European Union Innovation Delegation Presentation

Technology Strategy Board
Driving Innovation

VINNOVA

syntens
INNOVATIE CENTRUM

oseo

NL Agency
Ministry of Economic Affairs, Agriculture and Innovation

Presented by Rich Bendis,
President & CEO Innovation America
Interim President and CEO
Publisher, innovationDaily
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Rich Bendis BIO

- ✧Founder & CEO Innovation America
- ✧Editor and Publisher innovationDAILY
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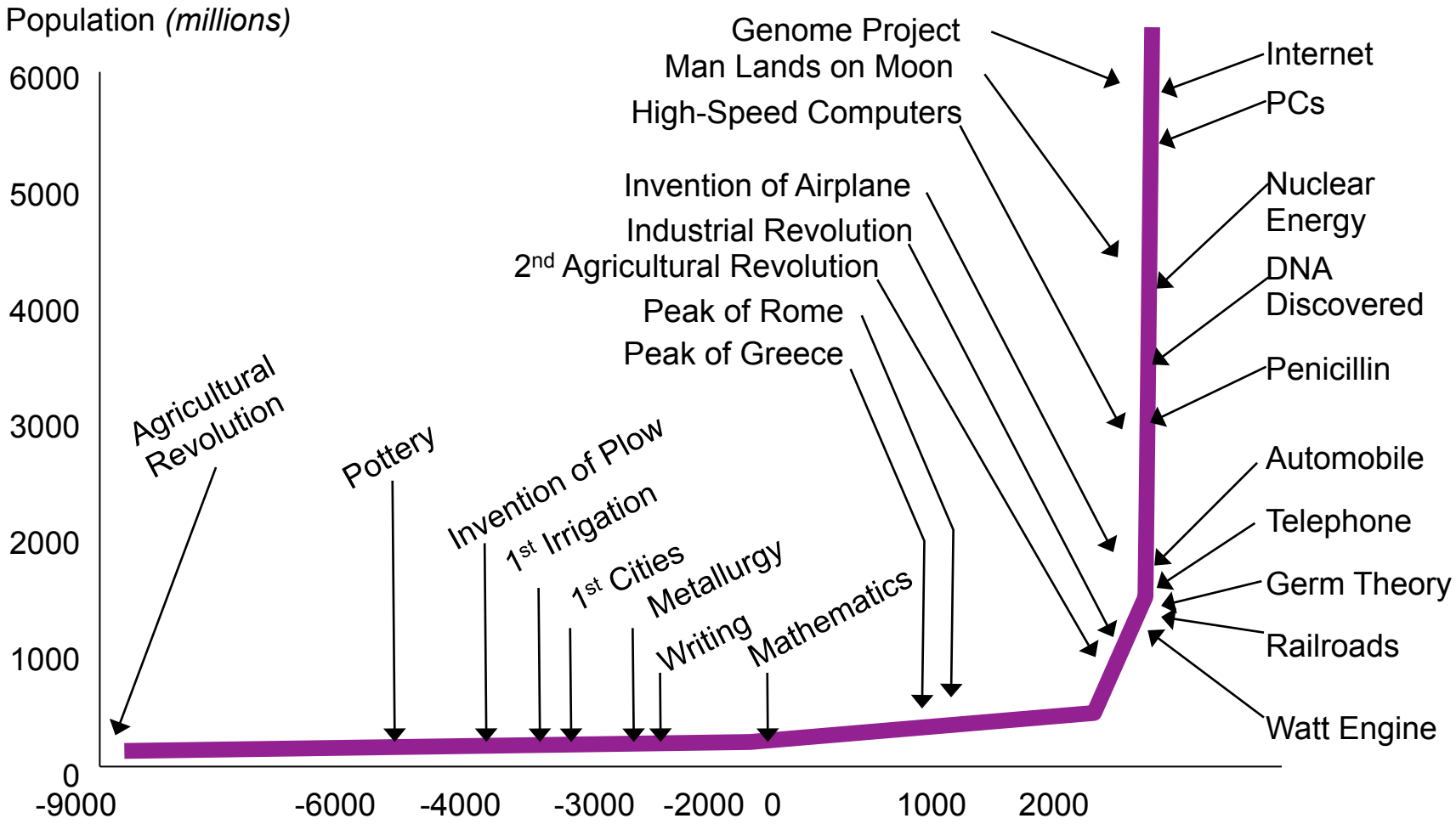
- ✧Active Venture Capitalist & Angel Investor
- ✧Founder & President of Innovation Philadelphia & KTEC
- ✧Int'l Speaker & Consultant to over 20 countries & 25 states/regions
- ✧Board member TechnoPolicy Network, The Hauge
- ✧Consultant to the United Nations & NATO on IBED
- ✧Founding Board Member of SSTI and NASVF
- ✧Former member of the U.S. Innovation Partnership Advisory Board
- ✧U.S. member National Academy of Sciences (SBIR Review Committee)
- ✧Member Eisenhower Fellowship Selection Committee
- ✧Board Member of University City Science Center – Philadelphia
- ✧Chairman & CEO of Continental Healthcare Systems (NASDAQ IPO)
- ✧Former Executive with Quaker Oaks, Texas Instruments, Polaroid & Marion Laboratories

The Future is Determined By the Present

Growth of World Population and the History of Technology



Source: Milken Institute, Robert Fogel/University of Chicago

The Global Innovation Imperative

- Innovation is Key to Growing and Maintaining a Country's **Competitive** Position in the Global Economy and to address Global Challenges
- **Collaboration** among Small and Large Businesses, Universities, and Research Institutes is Essential for Innovation & Commercialization
- **New Institutions and New Incentives**, are increasingly important to support collaboration and foster innovation
- Competitive advantages are increasingly tied to human capital and innovation
- **Economic growth** is closely related to education/ workforce, energy, climate change, environmental, natural resource, geopolitical issues & entrepreneurship

OPEN INNOVATION MATTERS

New Rankings of the World's Most Innovative Countries

- **Innovation is beneficial to both national economies and corporate performance, but its impact is more visible at the microeconomic than the macroeconomic level**

- **Innovative companies tend to outperform their peers**

- **Firms connected to high-tech clusters tend to outperform their peers**

- **Technical skills of the workforce and IT/ telecommunications infrastructure are critical to innovation**

- **Small countries have an advantage**

- **Return on investment (ROI) is higher in middle-income countries than in rich countries.**

How Leading Nations Respond to the Innovation Imperative?

They are providing four things:

- High-level Focus
- Sustained Support for R&D: Leveraging Public and Private Funds
- Support for Innovative SMEs
- New Innovation Partnerships to bring new products and services to market

2011World Innovation Index (B-BRICS Included)

Rank	Country	Score
1	Switzerland	63.82
2	Sweden	62.12
3	Singapore	59.64
4	Hong Kong (SAR), China	58.8
5	Finland	57.5
6	Denmark	56.96
7	US	56.57
8	Canada	56.33
9	Netherlands	56.31
10	UK	55.96
29	China - B	46.43
47	**Brazil - B**	**37.75**
56	Russian Federation - B	35.85
59	South Africa - B	35.22
62	India - B	34.52

Defining Innovation

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

Why Is Innovation Essential?

"INNOVATION DISTINGUISHES BETWEEN A LEADER AND A FOLLOWER."

-STEVE JOBS

What is a National Innovation Strategy?

- ***"Those elements of science, technology, and economic policy that explicitly aim at promoting the development, spread, and efficient use of new products, processes, and services."***

- **A well-conceived, strategic approach to drive innovation that proactively anticipates and articulates the interactions among policies across:**

  - Science and technology
  - R&D
  - Commercialization strategies
  - Education & skills
  - Immigration
  - Statistics/measurement
  - Tax
  - Trade
  - Intellectual property
  - Competition/Regulatory
  - Public procurement
  - Public sector innovation

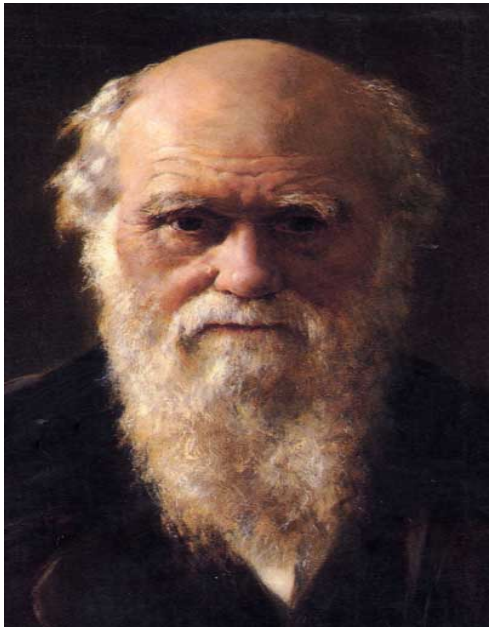
Selected Nations with National Strategies

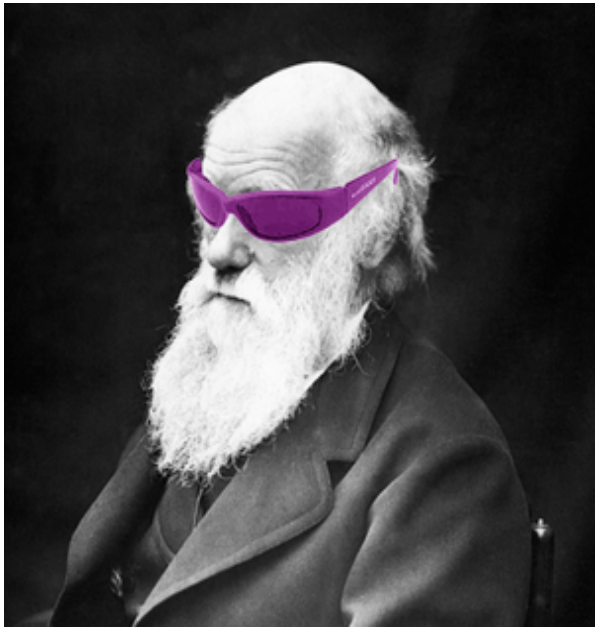
- China
- Denmark
- Finland
- Germany
- India
- Ireland
- Japan
- Korea
- Netherlands
- Norway
- Portugal
- South Africa
- Sweden
- Taiwan
- Thailand
- United Kingdom
- Uruguay
- United States

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





The Six Driving Forces of Change

- Commoditization
- The Digital Revolution
- Social Mediaization throughout society
- Global Open Innovation
- The Turbulent World
- Acceleration (or running faster to stay in the same place)

Open Innovation Defined

"Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology."

