

Innovation Based Economic Development

“A Key to Smart Growth”

Richard Bendis

President & CEO, Innovation America

Riga, Latvia

September 11th, 2013



The World According to Friedman:

Hot, Flat, and Crowded



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**

The New Locational Competition

Definition: The competition for economic activity

Intense and growing competition among nations and regions for well paid jobs and improving living standards.....



The Six Driving Forces of Change

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



Global Innovation Index

33

Latvia

45.2

Institutions • Human capital and research • Infrastructure • Market sophistication • Business Sophistication
• Knowledge and technology outputs • Creative outputs

Top 10 Countries

Rank	Country	Score
1	Switzerland	66.6
2	Sweden	61.4
3	United Kingdom	60.3
4	Netherlands	61.1
5	United States of America	60.3
6	Finland	59.5
7	Hong Kong (China)	59.4
8	Singapore	59.4
9	Denmark	58.3
10	Ireland	57.9

Top 10 European Countries

Rank	Country	Score
1	Switzerland	66.6
2	Sweden	61.4
3	United Kingdom	60.3
4	Netherlands	61.1
6	Finland	59.5
9	Denmark	58.3
10	Ireland	57.9
12	Luxembourg	56.6
13	Iceland	56.4
15	Germany	55.8

Innovation Growth in Latvia

Latvia has **lowest** indicator of innovation in the EU

BUT

Over the last 5 years, Latvia has **outperformed** the EU 27 average

Average EU Innovation Growth Indicator: **0.85%**



Latvian Innovation Growth Indicator: **2.71%**



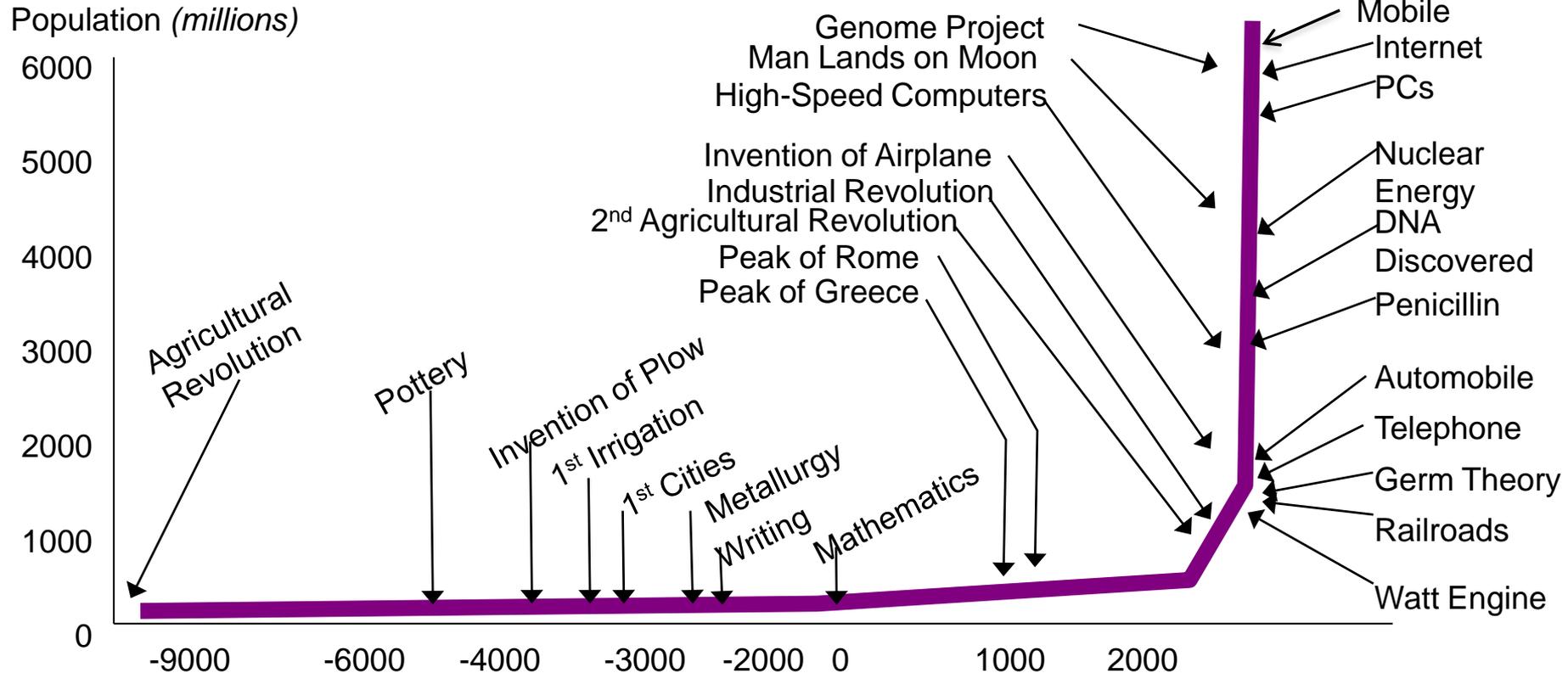
How Leading Regions Respond to the Innovation Imperative

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



Growth of World Population and the History of Technology



Source: Milken Institute, Robert Fogel/University of Chicago

Why is Innovation Essential?



“INNOVATION
DISTINGUISHES BETWEEN A
LEADER AND A FOLLOWER.”

- STEVE JOBS

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

National Development Plan of Latvia for 2014-2020

Latvia has suffered from the recent economic crisis: social divisions are greater, the grey economy has expanded, and the development of **innovation** has slowed.

Potential exists:

