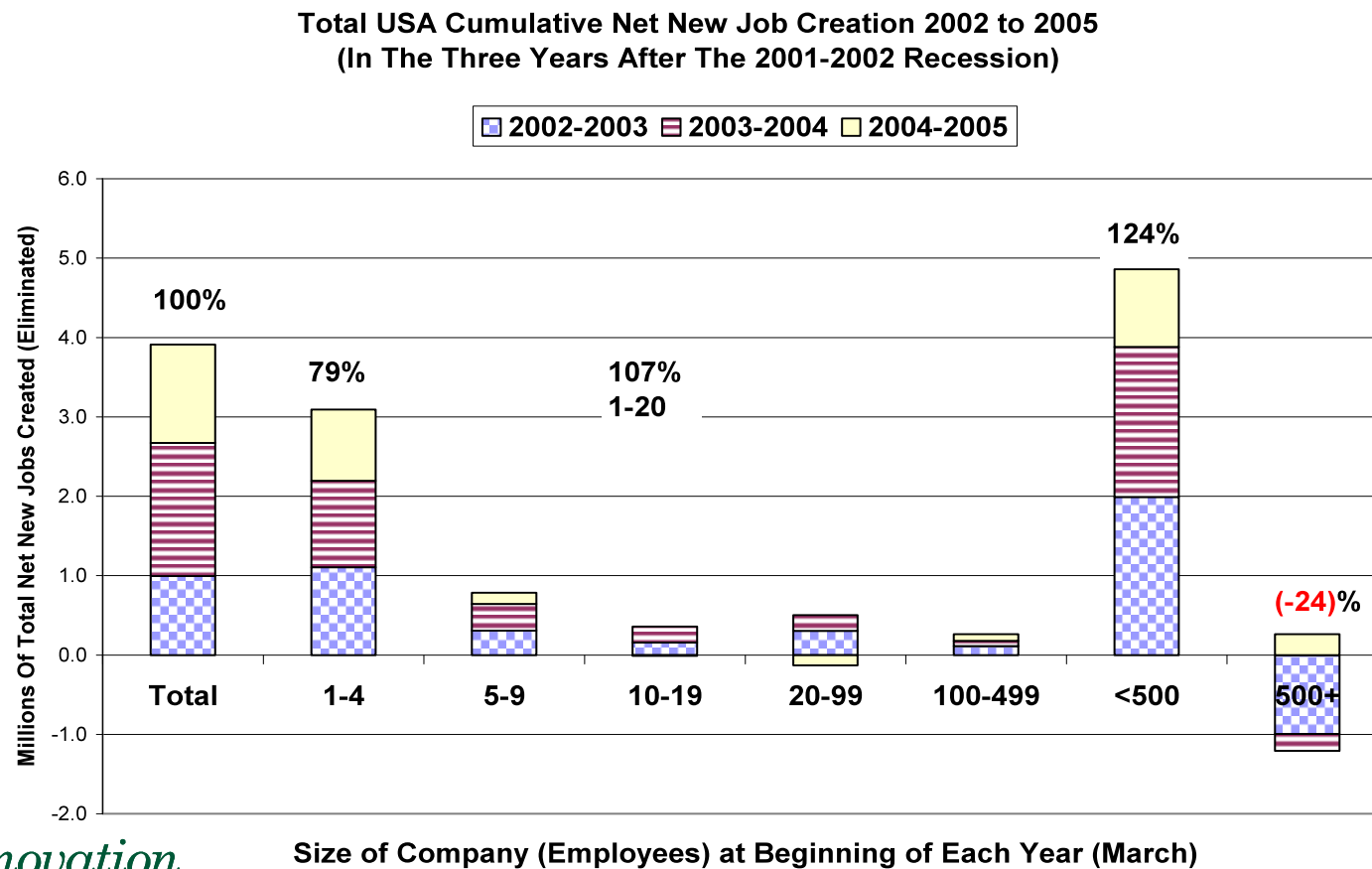
In the three years after the 1991 recession, Companies of less than 20 employees created 89% of net new jobs while companies over 500 employees created a net of 4%



2001 Recession:

Small Business Drives Job Creation

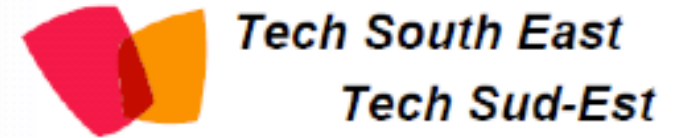
- In the three years after the 2001 recession, Companies of less than 20 employees created 107% of net new jobs while companies over 500 employees eliminated a net of -24%





Innovation Intermediaries In Atlantic Canada

Tech South East



Innovacorp

www.innovacorp.ca



Oceansadvance

www.oceansadvance.net



PEI Bioalliance

www.peibioalliance.com



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

U.S. Innovation Intermediaries' Best Practices

- ☆ Ben Franklin Technology Partners (BFTP, 1982)

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



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

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



- ☆ Innovation Philadelphia (IP, 2001)

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



- ☆ Oklahoma Center For The Advancement Of Science And Technology (OCAST, 1987)

<http://www.ocast.state.ok.us/>



- ☆ UCSD Connect (1985)

<http://www.connect.org>



- ☆ First State Innovation (2007)