Henry Chesbrough

Implementing a New Innovation Paradigm

- Deviate from traditional perspectives
- Encourage public investment and risk taking
- Develop trust through collaboration
- Ensuring responsiveness to partners' missions
- Build consensus of all constituents through education, participation, and positive outcomes
- Move from Tech-Based Economic Development (TBED) to…..

Innovation-Based Economic Development (IBED)

Innovation Paradigm Shift

PROOF OF CONCEPT
(Technological Feasibility)
"It Works!"

The Historic hp invent Garage

PROOF OF COMMERCIAL RELEVANCE
(Market Pull)
"I'll Buy It!"

CASH IS KING!

University Commercialization Centers

THE GAP

Academic Research

- Federal Grants
- Corporate Sponsored Research

» Technology risk

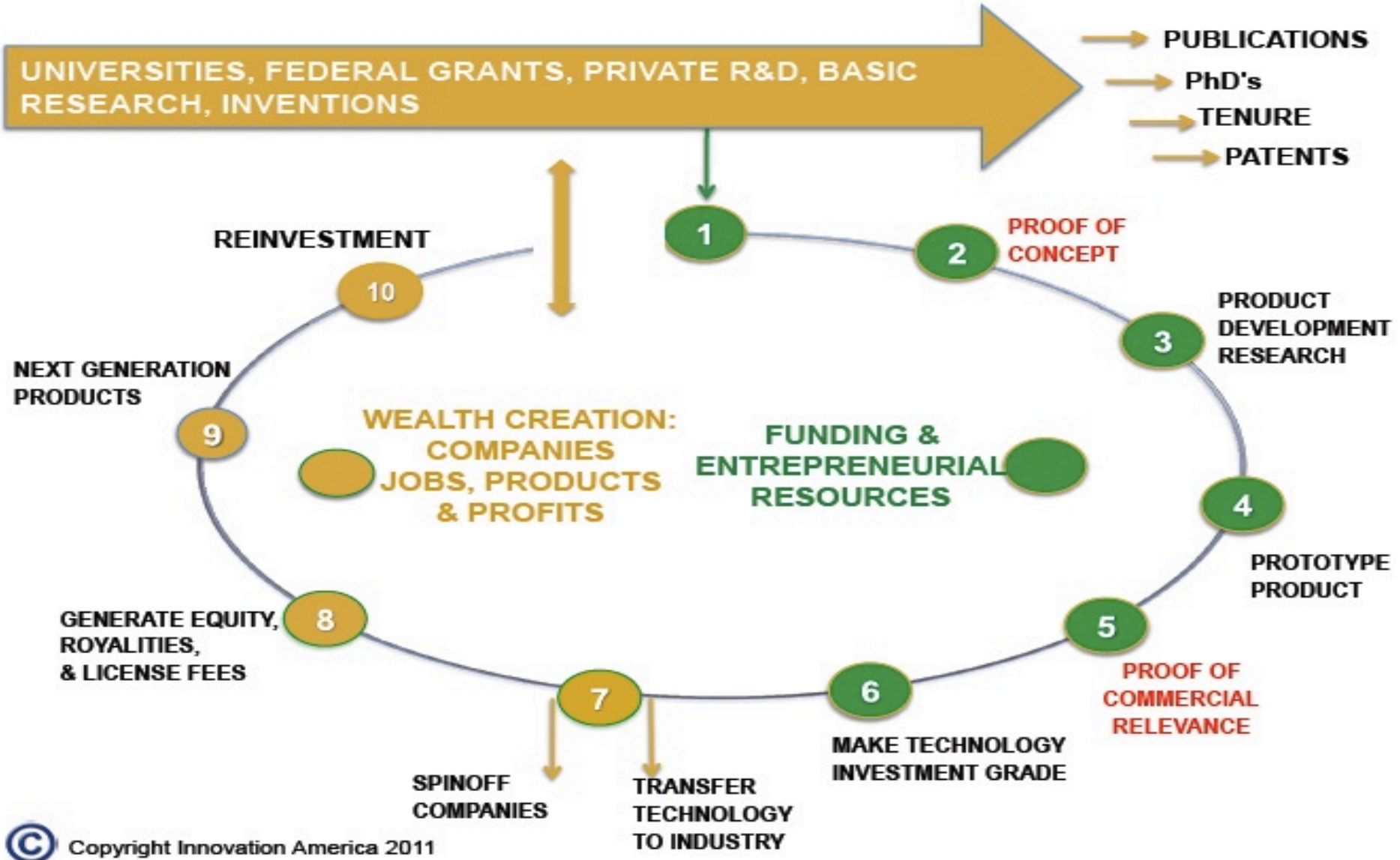
» Market risk

Commercial Enterprise

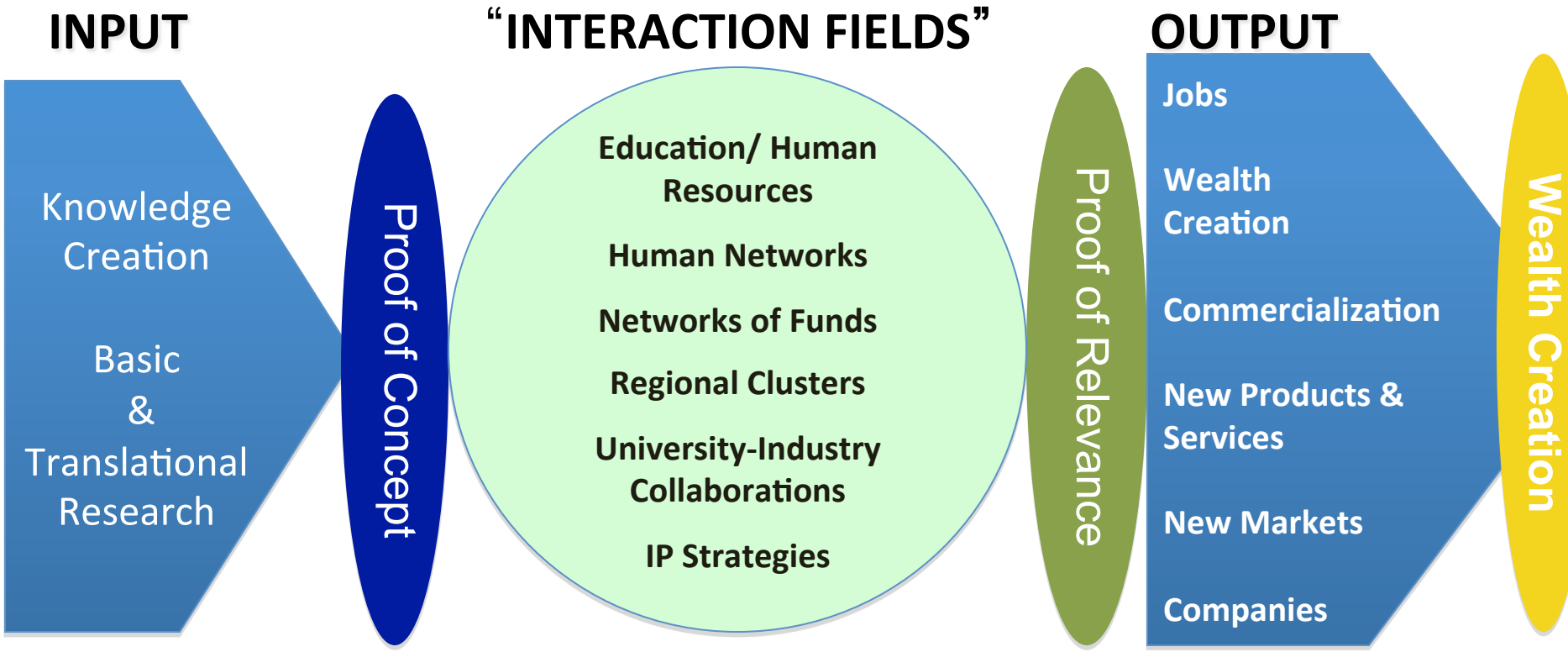
Investors Commercialize

- Angels
- VC's
- Corporations

Innovation America Commercialization Model

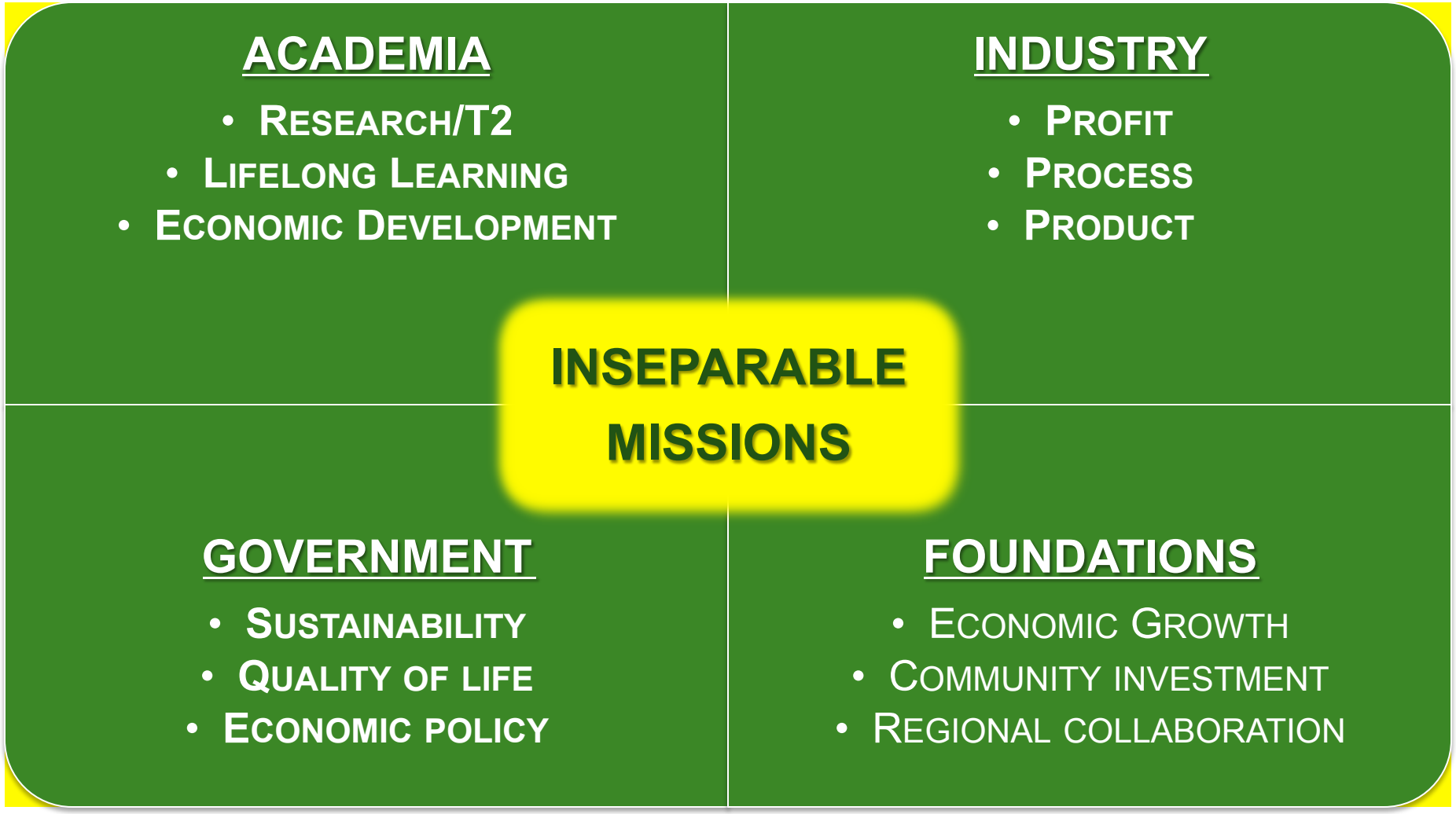


Innovation Ecosystem



The concept of the **Innovation Ecosystem** stresses that the flow of technology and information among people, enterprises and institutions is key to a vibrant innovation process.

Model Ecosystem



Government's Role in Innovation

- Long term vision and planning
- Identify gaps and trends in science, technology, innovation and SME development
- ***Be a catalyst through long-term strategic investments and partnering***
- Develop a balanced and flexible research and development investment portfolio
- Encourage private sector innovation
- Establish performance-based research and development
- Accelerate the commercial exploitation of creativity and knowledge

Government Innovation Programs

SBIR – The Mechanics of the Program**

Phase I

•Evaluate viability and feasibility of an idea

•Up to **$150K** for 6 month period *(STTR 12 months)*

•Win Rates: *approx. 1-8 (varies widely)*

Phase II

•Expand results and Further pursue development

•Up to **$1,000,000** for up to 24 months

•Win Rates: approx. 1-3 (varies widely)

Phase III Commercialization

•Most important requirement in getting to this point is having successfully won a Phase I and Phase II award.

- •Selling Product Development under a Phase II
- •Non-Government Funding to Develop Technology or Product
- •Non-SBIR Funding from Government to Develop Technology or Product

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Advantages of SBIR

1. Significant amount of funds reserved for small, innovative firms
2. Public venture funds without dilution features
3. Funds high risk projects
4. No Payback
5. No personal guarantees
6. Firm retains IP – no dilution
7. Provides valuable credibility