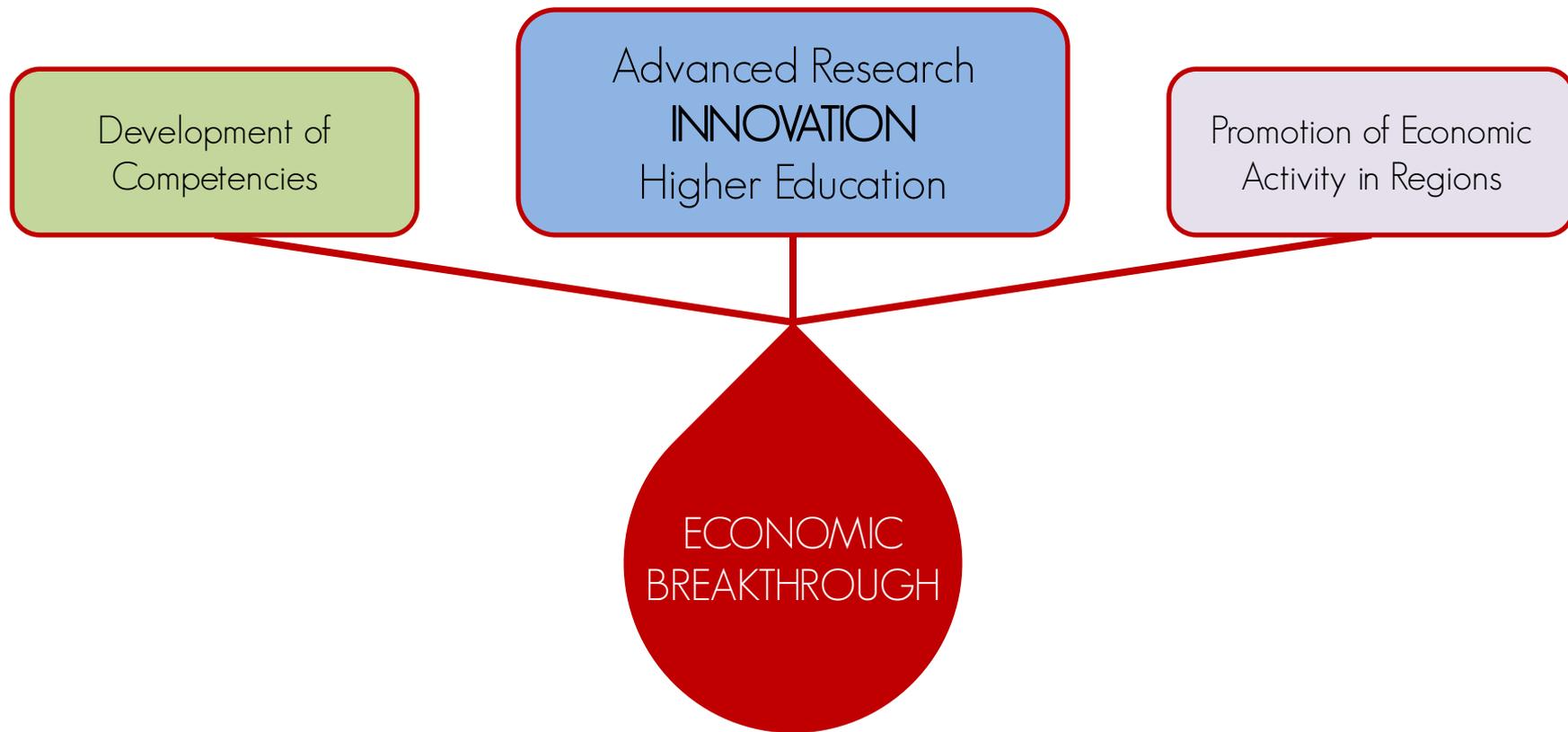
- Higher education is a coveted export
- Significant research is co-founded by the private and academic sectors.
- Focus on green energy

Plan Recommendations:

- Shift from an efficiency-driven to innovation-driven economy.
- Create an outstanding business environment

Does innovation need and deserve a higher priority within the National Development Plan for Latvia?

National Development Plan of Latvia for 2014-2020



Social Entrepreneurship in Latvia

- Unemployment remains high in 2013
- New concept in Latvia
- Social enterprises generate significant social, environment, and community impact.
- Necessary for integrating disadvantaged people through work.
- Helps lower unemployment

“Doing good and doing well can coexist”

Tech Transfer in Latvia

- In 2010, 67 research projects were prepared for commercialization
- 36 patents applications (5 international)
- 51 businessmen and scientist collaboration agreements

The Euro in Latvia

Latvia will enter the eurozone in 2014. It's already blasting its economy forward with new tax laws and encouraging investment. But some say this could be dangerous and the country risks becoming "the new Cyprus."



<http://www.dw.de/latvia-the-eurozones-new-tax-haven/a-16960333>

Bill Gates

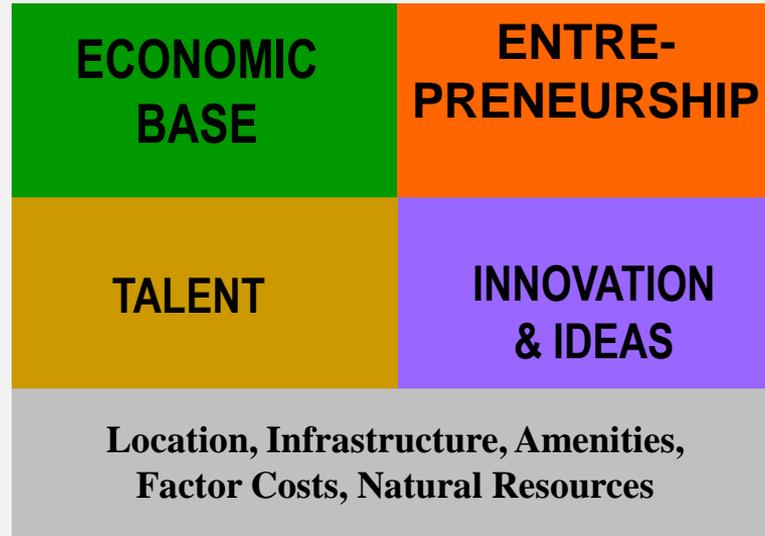
“Never before in history has innovation offered promise of so much to so many in so short a time.”



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*



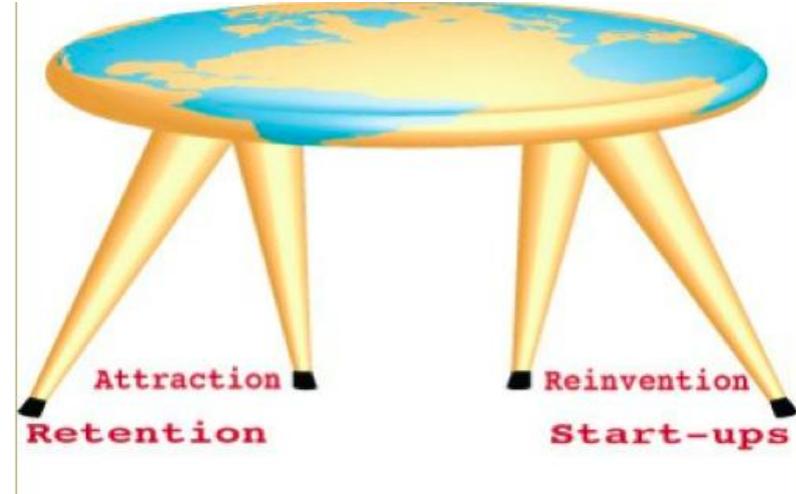
*The basic conditions defining the
economic milieu of the region*

*Your capacity to create
companies wholly new or
from existing firms*

*Your capacity to innovate
and generate new ideas*

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!



Economic Gardening



Economic Gardening is a philosophy to support local businesses that centers on emerging Stage One companies and Second Stage growth companies through the support of the entrepreneurs who run them. Specific tools are applied that are most relevant to the needs of these entrepreneurs to find new customers, increase revenue, share best practices and ultimately create primary jobs that support the local economy.