www.firststateinnovation.org

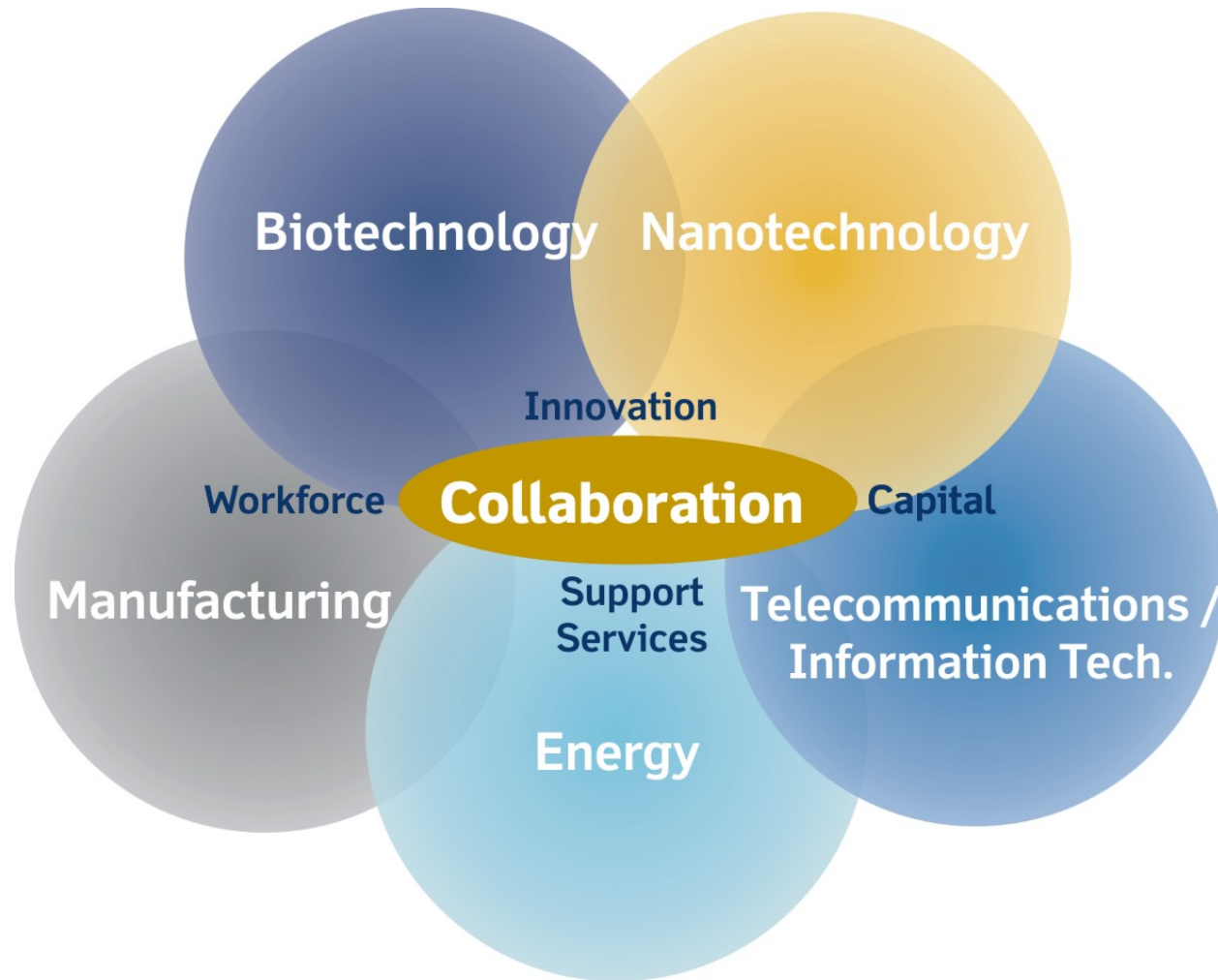




pennsylvania
DEPARTMENT OF COMMUNITY
& ECONOMIC DEVELOPMENT

Technology Investment

Pennsylvania's Industry Clusters

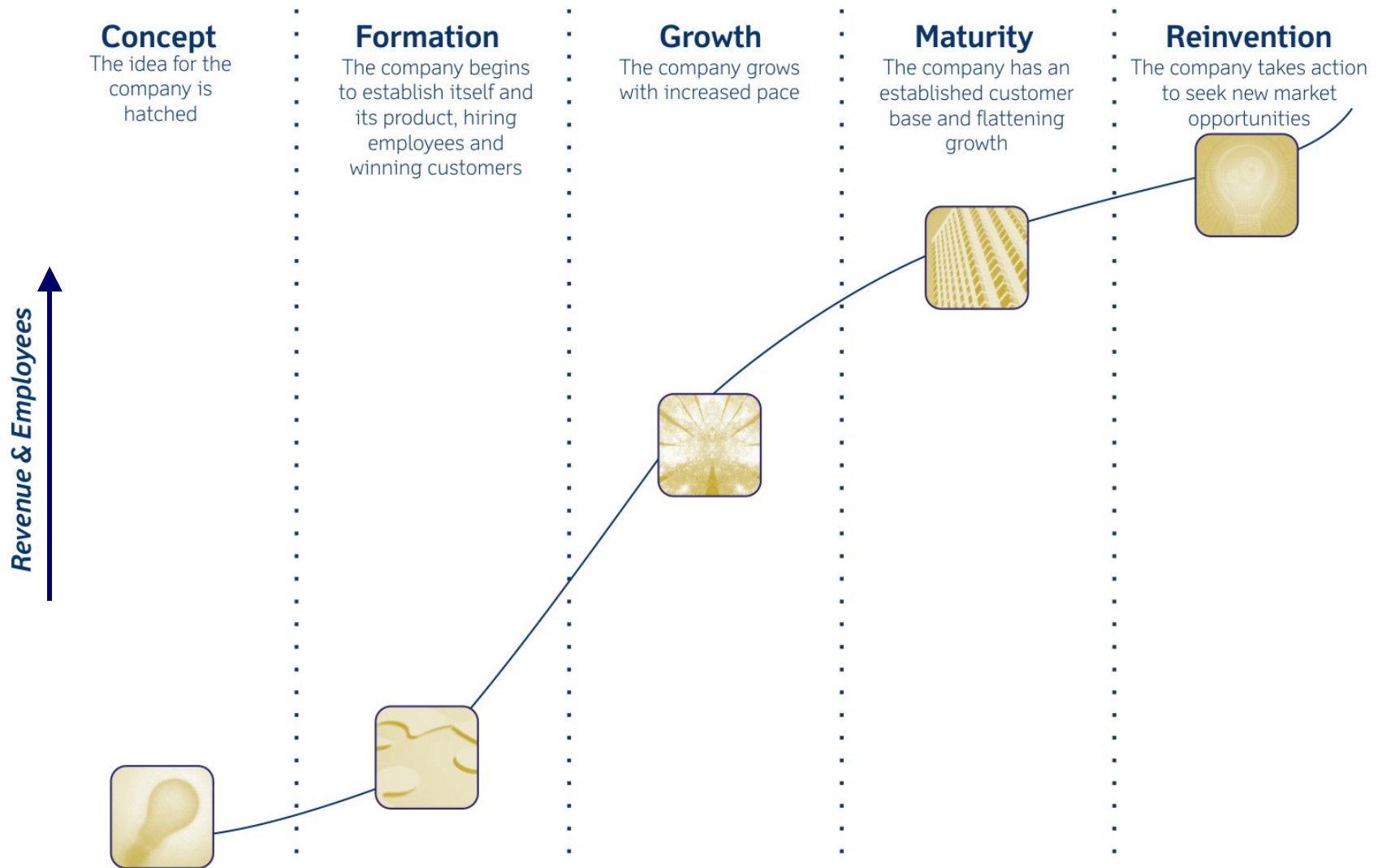