8. Offers a simplified route to obtaining federal R&D funds

Nebraska SBIR/STTR Other Innovation Commercialization Funds

(US Rank/Pop – 38/1.8 Million)

Fund Type	Description	Amount	Match
SBIR Phase 0	Planning Grant	$5,000	None
SBIE Phase 1/2	SBIR Commercialization Grants	Up to $100,000	None
Prototyping	Prototype creation of product from research and development at a business operating with 500 or less employees	$50,000	50%
Commercialization Fund	Commercializing a prototype of a product or process	$500,000	50%
R& D Fund	Nebraska based businesses using faculty or facilities of an education institution for applied research or development of new products	$100,000 Phase 1 $400,000 Phase 2	1 to 1
Value–added Ag Fund	Innovation-based Ag development	No max amount (Total $1M per year)	25%
Microenterprise Fund	For-profit entities with no more than 10 full-time equivalent employees.	$50,000 Max	35%

Kentucky SBIR/STTR Programs

(US Rank/Pop – 25/4 Million)

Phase Zero -- The goal of the SBIR-STTR Phase Zero grant is to assist Kentucky-based new and existing small businesses, and Kentucky's college and university faculty with the preparation of high-quality, competitive Phase I proposals for submission to participating federal SBIR and STTR programs.

Phase Double Zero -- The goal of the SBIR-STTR Phase Double Zero grant is to assist Kentucky-based new and existing small businesses with the preparation of high-quality, competitive Phase II proposals for submission to participating federal SBIR and STTR programs. The applicant must have previously received a Phase I Federal Grant to be eligible for a Phase Double Zero grant.

The Kentucky Matching Funds Program provides matching Funds for the SBIR/ STTR grant awards as follows:

Phase I: Up to $150,000 in Matching Funds
Phase II: Up to $500,000 in Matching Funds

Michigan Emerging Technology Fund

(US Rank/Pop – 9/9 Million)

ETF Fund Purpose:

- Encourage companies to pursue SBIR/STTR grants and contracts
- Increase Michigan's competitiveness in obtaining SBIR/STTR funds
- Increase commercial success of Michigan SBIR/STTR projects
- Stimulate early stage technology investing activity in Michigan

Focused Technology Sectors:

- Advanced Automotive, Manufacturing, Materials, Information, and Agricultural

SBIR/STTR Funding: $1.8 Million

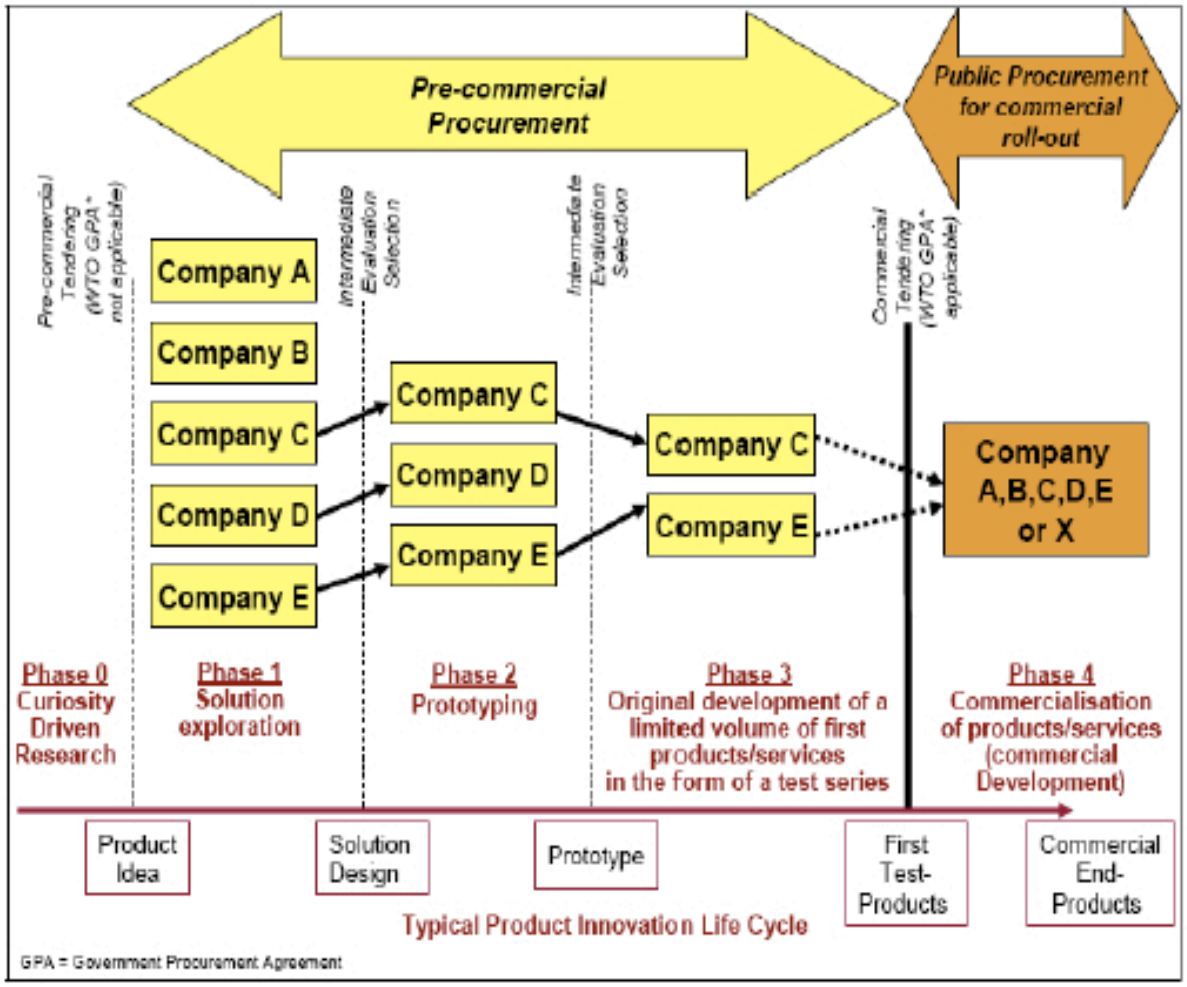
Phase I Funding: Matching Up to $25,000
Phase II Funding: Matching Up to $125,000

SBIR/STTR consulting, training & assistance BBC clients experience a 40% success rate 2 ½ X greater than national average

Pre-Commercial Procurement

- The scope is R&D services only
- The application of risk-benefit sharing
- A competitive procurement designed to exclude State aid