Convergence of Traditional Economic Development & Innovation-Based Economic Development

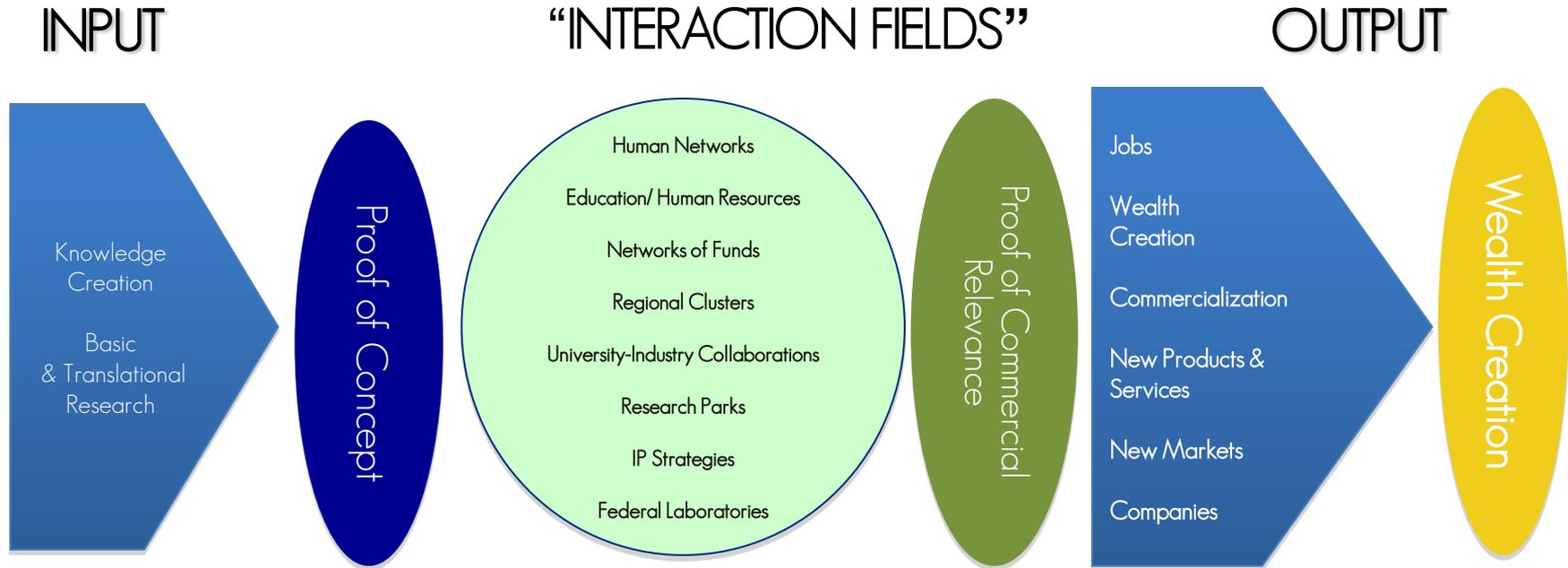
	<u>Traditional</u>		<u>Innovation</u>
Assets:	PHYSICAL		KNOWLEDGE
Competitive Basis:	Natural Resources Highways/Rail Proximity Costs		Specialized talent networks, Clusters, University research industry partnerships, Commercialization, Market Positioning Globalization
Key values/offerings:	University Research Parks, Incentives		Research Parks, Workforce Competencies, Lifestyle, Economic Gardening, Economic Developers
Lead Organization:	Chambers/EDCs		INNOVATION INTERMEDIARIES

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 companies grow**
- Diversify both rural and urban economies
- Develop global innovation network

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.

The Secret to building an Innovation Ecosystem

- There is none.
- Key Ingredients: Universities, Governments, NGOs, Incubators, and Startups
- These are nothing compared to:
A committed group of people with a high degree of trust, collaboration, sharing, and interdependency

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)

What is a Regional Innovation Intermediary?

- An organization at the Center of the region's, state's and country's efforts
 - Align local technologies, assets and resources
 - Advance Innovation
- Regionally-oriented
- Private-public partnership, 501(c)(3) nonprofit
- Market-driven, private sector-led
- Neither a government initiative, nor a membership organization

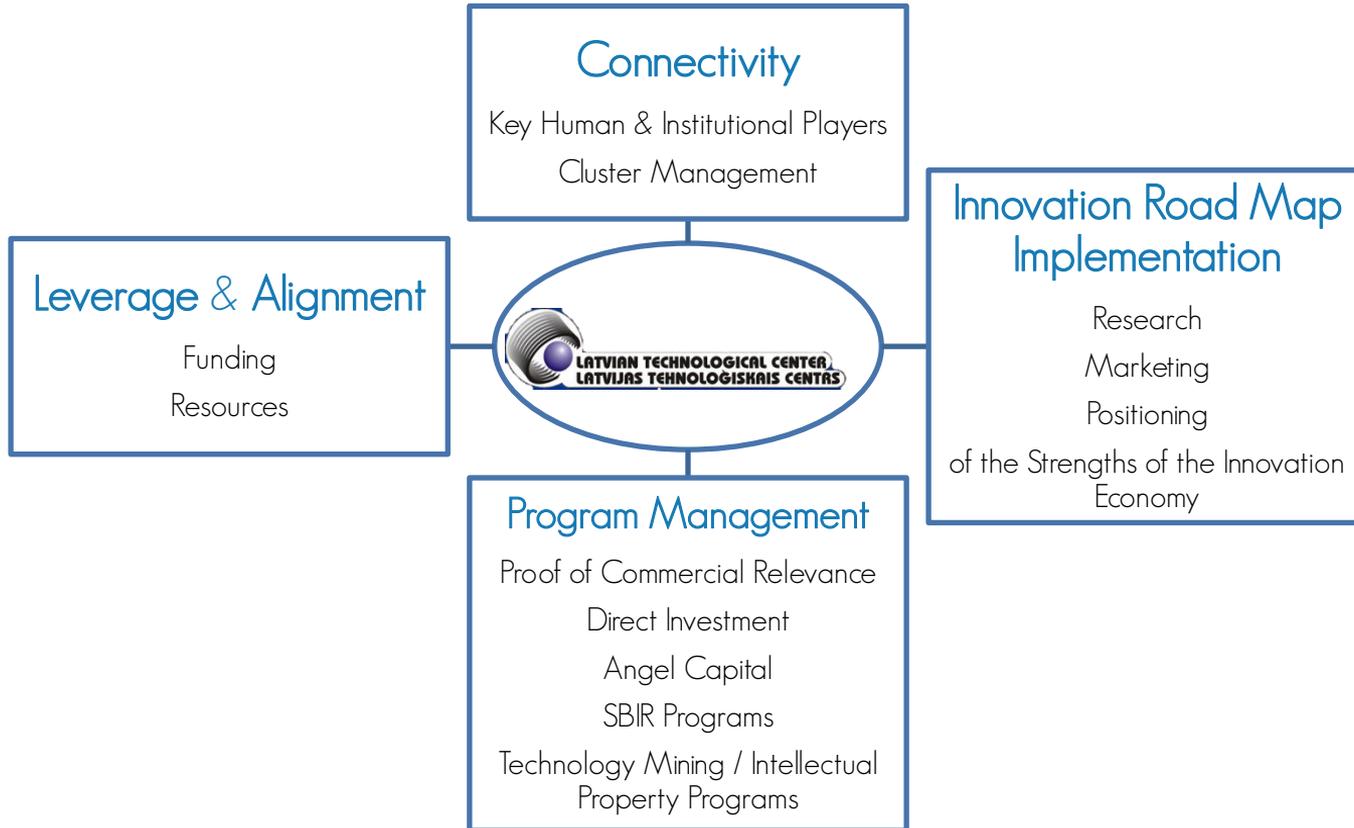


Intermediary Best Practices

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



21st Century Intermediary



US Regional IBED Intermediaries



Innovation Support Structures in Latvia



US Small Business Facts

- SME's employ over 50% of the country's private sector workforce, hire 40% of high tech workers, such as **scientists, engineers, and computer workers.**
- The number of **women-owned firms continues** to grow at twice the rate of all U.S. **firms (23% vs. 9%)**
- 70% of SME's say retaining customers cheaper than getting new customers.
- **7 out of 10** new employer firms last about two years and about half survive five years.