The Four Pillars of Innovation-based Economic Development



Technology Investment

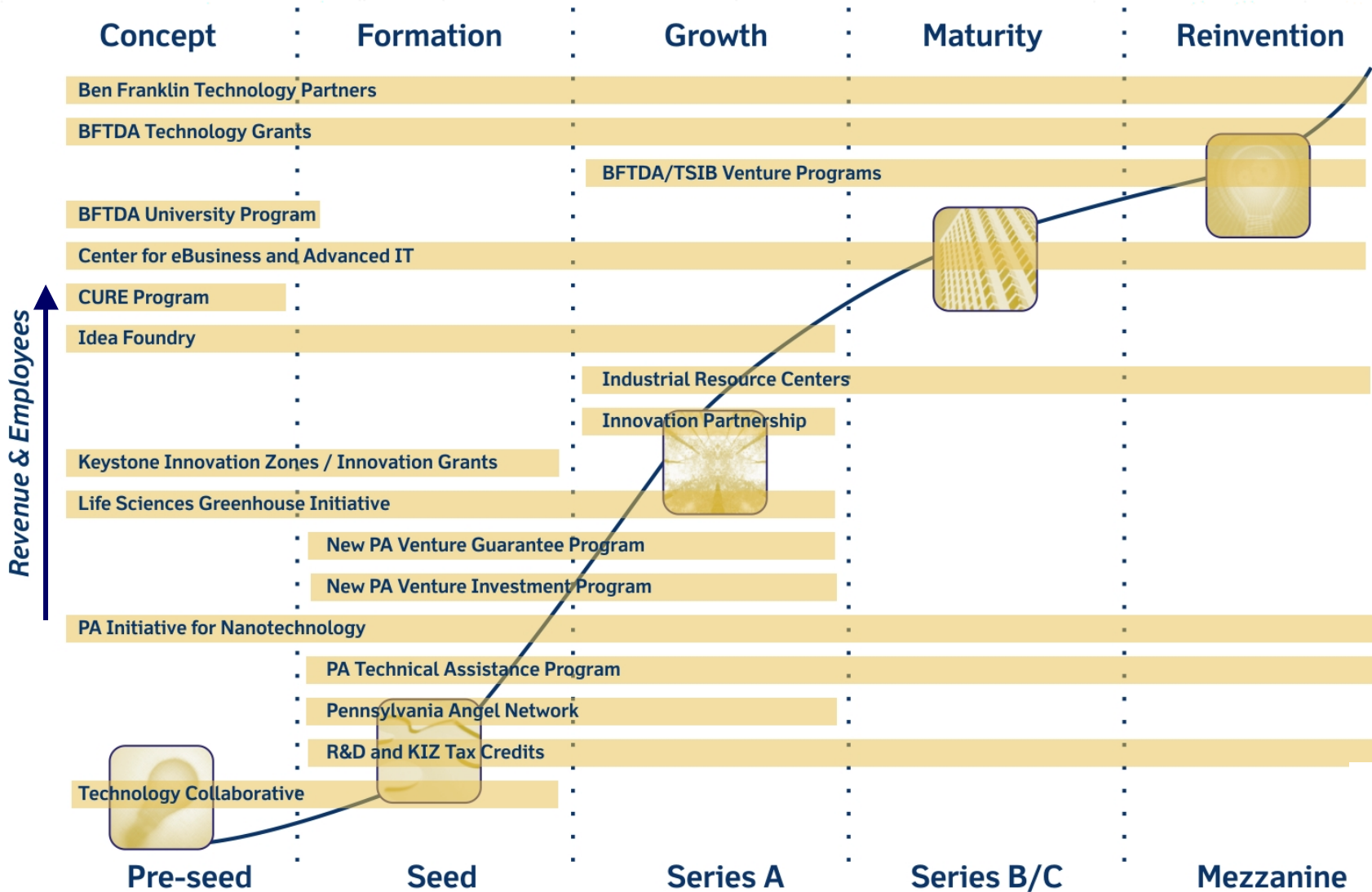
> ready > set > succeed



Technology Investment

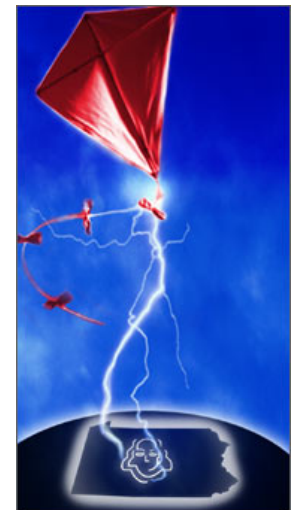
Technology-based Economic Development Tools Along the Continuum