2. SBIR and PCP



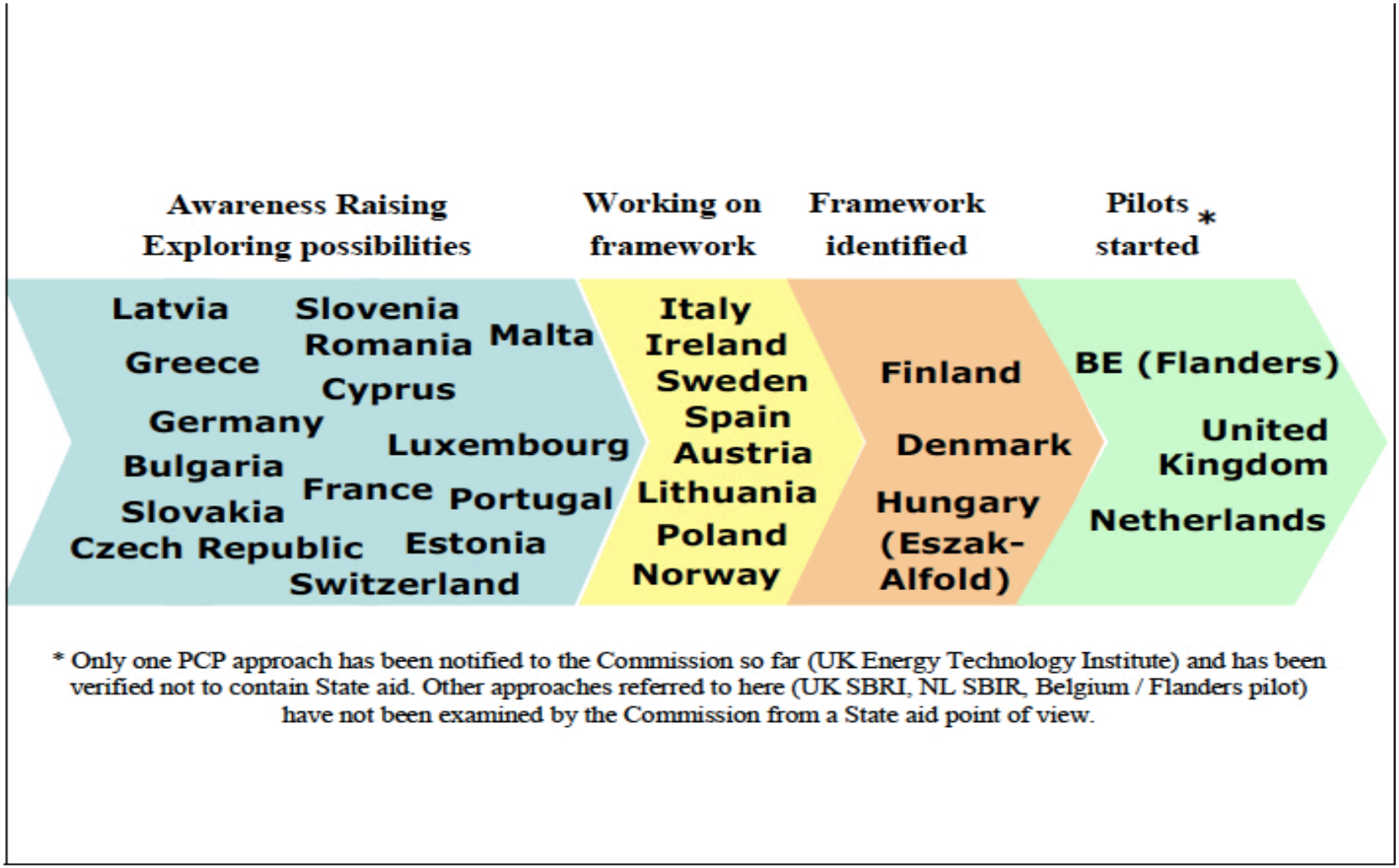
Some differences:

- SBIR P1 is feasibility study
- SBIR integrates P2 and P3 of PCP
- SBIR can lead to B2G and / or B2B, can PCP?

My conclusions:

- SBIR is more simple and more flexible, cheaper and gives results faster.
- PCP has advantages too, like less risk in complex public procurements!

Status Overview of implementation of PCP Across Europe



* Only one PCP approach has been notified to the Commission so far (UK Energy Technology Institute) and has been verified not to contain State aid. Other approaches referred to here (UK SBRI, NL SBIR, Belgium / Flanders pilot) have not been examined by the Commission from a State aid point of view.

Figure 1: Overview status of implementation of PCP across Europe

SBRI In UK

(Country Rank/Population 24/62 Million)

Benefits to Business - suitable for SME's & early stage companies.

•Creates opportunities for businesses to engage with a specific department need and to prove their technology or idea.

•Successful companies will gain a lead customer for development and will receive a contract for the full cost of demonstrating the feasibility of their technology, leading to subsequent prototype development.

•Provides route to market & establishes credibility for further investment

Benefits to Government

•Supports the public sector to procure innovative solutions that address current significant department needs.

•Enables departments to appeal for a wide range of ideas and evaluate these through short-term simplified contracts and a two-stage development process.

•Allows government departments and public sector organizations to engage with a broad range of companies they would not otherwise work with. It

Results = Brings in new technologies to market faster and with managed risk.

Netherlands SBIR

(Country Rank/Population 61/17 Million)

The goal of the Dutch government with the SBIR program is threefold:

- Solving public questions and concerns
- Stimulating innovation among SMEs
- Validation of public knowledge

Unique feature of the SBIR program:

- Contracting authority fully funds the first two phases while the resulting intellectual property remains with the company.
- Result:
- SMEs are encouraged to become more innovative resulting in new products and services.
- New job creation.
- Government gains a variety of innovative solutions to its problems.

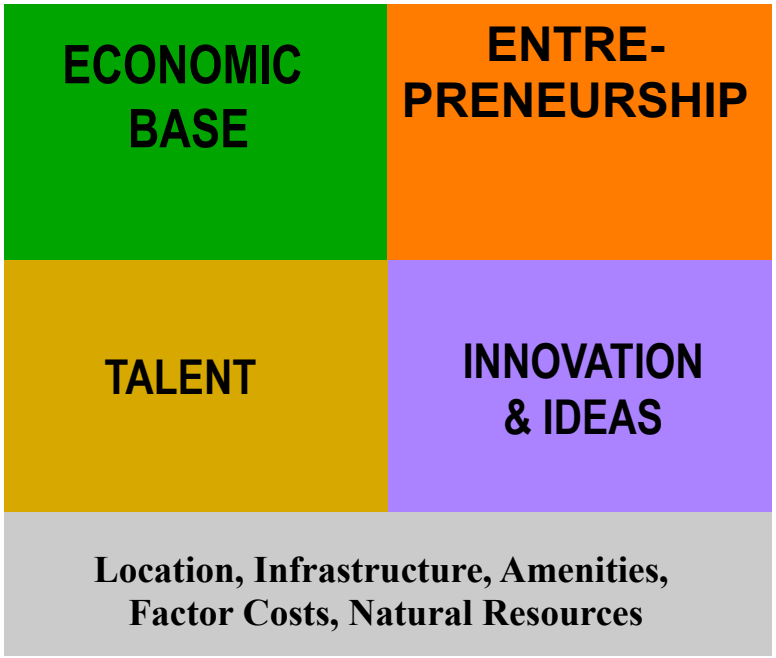
Regional Innovation Clusters

RICs are a geographically-bounded, active network of similar, synergistic or complementary organizations which leverage their region's unique competitive strengths to create jobs and broader prosperity.

Five Key Components to Consider When Defining Unique Regional Assets

What you make, including your existing & prospective industry clusters

What you do: your workforce skills & human capital base



Your capacity to create companies wholly new or from existing firms

Your capacity to innovate and generate new ideas

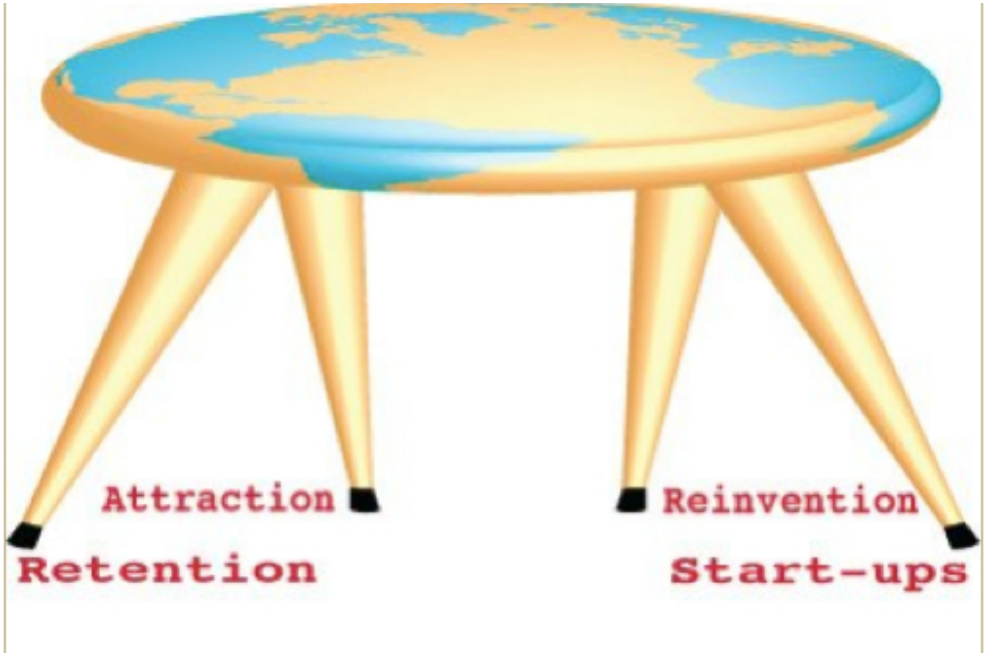
The basic conditions defining the economic milieu of the region

Best Practices in RIC Management

- **Regionally-Led** from existing networks & assets – bottom-up approach
- **Involve partnerships between private and public** at all levels (i.e. local, regional, state, and Federal)
- Unique **strengths of region are built upon** rather than trying to copy other regions (i.e. everyone can't support a biotech cluster)
- **Different strategies are developed for different clusters**
- Well-funded initially and **self-sustaining over the long-term**
- **Linked with relevant external efforts**, including regional economic development partnerships and cluster initiatives in other locations

Economic Development

- Economic Development is like a 4 - legged stool:
  - **Attraction**
  - **Retention**
  - **REINVENTION**
  - **Grow Your Own**
- IBED requires patience and persistence, continuity and consistency
- Working with early-stage companies takes time
- A balanced portfolio economic development strategy is best!