Latvia SME Statistics

	Number of Enterprises			Number of Persons employed			Value added		
	Number	% Share	EU-27 % Share	Number	% Share	EU-27 % Share	Billion €	% Share	EU-27 % Share
SMEs	67.908	99,7	99,8	435.479	77,8	66,9	6	70,0	58,4

Latvia Population (2011): 2.058 million

Six Distinct Organizational Paths for Entrepreneurs

- Lifestyle Business
- Small Business
- Scalable Startup
- Buyable Startup
- Large Company
- Social Entrepreneur



Small Business Biggest Obstacles

- Lack of willingness or ability to take **risks**
- **Time and effort** required
- Raising **capital**
- **Business management** skills
- **Knowledge** about how to start a business
- **Industry and market** knowledge
- **Pressure** to keep a stable job

Keys to Small Business Success

Courage

The willingness to take risks

Perseverance

The capacity to power through tough times

Ambition

The insatiable drive to reach your goal

Understanding

The knowledge to make wise business decisions

Innovation

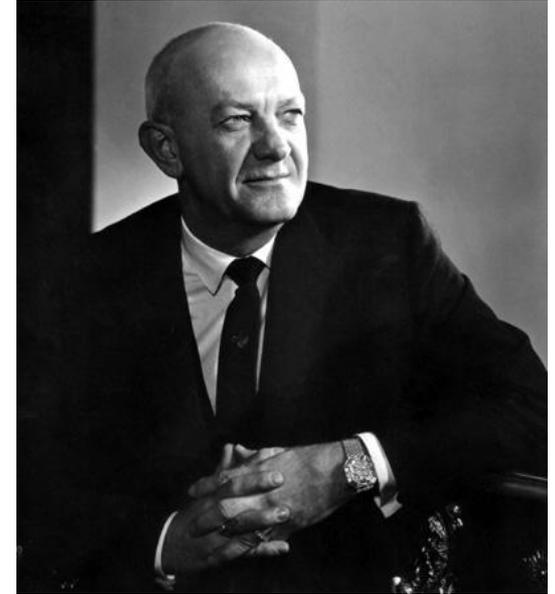
The ability to improve on existing ideas

Ewing Marion Kauffman

“Treat others as you want to be treated.”

“Share life’s rewards with those who make them possible.”

“Give back to society”



Innovation Paradigm Shift

PROOF OF CONCEPT

(Technological Feasibility)

“It Works!”



PROOF OF COMMERCIAL RELEVANCE

(Market Pull)

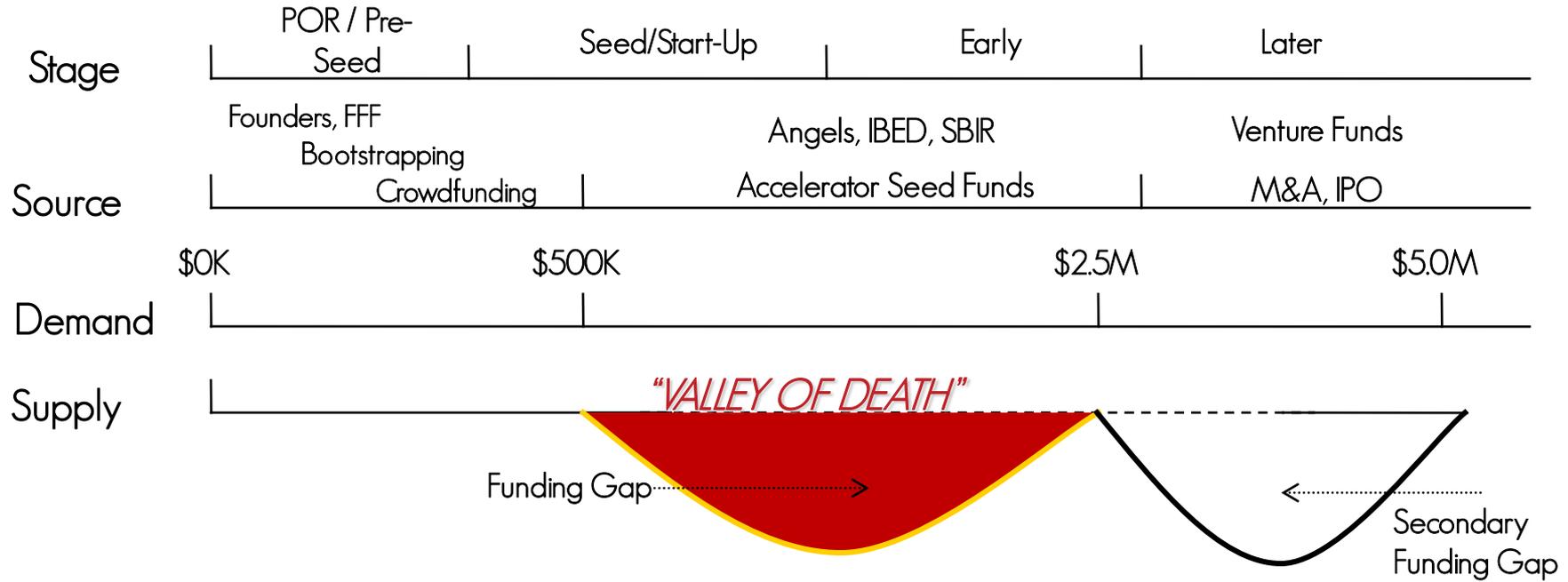
“I’ll Buy It!”