> 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

Kansas Strategic Technology Cluster Assessment and a Plan for the 21st Century



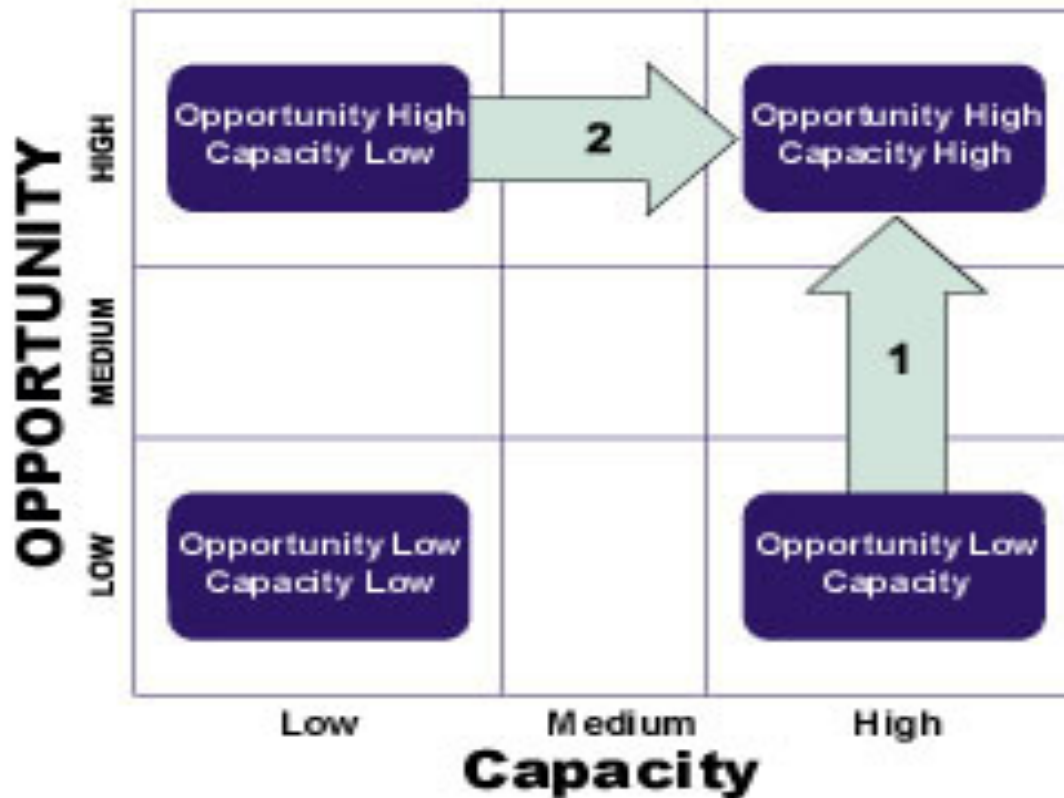
Purpose of the Study:

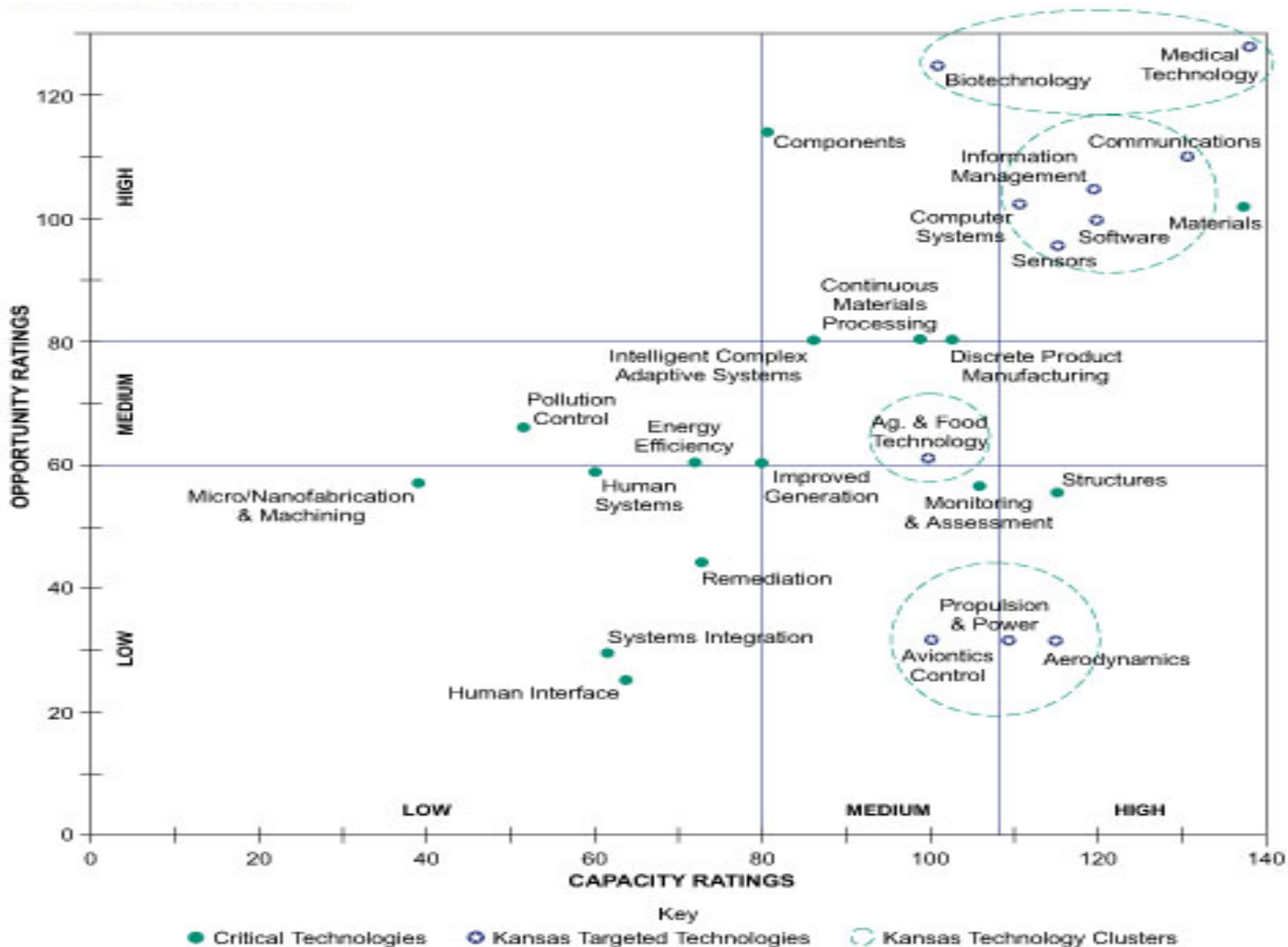
- Technology revolution affecting the economy.
- We must map our course in this new innovation economy.
- Focus our resources on strategic technology clusters in order to compete.

Published by The
Kansas Technology
Enterprise
Corporation

Linking Opportunity With Capacity

- Standardized rating system
- Determine level of capacity and opportunity for critical technologies





The technology areas with high levels in both categories represent logical targets for investment activity. Other technologies which may not have scored as well may be so important to Kansas' economy as to also warrant consideration.

KTEC Program Structure

Board of Directors

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)



2008 State New Economy Index

- There is concrete evidence that KTEC's efforts are improving the entrepreneurial climate in Kansas, which was **ranked 8th in Nation for "Gazelle Jobs"** - according to the 2008 State New Economy Index. Rapid growth "Gazelle" companies account for 80% of new jobs created.
- The New Economy Index also ranked **Kansas a "Top Mover" in "Fastest Growing Firms."** Through our direct equity investments and business assistance, KTEC has helped Kansas experience a large increase in the number of "fast growing firms" (i.e. those with growth exceeding 200% over 4 years). These firms provide a strong base for the state's current and future growth.