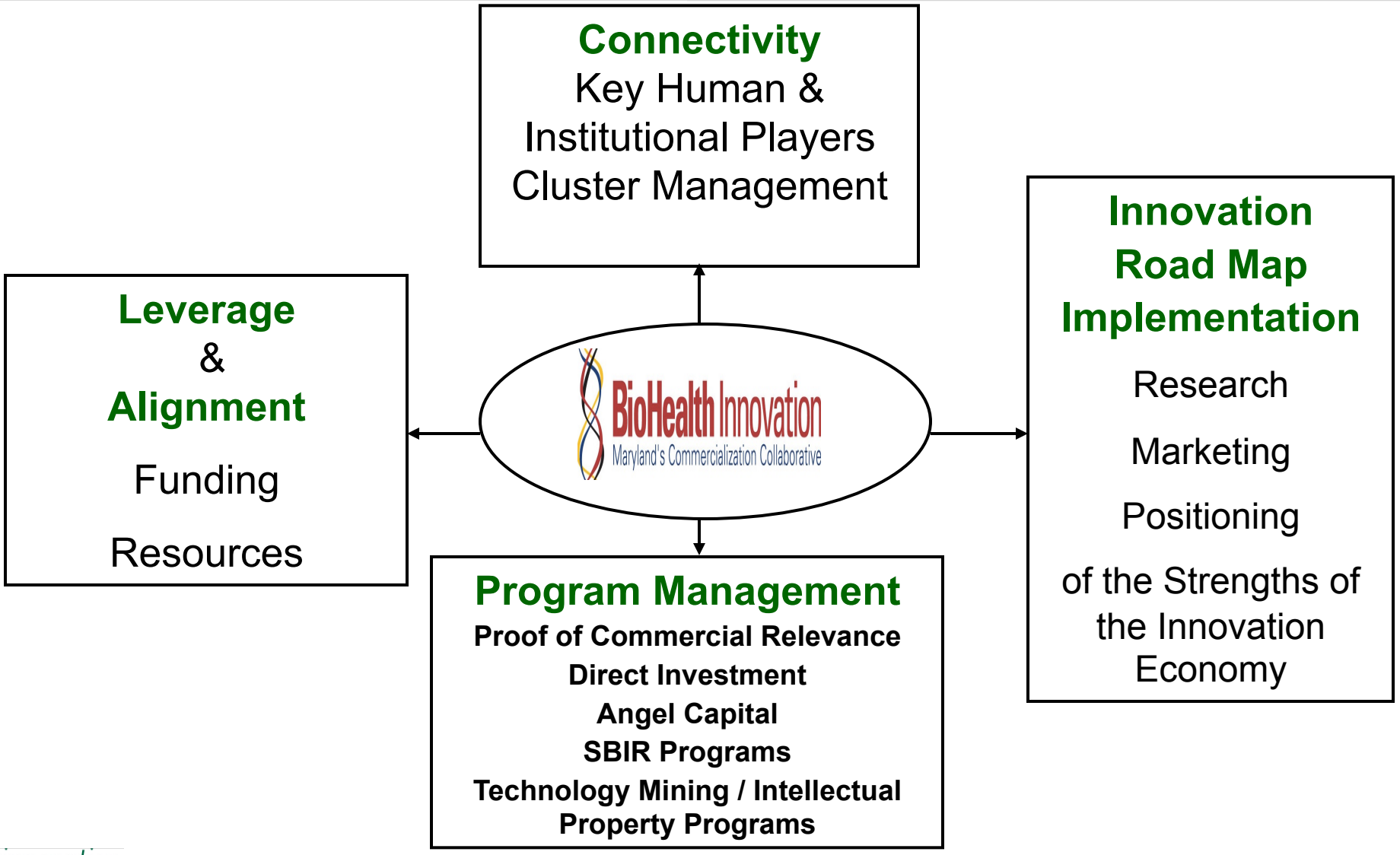
Convergence of Traditional Eco Devo & IBED

	Traditional		Innovation
Assets:	PHYSICAL		KNOWLEDGE
Competitive Basis:	Natural resources Highways / Rail Proximity Costs	→	Specialized talent Networks, Clusters, University research, Commercialization, Market Positioning Globalization
Key values/offerings:	Business parks Incentives	→	Access to research Workforce competencies Lifestyle
Lead Organization:	Chambers / EDCs	→	Economic developers **INNOVATION INTERMEDIARIES**

What is a 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



Intermediary Best Practices

- Longevity
- Bipartisan Support & Champions
- Independent Organizations
- Continuous Reinvention
- PRIVATE SECTOR LEADERSHIP
- Understand Return On Investment
- Sustainability In Funding
- Accountable
- Innovative
- Effective Leadership

Innovation Intermediary Commercialization Services

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 – Proof of Commercial Relevance			
Full Scale Production	Production	Sales and Distribution	Business Growth
Maturity	Production Support	Market Diversification	Business Maturity

Successful Funding Models

Ohio Third Frontier
Innovation Creating Opportunity

$700M 5-yearBond Issue
62% Taxpayer vote approving

KANSAS BIOSCIENCE AUTHORITY

$581M 15 year Wage-tax TIF

TNInvestco

TTDC
TENNESSEE TECHNOLOGY DEVELOPMENT CORPORATION

$160M VC Premium insurance
Tax Incentives

POSITIVELY MINNESOTA
Department of Employment and Economic Development

$60 Million
Angel Tax Credits

GPIC Greater Philadelphia Innovation Cluster for Energy Efficient Buildings
A U.S. DOE Energy Innovation HUB

$129M E-RIC Grant

U.S. State Innovation Programs

KANSAS BIOSCIENCE
AUTHORITY

Regional IBED Intermediaries

Innovation Works

Northeast Ohio IBED Intermediaries

NorTech, (the Northeast Ohio Technology Coalition) is a nonprofit Technology-Based Economic Development (TBED) organization that champions growth in Northeast Ohio's 21 county region. Foundation funded.

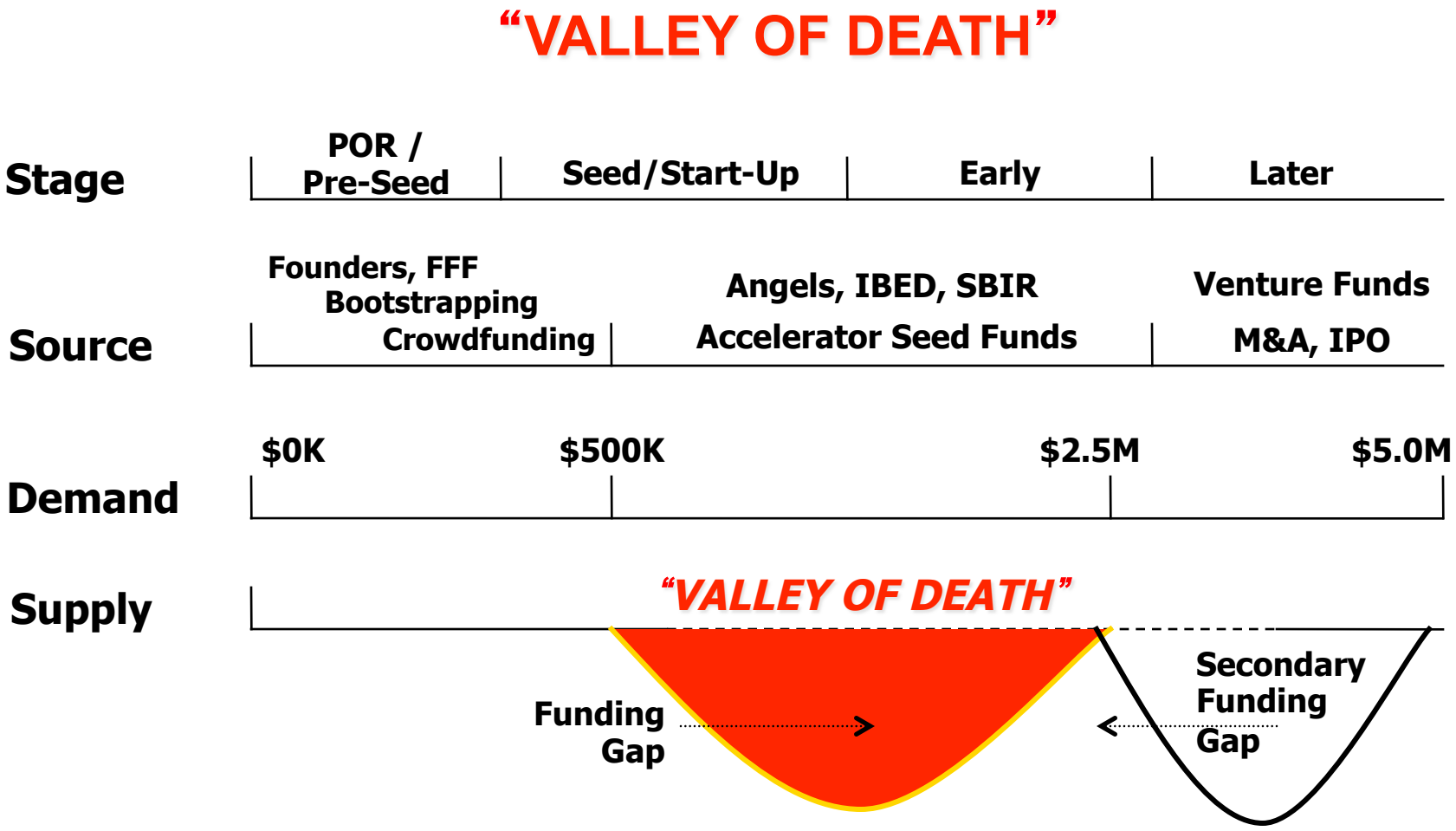
JumpStart is creating economic transformation in Northeast Ohio by providing resources to entrepreneurs to grow their high potential, early stage companies.