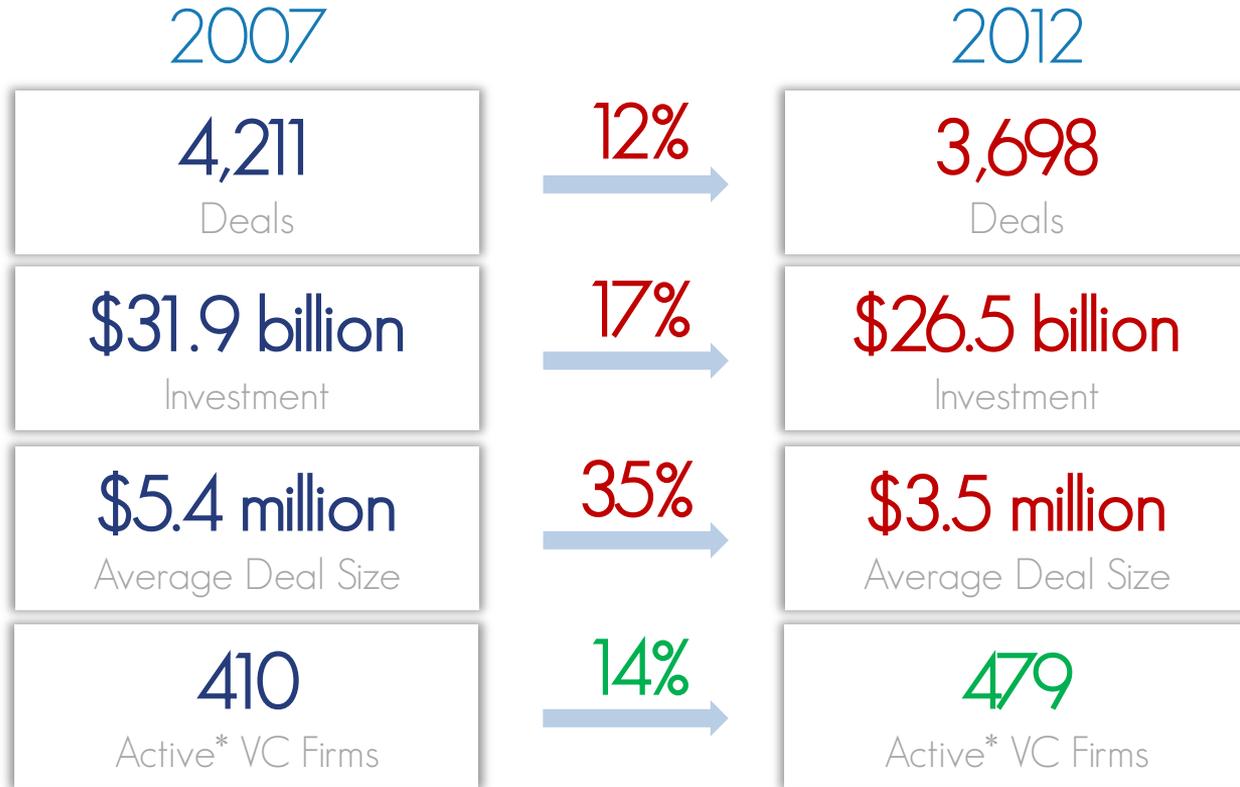
The Historic  Garage
invent

CASH IS KING!

Innovation Capital Valley of Death



US Venture Capital Investment



*VC firms completing 4 or more deals per year

Latvia VC and Private Equity Country Attractiveness Index

	2013	2009
Overall Score:	60	73
Peer Group Ranking: *	4th	4th

Strengths: Investor Protection and Corporate Governance, Taxation

Challenges: Depth of Capital Market, Human and Social Environment

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”

Accelerators are the New B-School

As more young entrepreneurs find success from their business accelerator contacts, the usefulness of traditional business school is put into question.



Seed Accelerator Model May Be Relevant



- > 130 accelerators exist & spreading rapidly
- Could grow > 400 to 500 in 5 years
- Focus on emerging tech sectors

Seedcamp Accelerator Numbers



- To date invested in a total of 93 companies (10 so far in 2013)
- More than 7876 applications
- Backed founders from 36 different countries
- Companies raise between \$330,000 and \$2 million within 3-6 months
- 80% of companies in 2012 have raised follow up funding

The Increasing Importance of Angels

- 300,000+ angels are investing \$30 billion per year in close to 50,000 ventures
- 100+ Angel Groups formed nationwide in last 5 years
- In many cases, Angel Groups are becoming alternatives to early stage VCs and incubators
- No dedicated Angel Funds in Maryland

Angel Fund Competitive Advantages

2007

258,200

Angel Investors

57,120

Companies Financed

\$27.3 billion

Angel Investment

4%

17%

20%

2012

268,160

Angel Investors

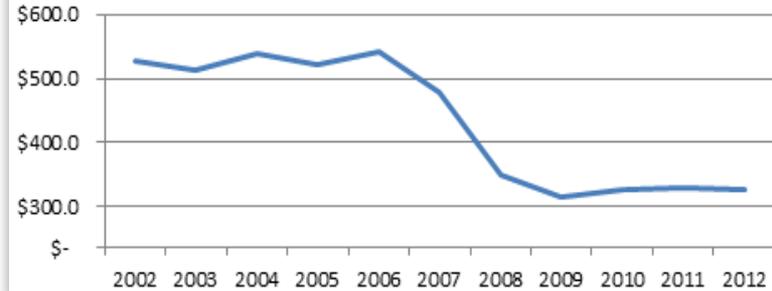
67,030

Companies Financed

\$21.8 billion

Angel Investment

Average Size Investment (thousands)



Six Entrepreneur Skills that Angel Investors Love

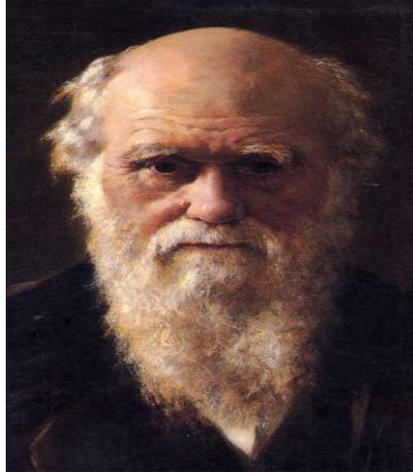
1. Talks & writes well
2. Networked & connected
3. Full disclosure attitude
4. Values intellectual property
5. Not in a heated rush
6. Realist



Change is Inevitable

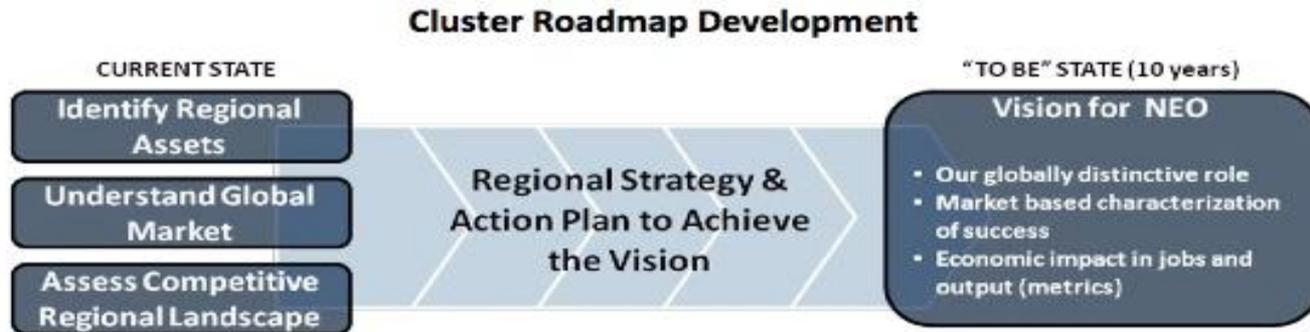
“ It is not the strongest of species that survive, nor the most intelligent, but the ones most responsive to change.”