Come Home to Kansas Initiative

- #1 issue for bioscience and IT companies is talent recruitment
- Garmin, LSI Logics, Perceptive Software, etc.
- KTEC & partners launched www.comehometokansas.com to address issue
- Site shows thousands current technology job openings, plus strong cluster of recognizable companies in Kansas
- Software crawls internet to match people with career opportunities



Greg had the vision to see the vast possibilities to be harvested in the biopharmaceutical industry. So he cultivated his idea, rediscovered his roots and transplanted his dream to Kansas. He's just one of a lot of smart natives who are following their heads back to the heartland.

Come Home To
KANSAS

We will help you grow. www.ComeHomeToKansas.com

The Kansas Experience

Organizational Lessons:

- A clear articulation of the problem is critical.
- A “champion” for the S&T-economic policy process.
- The development of a public-private partnership must be a priority from an early stage.
- Programs must be targeted at critical bottlenecks.
- Institutional innovation must reach outside of traditional bureaucracies.
- The return to Science and Technology investments takes time to grow.

The Kansas Experience - 2009

CLUSTER	ORGANIZATION	OUTCOMES
Human BioSciences	Kansas BioScience Authority (KBA) www.kansasbioauthority.org	<ul style="list-style-type: none"> •\$581m Fund •Build world-class research capacity, growth of bioscience startups, expansion of the state's bioscience clusters and facilitate industrial expansion and attraction.
Value-added Agriculture and Ag Bio	National Agricultural Biosecurity Center (NABC) http://nabc.ksu.edu/content	<ul style="list-style-type: none"> •\$500m Research Center •Focused on protecting America's agricultural infrastructure and economy from endemic and emerging biological threats.
Aviation	National Institute for Aviation Research (NIAR) www.niar.wichita.edu	24 year-old research and tech-transfer center established to advance the nation's aviation industries that may benefit from aviation-related technologies.
Information and Telecommunications & Computing	Software and Technology Association of Kansas (SITAKS) www.sitaks.com	Advocate for Kansas' software and information technology sector to help Kansas' software and IT companies grow and succeed.

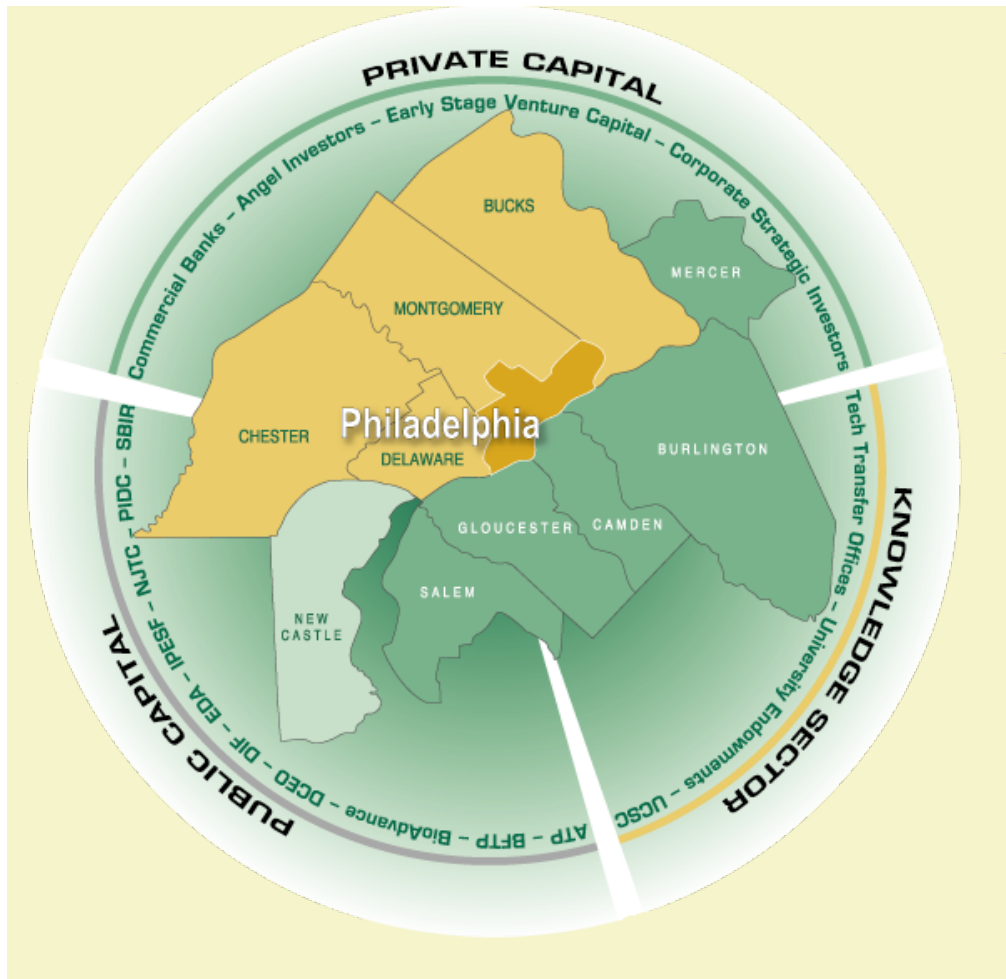
Innovation Philadelphia's Mission



A Public/Private Partnership
created to:

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

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

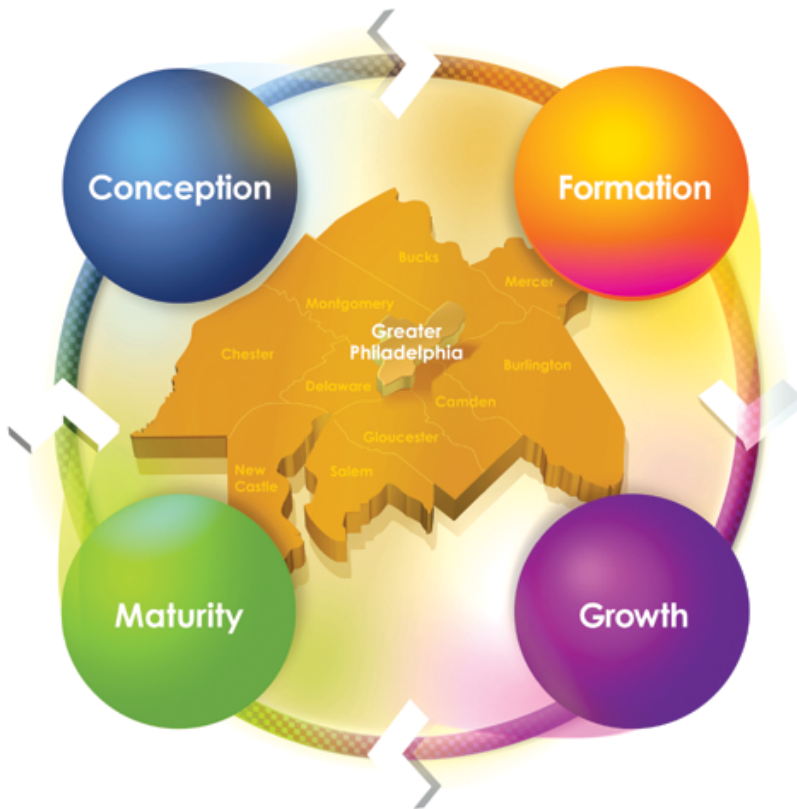


IP

innovation
PHILADELPHIASM
LOCAL INNOVATION...GLOBAL REALIZATION

Innovation & Entrepreneurial Index

Is **our** glass half empty or ***half full?***



Churning the Greater Philadelphia Innovation Economy

A Roadmap for Regional Growth

“You can always amend a big plan, but you can never expand a little one. I don’t believe in little plans. I believe in plans big enough to meet a situation which we can’t possibly foresee now.”

— Harry S. Truman

IP Core Products / Services

Investment

Commercialization

Global & Regional Workforce / Economic Development

Branding, Research & Marketing



World's Best Technology Network



www.careerphilly.com



What Worked For KTEC and Innovation Philadelphia

- **FOCUSED & INTEGRATED** Science & Technology Collaboration for Kansas and the Greater Philadelphia region
- **PRIVATE** Sector Leadership and **COMMITMENT**
- Organization's function as a **BUSINESS**
- Successfully manage a technology investment portfolio for **ROI**
- Operational **FLEXIBILITY**
- **ACCOUNTABILITY** with measurable outcomes
- Experienced **PROFESSIONAL** team
- Focus on the **ENTREPRENEUR'S** needs
- **SUSTAINABLE** Funding

Hot Off the Presses



Creating a National Innovation Framework



Federal Aid Sought for Equity-Backed Companies



More Signs of Capital Starvation



A Federal VC Fund of Funds?



Into the Valley of Death



Recession Knocks VC Funds to 5 1/2 Year Low



Health Care Bleeds Small-Biz Finances



Buzz Article





US Government has not yet addressed
the “Valley of Death” Funding Crisis

Nor Has It Developed

An Integrated Innovation Plan for America

Innovation America has a Plan!



U.S. Experiencing a Slowdown In Its Global Innovation Leadership

GLOBAL INNOVATION INDEX

RANKING	COUNTRY	SCORE*
1	Singapore	2.45
2	South Korea	2.26
3	Switzerland	2.23
4	Iceland	2.17
5	Ireland	1.88
6	Hong Kong	1.88
7	Finland	1.87
8	United States	1.80
9	Japan	1.79
10	Sweden	1.64

Source: Boston Consulting Group & National Association of Manufacturers

*Global Innovation Index evaluated both innovation inputs, such as fiscal and education policies, and outputs such as patents, technology transfer from basic university research, research and development, and business performance

Other Countries Response – Valley of Death



UK Government Unveils Plans for £1BN Venture Capital Fund of Funds

30 Jun 2009. Source: AltAssets

The UK's venture capital industry will receive a much needed boost as the government announced plans to commit £150m (€177m) to a new fund of funds, the UK Innovation Investment Fund.

The Department for Business, Innovation and Skills, with the Department of Energy and Climate Change and the Department of Health, will invest the money alongside the private sector in order to stimulate growth.



Industry
Canada

Industrie
Canada

Government of Canada Announces \$450 Million in New Funding for BDC to Assist Canadian Businesses

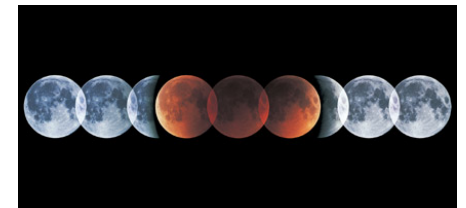
TORONTO, Ontario, June 15, 2009 — The Honourable Tony Clement, Minister of Industry, today announced that the Government of Canada is providing \$450 million to the Business Development Bank of Canada (BDC) in support of small and medium-sized enterprises and innovative firms.

The funding will include \$100 million to establish the Operating Line of Credit Guarantee and \$350 million over three years to help drive venture capital investment in promising Canadian technology businesses.



**MISSION: TO ACCELERATE THE GROWTH OF THE
ENTREPRENEURIAL INNOVATION ECONOMY
IN AMERICA**

- Preliminary framework on how to finance and bring together organizations, networks, and resources involved in growing the nation's entrepreneurial innovation economy and creating new jobs.
- Private-public partnership such as Innovation America could be an innovation intermediary for facilitating this process between, State, Federal, University, Foundation and Private Sector stakeholders.
- Opportunity to leverage the federal innovation portfolio of programs with state and regional early-stage funds and IBED organizations.
- The **moons are aligning** to create and implement, an integrated innovation U.S. strategy and leverage the **newly created Commerce Department Office of Innovation and Entrepreneurship**.



Creating a National Innovation Framework

- **The National Innovation Jobs Seed Fund and Technical Assistance Grant Fund**
- **The Federal Innovation Partnership and a National Innovation Advisor**
- **The National Private-Public Partnership Innovation Program**

science progress

Creating a National Innovation Framework

Building a Public-Private Support System to Encourage Innovation

By Richard Bendis & Ethan Byler
April 2009

INTRODUCTION AND SUMMARY

Science, technology, and innovation experts in the United States today almost unanimously agree that our country needs to launch a collective national effort to accelerate U.S. technological and innovation-based growth, forestall a global economic downturn during which other nations are boosting their already significant public and private sector efforts to build more competitive, innovation-led economies. The United States stands alone above the world without a national innovation framework.