BioEnterprise is a business formation, recruitment, and acceleration initiative designed to grow health care companies and commercialize bioscience technologies

Team NEO advances Northeast Ohio's economy by attracting businesses worldwide to the 16-county Cleveland Plus region.

Cleveland Clinic Innovations advances commercial oriented innovation and transforms promising therapies, devices and diagnostics into products by creating spin-off companies, licensing to established companies and enabling equity partnerships.

Innovation Capital Valley of Death



Bootstrapping

The term comes from the German legend of Baron Münchhausen pulling himself out of the sea by pulling on his own bootstraps.

Definition: *"The act of starting a business with little or no external funding"*

Crowdfunding

Crowdfunding—as its name implies—aims to reach a funding goal by getting many investors to put in small amounts.

Does Seed Investing REALLY Create Jobs?

Innovative Small Business Facts

•Firms with fewer than **500 employees** accounted **for 64% of net new jobs from 1993 to 2008**. Source: SBA

•**SMEs employ over 50%** of the country's private sector workforce, hire 40 percent of high tech workers, such as **scientists, engineers and computer workers**. Source: SBA

• The number of **women-owned firms continues** to grow at twice the rate of all U.S. **firms (23 percent vs. 9 percent).** Source: SBA

•Small business has created about **2 of every 3 net new jobs** in the United States since at least the early 1970s

•**70%** of SMEs say retaining customers cheaper than getting new customers Source: NFIB

•**7 out of 10** new employer firms last at least two years, and about half survive five years. Source: SBA

Public Investment In Job Creation

Category	CDVCA*	State of PA	State of MI	State of UTAH	Stimulus Bill
Funds Invested	$26M	$90M	$291M	$60M	$800B
Jobs Created	3.700	8,150	28,854	2,047	1,000,000 To 4,000,000
$ Per Job Invested	$7,100	$11,000	$11,728	$29,300	$800,000 To $200,000

*Community Development Venture Capital Association

Top 10 States for Venture Capital

State	2010 VC Raised	1970-2010 VC Invested/Companies	Public Co's VC Backed # of Jobs/ U.S. Revenues	Cost of 1 Job Created per VC $ invested
CA	$11.6B	$215.7B / 9,827	2,822,345/$846B	$74,846
MA	$2.5B	$53.6B / 2,860	775,151/$190B	$69,324
TX	$981M	$27.7B / 1,743	1,129,551/$243B	$24,525
NY	$1.4B	$25.2B / 1,799	656,632/$188B	$38,384
WA	$634M	$15.B / 837	778,579/$256B	$20,293
CO	$483M	$15.1B / 793	162,720/$45B	$92,812
NJ	$469M	$14.6B / 788	328,429/$66B	$44,464
PA	$559M	$13.3B / 1,130	783,527/$238B	$16,930
IL	$732M	$9.8B / 726	256,750/$63B	$38,693
NC	$529M	$8B / 475	195,973/$42B	$40,835

53

Source: PWC/NVCA 2011

Innovation Funding Continuum

DREAM	CONCEPT	APPLIED	COMMERCIAL RELEVANCE	STARTUP	ROLL OUT	GROWTH
FoundersFFF Bootstrapping Crowdfunding	Seed	Accelerator	IBED	Federal	ANGEL	VC
  Friends & Family SERIES Fools by Neil Simon crowdfund KICKSTARTER RocketHub	antera gestão de recursos criatec jumpstart First Round CAPITAL Delaware Innovation Fund Bio Advance	startup bootcamp techstars seedcamp springboard(); DREAMIT VENTURES Y Combinator PIPELINE KTEC'S ENTREPRENEURIAL FELLOWSHIP	Tekes VINNOVA cotec Portugal Associação Empresarial para a Inovação Ohio Third Frontier Innovation Creating Opportunity Ben Franklin Technology PArtners i2E INNOVATION TO ENTERPRISE MICHIGAN ECONOMIC DEVELOPMENT CORPORATION Maryland TEDCO Technology-Development-Corporation	SBIR & STTR TIP Technology Innovation Program SBA U.S. Small Business Administration USDA Rural Development	eban World Business Angels Association MAG MID-ATLANTIC ANGEL GROUP JumpStart NEW JERSEY ANGEL NETWORK LORE ASSOCIATES RobinHood VENTURES New York ANGELS	Latin American LAVCA Venture Capital Association abvcap Brazilian Private Equity & Venture Capital Association ABVCAP Index Ventures Investec Wealth & Investment intel NEA BATTELLE VENTURES

Six Distinct Organizational Paths for Entrepreneurs

- Lifestyle business
- Small business
- Scalable startup
- Buyable startup,
- Large company,
- Social entrepreneur

Incubation – The Trend

1959: 1st incubator - Batavia, New York

1980: 12 incubators in the United States

1985: NBIA formed

1990: Dotcom boom, VC's began in-house incubator programs to grow their own companies to invest in

1995: Innovation & Commercialization Centers

2000: The Bubble Burst some incubators disappear

2010: The emerging accelerators & bootcamps

Startup Bootcamp

Business Incubation Today

- **41,000** startups using 1,200 incubators across the U.S.
- Incubator company survival rate after **5 years = 87%**
- Non incubator survival rate = **44%**
- 2009 - EDA invested **$80.7 million** in incubators which produced **8,746 jobs**

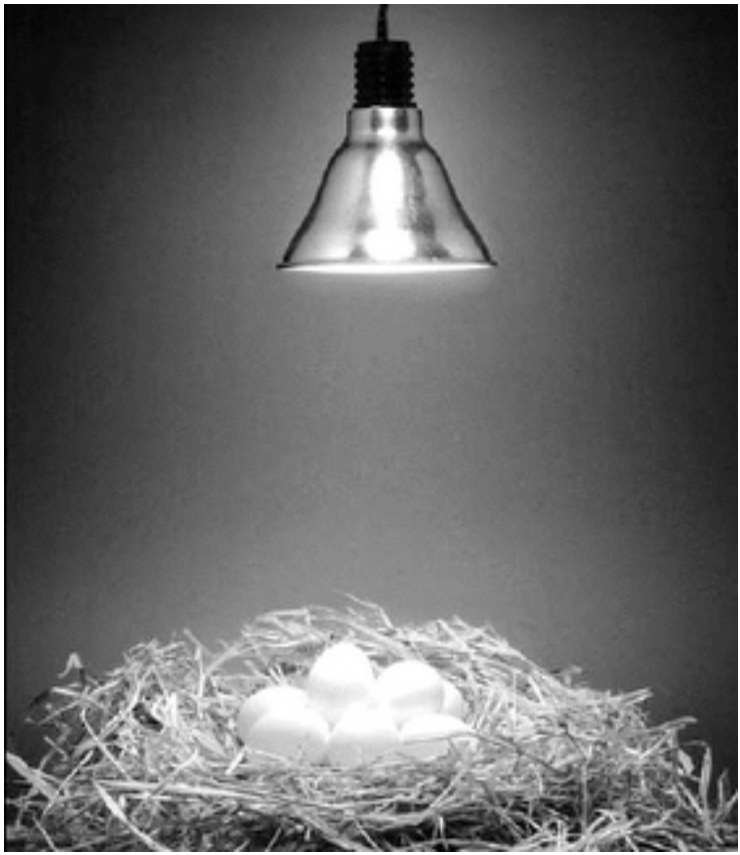
Source NBIA & Bloomburg Businessweek

Innovative Incubation - Incubation Collaboration Program

Cross-incubator network and resource sharing among regional incubators

Collaboration includes :

- *Technology sourcing*
- *Universities sources of innovation*
- *IP or licensing counseling*
- *Patent analysis and application*
- *Implementation of transferred technology*
- *Training programs*



Key Difference Between Incubators and Accelerators

Incubators - incubators allow for slower growth, although they typically have some requirements as to how long companies can remain in the incubators before they graduate.

Accelerators - as their name implies, focus on an intense, boot-camp-like experience to get new businesses up and running in a matter of months.

Accelerators

seedcamp

startup bootcamp

techstars

Fast Track

Czech Accelerator

CZECHINVEST
Investment and Business Development Agency

CERTICON

imagemetry
image processing, computer vision

boldbrick

cognitivesecurity

Y Combinator

DREAMIT VENTURES

New Entrepreneurial Acceleration Programs

Mentorship programs:

- Help startups ideate
- Form founding teams
- Build initial products
- Provide seed capital
- Provide office facilities
- Mentoring
- Guest lectures

techstars

PIPELINE
KTEC'S ENTREPRENEURIAL FELLOWSHIP

DREAMIT VENTURES

Innovation 2 Enterprise - Oklahoma

•Private not-for-profit Oklahoma corporation focused on wealth creation by growing the technology-based entrepreneurial economy.

•Works directly with entrepreneurs, researchers and companies to assist in help them commercialization of technologies, launch and grow new businesses and access needed capital.

•Funding
  - •Proof of Concept Fund
  - •Seed Capital Fund
  - •Angel Network

•Entrepreneurial Development

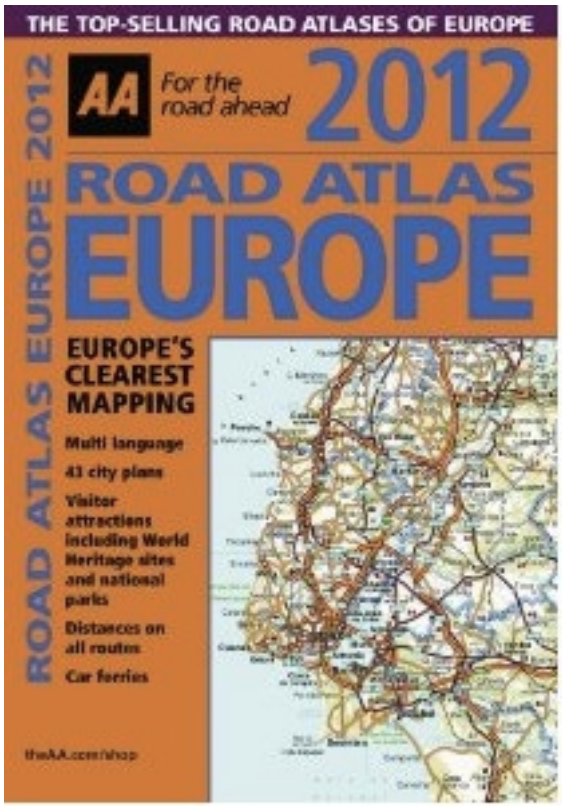
i2E
INNOVATION TO ENTERPRISE

What Is A Road Map…..Why Is It Needed?