Charles Darwin



What is a Roadmap and 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 Roadmap

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

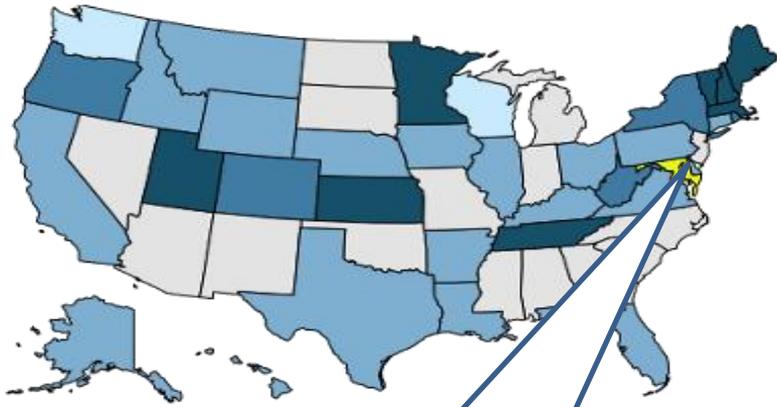


“There’s No Good Idea that Can’t Be Improved Upon”

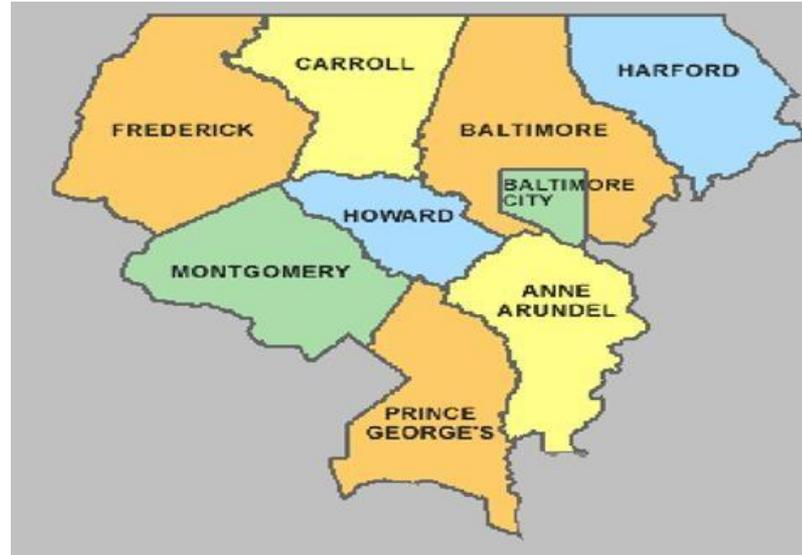


Michael Eisner

Maryland



Population:
5.828 million people



State of Maryland: Federal & University Resources



59 Federal Laboratories, Centers, & Institutes in Maryland
Maryland Federal R&D investment exceeding \$12 billion annually



JHU and USM represent another \$3.5 billion in annual R&D

Alignment of National, State, and Regional Policies



**Obama
Administration**



**Governor
O'Malley
(Maryland)**



**County Executive
Ike Leggett
Montgomery County**



**Stephanie Rawlings -
Blake
Mayor of Baltimore**

- Link Both State, County & City Strategies to Obama Administration Objectives
- Develop an integrated Regional BioHealth Economic Development and Transit Strategy
- Present the “Regional Job Generating BioHealth and Transit Plan” to the White House & partner with federal agencies and other stakeholder organizations as a “Showcase Model.”
- Develop structure & governance for the regional BioHealth innovation intermediary
- Obtain Priority Federal Funding for Region’s BioHealth Industry-Federal Labs-University Innovation Intermediary Pilot Plan
- Obtain Priority Federal Funding for the region’s Innovative “State of the Art” Comprehensive Rapid Transit Vehicle Plan (CCT et al)
- Develop a pilot BioHealth-Regional Innovation Cluster (H-RIC) program

What is a Regional Innovation Intermediary?

- An organization at the Center of the region's, state's and country's efforts
 - Align local technologies, assets and resources
 - Advance Innovation
- Regionally-oriented
- Private-public partnership, 501(c)(3) nonprofit
- Market-driven, private sector-led
- Neither a government initiative, nor a membership organization



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 spin-offs from federal and university R&D

BHI Value Proposition

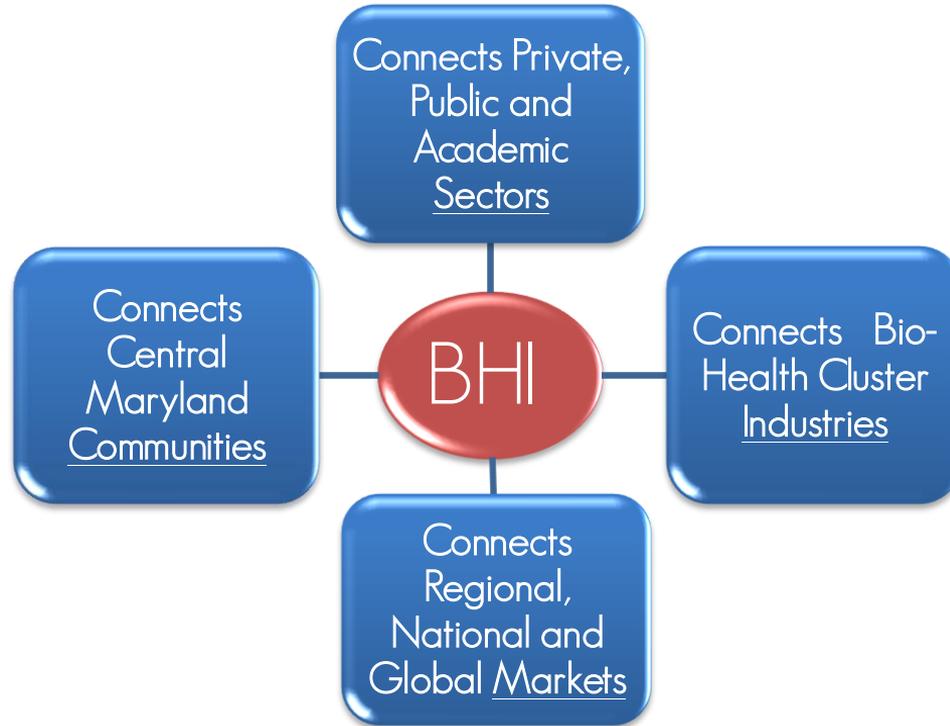
Connects regional innovation assets

Develops an entrepreneurial talent and support pipeline

Attracts funding for technology commercialization

Evaluate commercially relevant federal and university technology for new spin-offs