The truth? Our country is beginning to lose its innovation leadership and national competitive advantage because we do not coordinate innovation policy across federal, state, municipal, and university boundaries and do not adequately support high-growth entrepreneurial companies. The federal government spends approximately \$1.50 billion annually into basic scientific research but then largely fails to ensure this money results in the kind of broad-based economic growth that makes our products and services the most competitive on the planet. This is a tragedy because it is innovative small businesses that have generated between 80 to 85 percent of net new jobs annually over the last decade as they grow and prosper, according to the U.S. Small Business Administration. These same companies also employ 80 percent of high-tech workers such as scientists, engineers, and information-technology workers.

Today's economic crisis, however, is also an opportunity to reinvigorate our knowledge economy, if recent history is any guide.

After both the 1990-91 and the 2000-01 recessions, small businesses created more net new jobs than large companies. In fact, 80 percent of net new jobs in the three years after the 2000-01 recession were by far the dominant job creators in our country. The Office of Small Business Advocacy to the Small Business Administration shows that during the three years after the 2000-01 recession, the smallest of our companies (one to four employees) provided 79 percent of the net new jobs in the subsequent three years. Similarly, after the recession of 1990-91, small businesses created 89 percent of net new jobs (see sidebar for case studies in Pennsylvania and Kansas).

Year	1-4 employees	5-9 employees	10-49 employees	50-99 employees	100-499 employees	500+ employees
2000	15	10	5	2	1	1
2001	10	5	2	1	1	1
2002	5	2	1	1	1	1
2003	10	5	2	1	1	1
2004	15	10	5	2	1	1
2005	20	15	8	3	2	2

science progress / Creating a National Innovation Framework

Partners in National Innovation Development



*The Association of
University Technology
Managers*

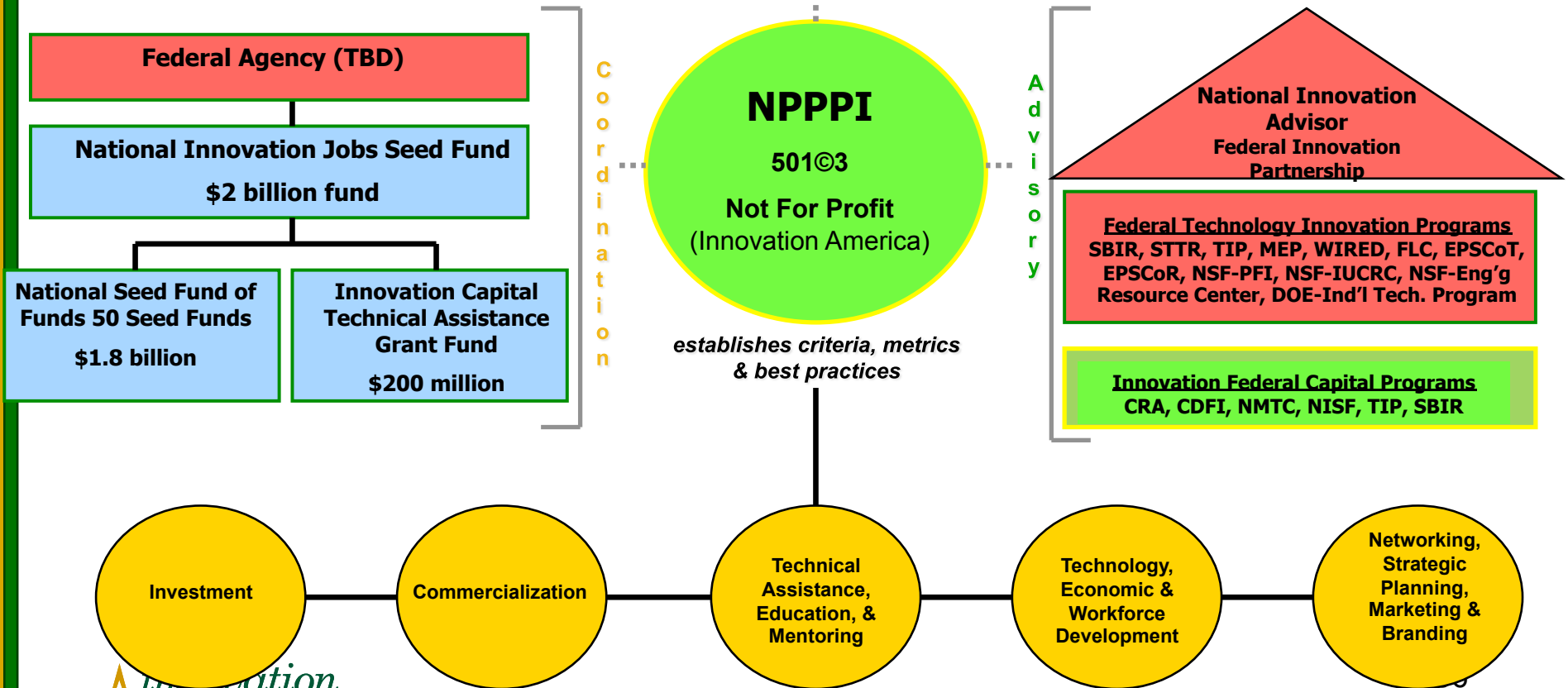
**Community Development Venture
Capital Alliance**



National Innovation Framework

Angel Capital Association (ACA)*	Community Development Venture Capital Alliance (CDVCA)*	National Association of Seed & Venture Funds (NASVF)*	American Society of Mechanical Engineers (ASME)*	State Science & Technology Institute (SSTI)*	National Business Incubation Association (NBIA)*	Association of University Research Parks (AURP)*	Association of University Technology Managers (AUTM)*
----------------------------------	---	---	--	--	--	--	---