- A roadmap answers the ***question "Where do we want to be and how to we get there?"***
- A cluster roadmap ***provides strategies and action*** plans to best ***achieve a vision of the future shared by a critical mass*** of industry-related organizations.
- The strategies and action plans are developed according to the unique strengths of the cluster and region as compared to a global market opportunity.

Innovation America: Innovation Road Map Process

1. Literature Review of Comparables
2. Key Stakeholder Interviews/Recommendations
3. Asset & GIS Mapping/Cluster Analysis
4. Innovation Benchmarking/Index (Peer 2 Peer)
5. Innovation & Entrepreneurship Resource Guide
6. Innovation Economic Development Organizational Analysis
7. Innovation & Commercialization Program Gap Analysis
8. Innovation Ecosystem Public Policy Recommendations
9. Innovation Strategic and Organization Plan
10. Operations & Implementation Plan
11. Branding & Marketing Strategy
12. Economic Impact Analysis - Celebrate Your Success



A Region's Solution

www.biohealthinnovation.org

Health Regional Innovation Cluster (H-RIC)

"The Region"--Central Maryland

Unrivaled Research Assets
Unfulfilled Commercial Promise

JOHNS HOPKINS
UNIVERSITY

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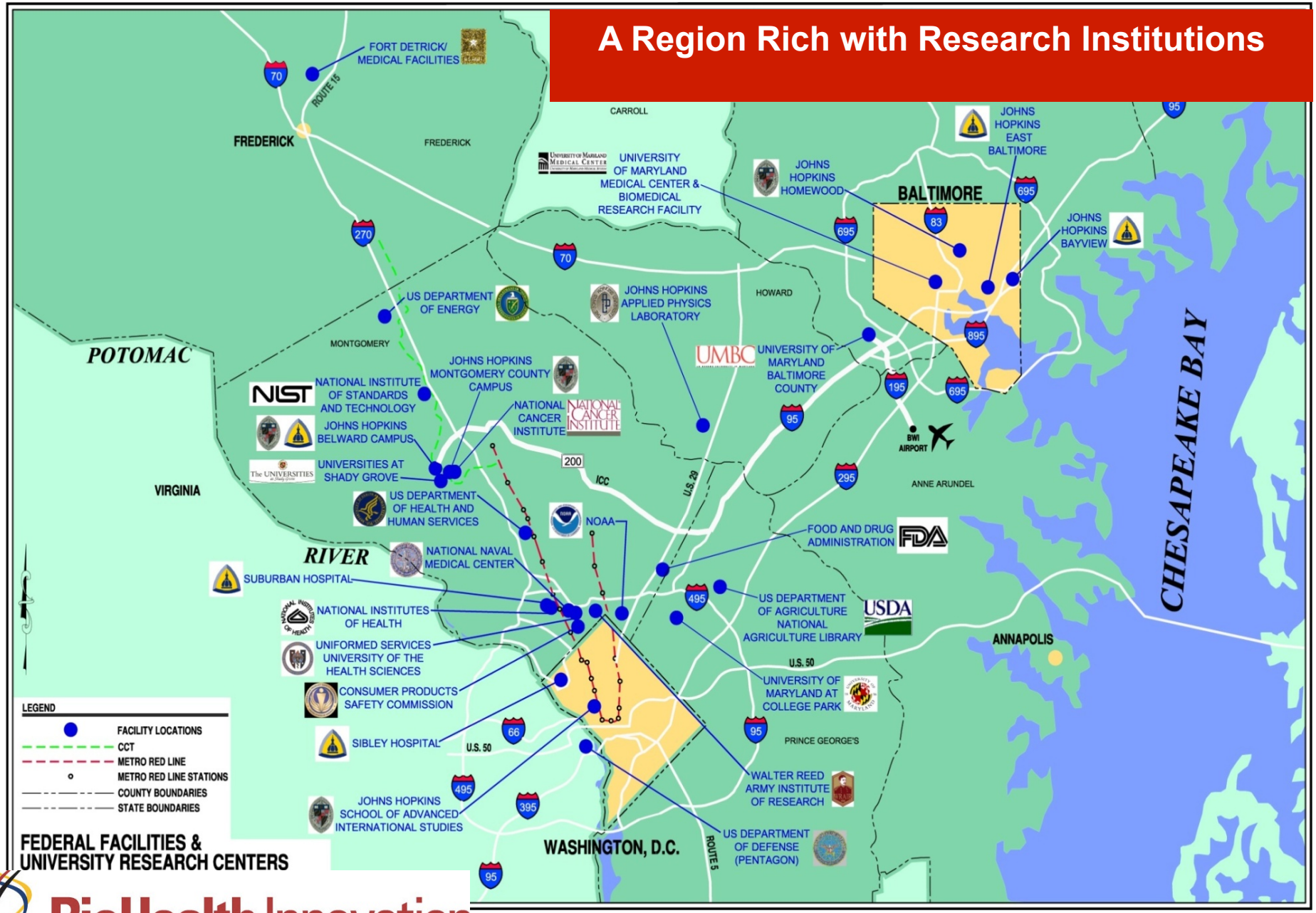
A Region Rich with Research Institutions



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The Problem--A National Challenge

America is falling behind the world it invented because we are:

- **Out-educated**
- **Out-built in infrastructure**
- **Out-invested in R&D**

by countries in both Europe and Asia.

-- *"That Used to Be Us"* by Thomas Friedman, 2011

The Reverse Brain Drain

- ***"Opportunities in China Lure Scientists Home"*** --The Washington Post, February 20, 2008

- American returnees to India cited as reasons for going "back" to where they came from:
  - ***better economic opportunities***
  - ***family ties***
  - ***better access to markets***

Alignment of National, State and Local Priorities and Leadership

National Priorities

- **America Invents Act**
- **National Center for Advancing Translational Sciences in NIH** (NCATS)
- **A National Bioeconomy Blueprint** by January 2012
- **Presidential Memo** *"Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses"*

State Priorities

- **Maryland Biotechnology Investment Tax Credit** ($6 m/yr)
- **BioMaryland 2020** blueprint
- **Invest Maryland** ($70 million)
- The Maryland Venture Fund

Local priorities

- BioHealth Innovation
- Accelerate innovation and grow tax base
- Create "live, work and learn" life science centers
- Develop transit systems

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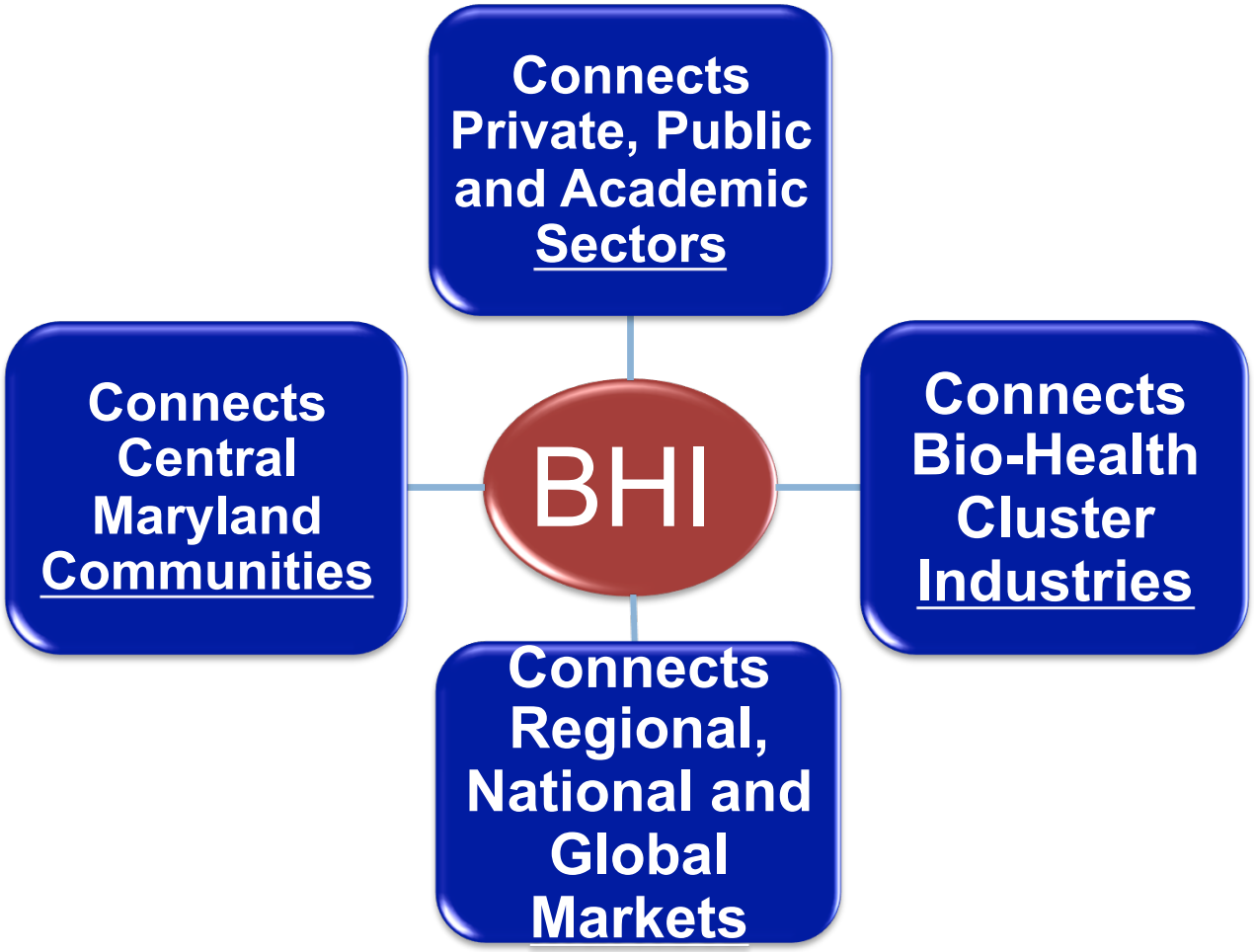
BHI: A Regional Innovation Intermediary that Connects Sectors, Industries, Communities, & Markets



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Challenges to Innovation Economy

- Lack of connection of innovation resources
- Lack of an entrepreneurial culture and C-level executives
- Lack of early-stage funding for commercializing technologies
- Lack of a STEM Workforce

H-RIC Value Proposition

- Connects regional innovation assets
- Develops an entrepreneurial talent and support pipeline
- Attracts funding for technology commercialization
- Develops a continuum of innovation workforce

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BHI Founding Partners and Sponsors

BHI Funding Sources:

- private sector
- universities and foundations
- public sector

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BHI H-RIC Industry Focus

- Biotechnology
- Medical Devices
- Healthcare Services
- E-Health
- Mobile Health
- Electronic Medical Records
- Health Informatics
- BioHealth Cyber Security

How does BHI work?