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



Regional BioHealth Ecosystem Partners

ACADEMIA

- RESEARCH/T2
- LIFELONG LEARNING
- ECONOMIC DEVELOPMENT

INDUSTRY

- PROFIT
- PROCESS
- PRODUCT

INSEPARABLE
MISSIONS

GOVERNMENT

- SUSTAINABILITY
- INFRASTRUCTURE SUPPORT
- ECONOMIC POLICY

FOUNDATIONS

- ECONOMIC GROWTH
- COMMUNITY INVESTMENT
- REGIONAL COLLABORATION

BHI Partners and Sponsors



BHI/EIR Technology Focus

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





Capital Sources by Investment Stage

4/12/2013

Pre-Proof of Concept \$25K - \$1.5M (over 5 years)	Translational Research / Proof of Concept \$15K - \$750K (over 3 years)	Proof of Commercial Relevance / Pre-Seed \$3K - \$500K	Seed / Start-Up \$50K - \$1.5M	Early Stage \$200K - \$2M	Later Stage \$2M+
<ul style="list-style-type: none"> ■ NIH R01 ■ NIH R03 ■ NIH R21 ■ Maryland Innovation Initiative (MII) (Managed by TEDCO) 	<ul style="list-style-type: none"> ■ NCATS Cures Acceleration Network (CAN) ■ SBIR/STTR Grant Phase I ■ Maryland Stem Cell Research Fund (MSCRF) ■ TEDCO Technology Validation Program ■ JHU-Coulter Translational Research Partnership 	<ul style="list-style-type: none"> ■ Maryland Industrial Partnerships (MIPS @ UMD) ■ TEDCO Technology Commercialization Fund ■ MII Phase 2 Grant ■ MII Phase 3 Grant ★ BHI SBIR/STTR Commercial Relevance Program (CRP) ★ BHI Commercial Relevance Fund (CRF) 	<ul style="list-style-type: none"> ■ Dingman Center Angels (UMD) ■ Propel Baltimore Fund ■ BioMaryland Center Biotechnology Development Awards - Translational Research ■ SBIR / STTR Phase II ★ BHI Central Maryland Angel Fund 	<ul style="list-style-type: none"> ■ Invest Maryland: Maryland Venture Fund ■ BioMaryland Center Biotech - nology Development Awards - Commercialization ■ Maryland Health Care Product Development Corporation ■ Abell Venture Fund ■ MMG Ventures LP ■ TDF 	<ul style="list-style-type: none"> ■ Maryland Venture Fund Authority ■ ABS Capital Partners ■ Greenspring Associates ■ Novak Biddle Venture Partners ■ Sterling Venture Partners ■ Harbert Venture Partners ■ JMI Equity ■ New Enterprise Associates (NEA)

Associations

- Association of University Resource Parks (AURP)
- Angel Capital Association (ACA)
- Mid-Atlantic Venture Association (MAVA)
- National Venture Capital Association (NVCA)
- Association of University Technology Managers (AUTM)
- Licensing Executive Society (LES)

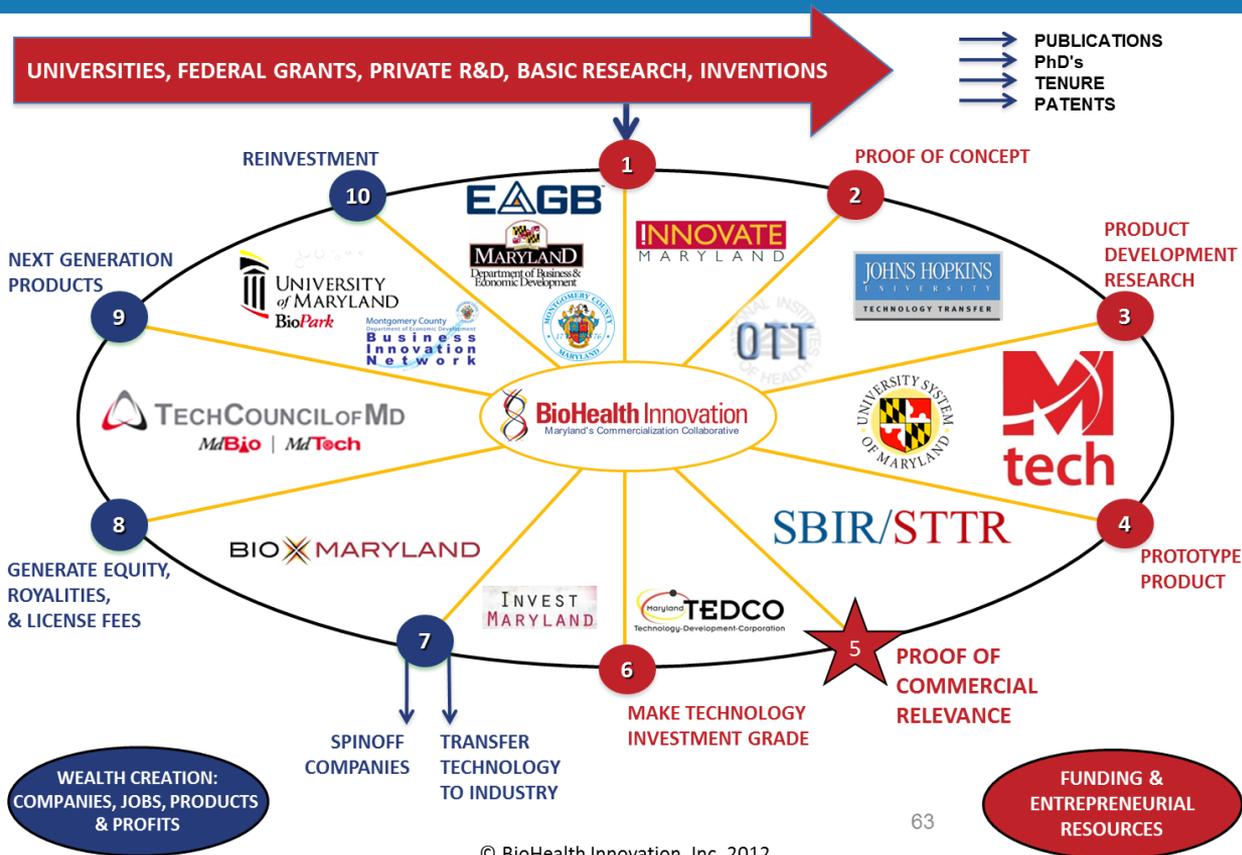
Funding Type Key

- Academic
- Associations
- ★ BioHealth Innovation, Inc.
- Private Capital
- State of Maryland
- Federal
- Economic Development

Tax Credits

- Maryland Biotechnology Investor Tax Credit
- Montgomery County Biotechnology Investor Tax Credit

BHI Commercialization Model



Entrepreneur-in-Residence

- A team leader who combines scientific, financial/VC and entrepreneurial management experience to:
 - Perform due diligence
 - Develop biohealth project-focused companies

Proactively identifies and commercializes **market-relevant** intellectual properties from:

- Federal Labs
- Universities
- Private Sector



Todd Chappell

Progress (1 Year into Program)

- 97 Innovations identified and initially screened
- 63 Progressed to Secondary Analysis (Safety & Efficacy Profiling, IP Diligence, Regulatory & Development Pathways) and 12 to Primary Analysis
- Entered into consulting agreement with Perceptive Navigation
- Entered into agreement with Advanced Personalized Diagnostics, LLC
- Option Agreement for stem cell technology (JHU)
- Goal to fund the operation of more EIRs

EIR Expectations



- Assist OTT in the evaluation of existing technologies
- Provide an entrepreneurial perspective to OTT in its evaluation of new licensing proposals
- Advise OTT on opportunities for new ventures based on NIH/FDA technologies
- Assist with developmental strategies
- Mentor scientists to help ensure their research becomes commercially valuable



- Identify market viable innovations from NIH and other regional institutions
- Act as liaison among regional biohealth stakeholders and NIH
- Primary and secondary commercial analysis of lead technologies
- Develop novel technologies that are at conceptual stage
- Act as catalyst to license most interesting technologies and fund start-up companies

Key Considerations for Technology Focus

- Clear unmet need that benefits public health
- First-in-class, best-in-class therapies
- Target therapeutic areas that reflect strategic objectives
- Clinical development advantage
- Relevance to strategic needs

Small Business Innovation Research (SBIR)

- \$2.5 billion annual United States Government Program coordinated by the Small Business Administration
- Administration Provides grants or contracts to small businesses to spur technological innovation
- Grants awarded in 3 Phases between \$150,000 and \$1 million
- Non-dilutive

BHI Innovation Capital

- **SBIR/STTR Assistance Program** - The BHI SBIR/STTR Assistance Program (in development) will provide assistance to biohealth-driven companies in the Central Maryland region in preparing for high-quality SBIR/STTR grant proposals for submission to federal funding agencies.