*Potential national innovation partners

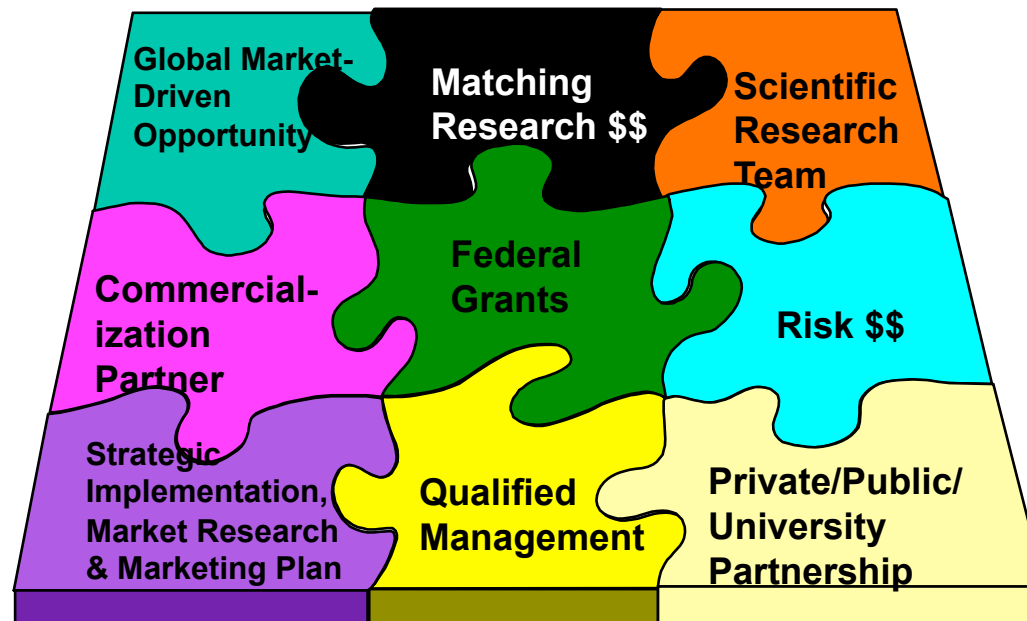


The Road from Basic Research to Commercialization



...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

Human Connectivity

Intelligent Communities and communications networks have the ability to transform economic, political, and social relationships on a global scale.



- In the past, organizations strategized to gain **COMPETITIVE** advantage.
- The emphasis in the future will be to gain **COOPERATIVE** advantage.
- A core competency needed in individuals, organizations, and regions alike is **CONNECTIVITY**.

Source: Fast Growth

Innovation Connectivity in Moncton

Moncton has the **5C's of Innovation Connectivity**:

Cultivation

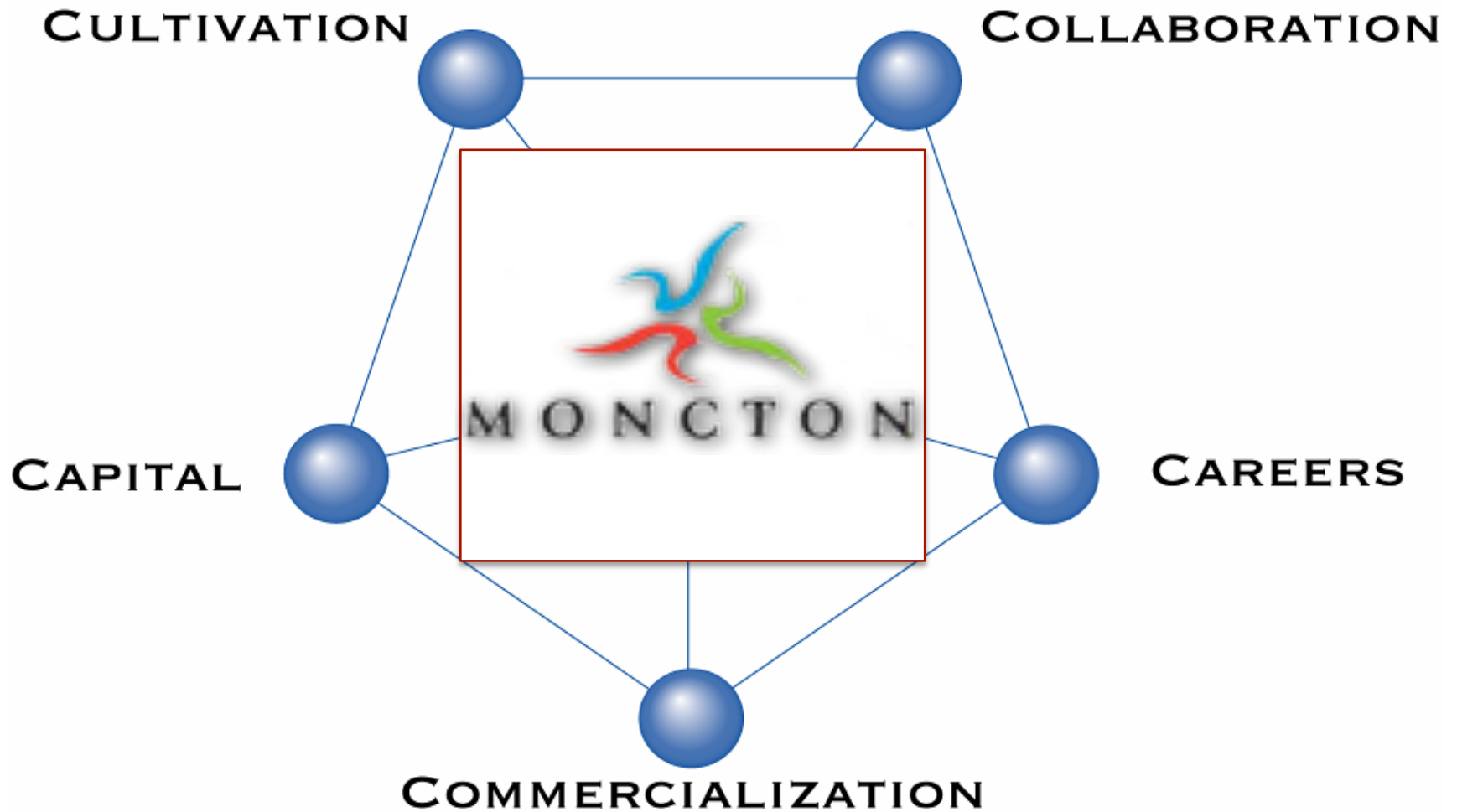
Collaboration

Capital

Careers

Commercialization

Implementing a New Moncton Innovation Paradigm



What's Next For Moncton?

Today:



Tomorrow:

innovation



A Call to Action



“Somebody has to do something, and it's just incredibly pathetic that it has to be us.”

--Jerry Garcia of the
Grateful Dead



Richard A. Bendis
President and CEO
Innovation America
2600 Centre Square West
1500 Market Street
Philadelphia, PA 19102
(215) 496-8102
rbendis@bendisig.com
www.innovationamerica.us