Commercialization Pipeline

Sources and evaluates biohealth intellectual properties (IP)

Funds market-relevant IP

Grows and markets businesses and products

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Entrepreneur-in-Residence (EIR)

- A BHI program that **proactively** identifies and commercializes **market-relevant** intellectual properties from federal labs, universities and research companies.

- An EIR is an expert who combines scientific, financial and managerial experience to perform due diligence and biohealth project-focused companies.

"It's motivating that such talented and experienced executives are choosing to devote their time to identifying opportunity at our university."

Linden Rhoads
UW Vice Provost—Commercialization

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Partnership Intermediary Agreement (PIA)

- PIA between BHI and NIH's Office of Technology Transfer that supports the 27 NIH institutes $3 billion intramural research and the Food and Drug Administration.
- To **promote and foster cooperative research and accelerate technology commercialization** among NIH/FDA, businesses, and universities.

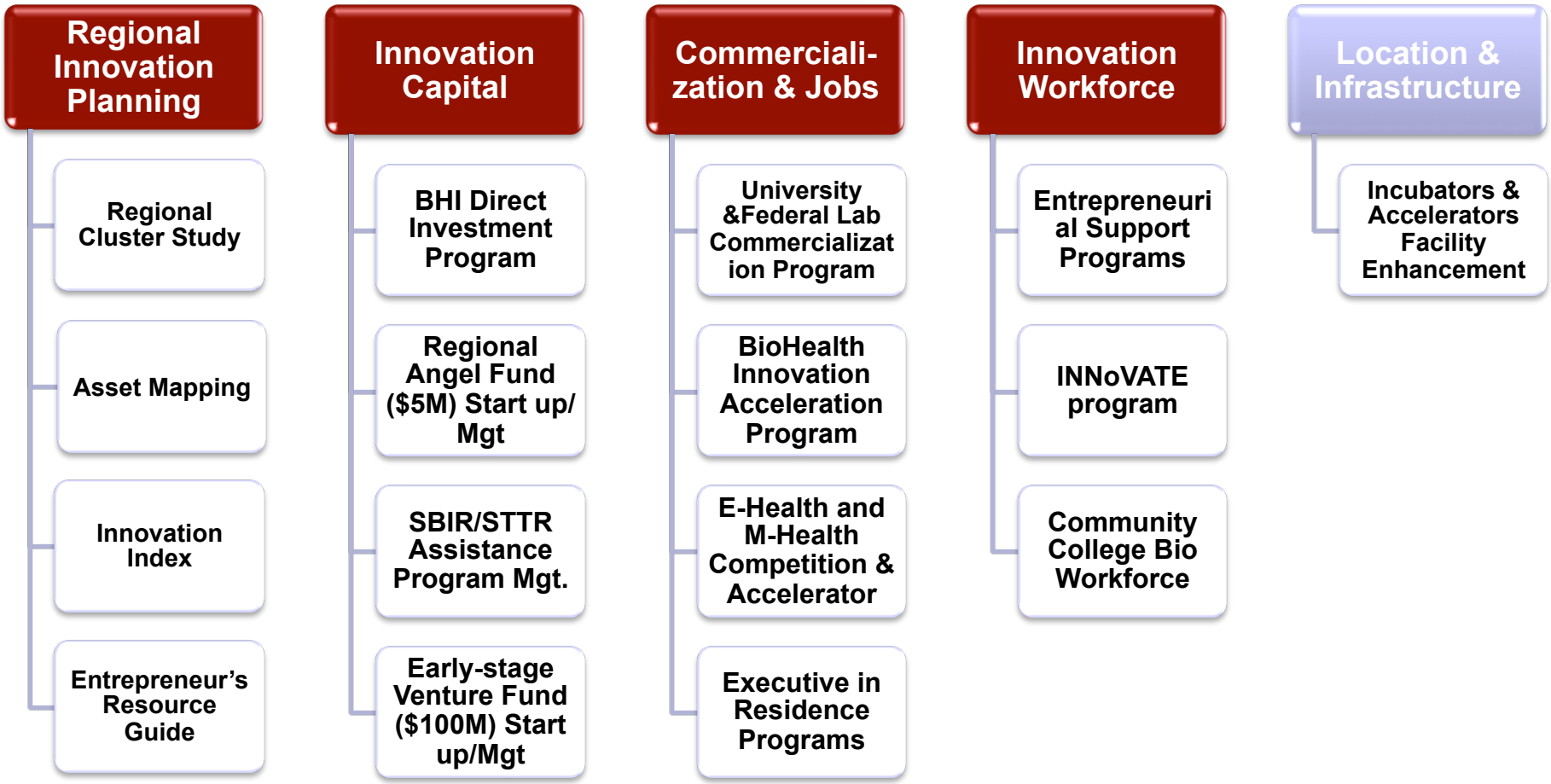
Connect Funding Sources at Every Stage to Fill Gaps

DREAM	CONCEPT	APPLIED	COMMERCIAL RELEVANCE	STARTUP	ROLL OUT	GROWTH
FoundersFFF Bootstrapping Crowdfunding	Seed	Accelerator	IBED	Federal	ANGEL	VC

MHCPDC

DED

BHI Road Map & H-RIC Implementation Strategy



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Regional Life Science Centers

LifeSci Village™ at FDA

Baltimore's Bayview Research Cluster

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Great Seneca Science Corridor

University of MarylandbioPark

Science + Technology Park at JHU

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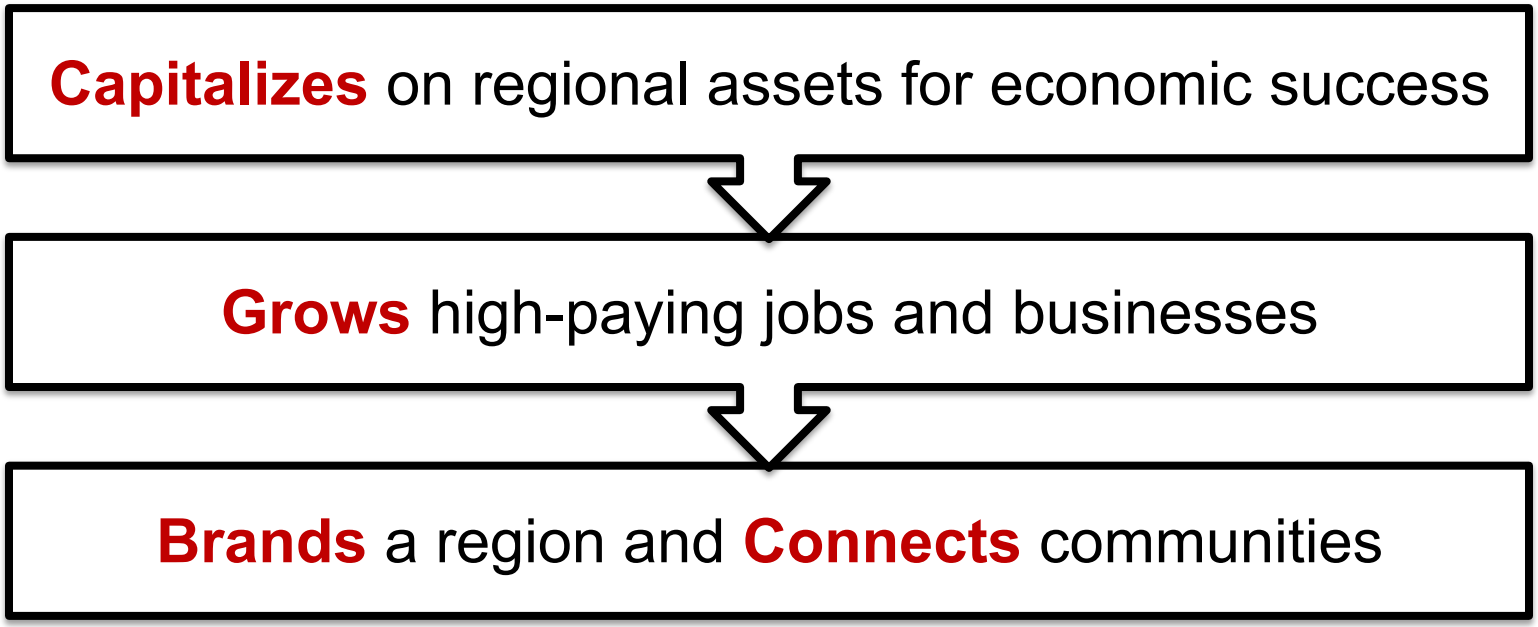
H-RIC Model The Bottom Line



…and Benefits human health!

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Paddling Together For Success

Are You Pulling Alone Or……

Pulling Together For Success

…..Are We Pulling Together ?

Bill Gates - Microsoft

"Never before in history has innovation offered promise of so much to so many in so short a time."

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