Metrics:

- Review **60** federal funding proposals per year
 - Conduct **20** intensive assistance projects in 2013
 - Track success measures through scoring, dollars, and leverage assistance.
- **BHI Angel Fund** - The BHI Angel Fund (in development) will be a member-managed private equity investment fund serving the Central Maryland region entrepreneurial needs.
 - **BHI Commercial Relevance Investment Fund** - The BHI Commercial Relevance Investment Fund (in development) will help grow, attract, retain and connect Central Maryland biohealth innovation-based companies that need financing to grow their enterprises.

Health IT...Booming

- Increased investments in the mobile and healthcare sectors helped boost the median size of angel and angel group syndicate rounds
- Mobile health technologies projected to be worth \$11.8 billion by 2018

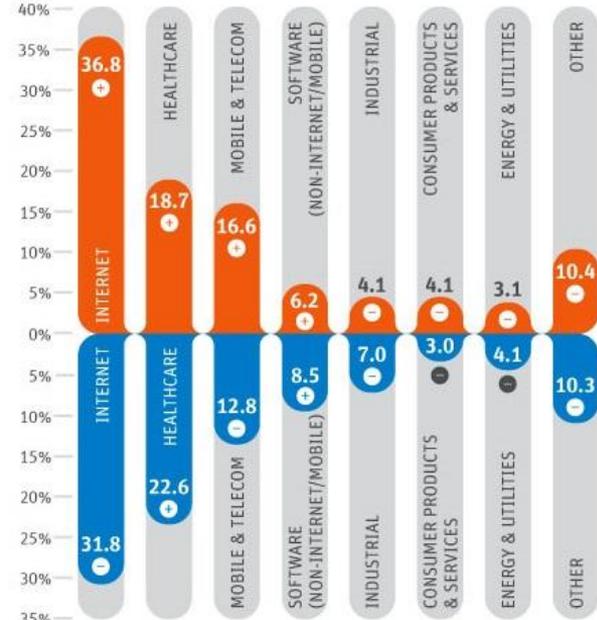
4 Mobile Sector Still Hot

Deals and Dollars



in Internet, Healthcare and Mobile

% of deals



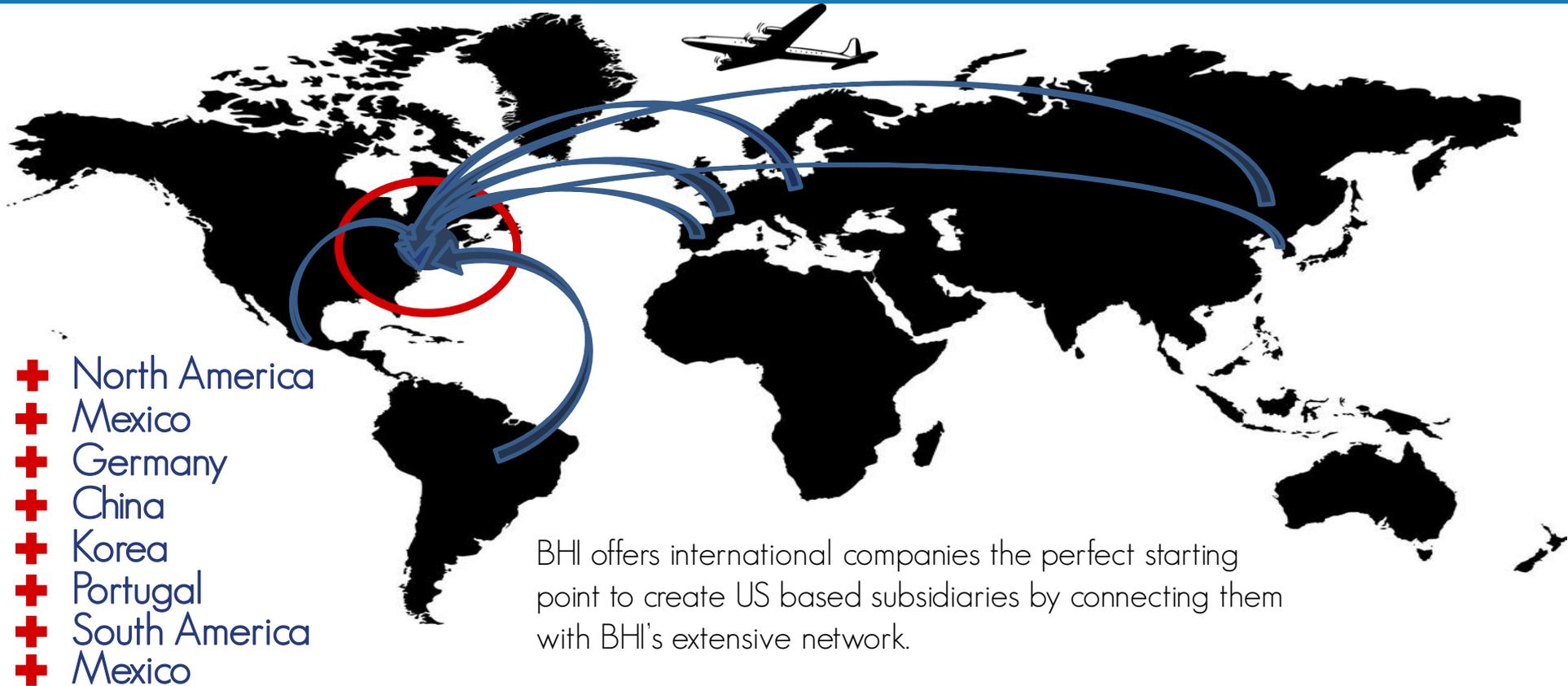
\$m invested

- + Indicates an increase over Q1 2012
- Indicates a decrease from Q1 2012

Health IT Accelerator

- ✚ A Health IT Accelerator is an intensive 12-16 week program that admits top-recruited companies and entrepreneurs, provides a curriculum and network of experienced mentors in business, marketing and product development in the Health IT arena to “accelerate” top companies.
- ✚ No HIT accelerators currently in Maryland
- ✚ Located in a Central Maryland Co-Working space
- ✚ Retain promising high growth HIT entrepreneurs in MD

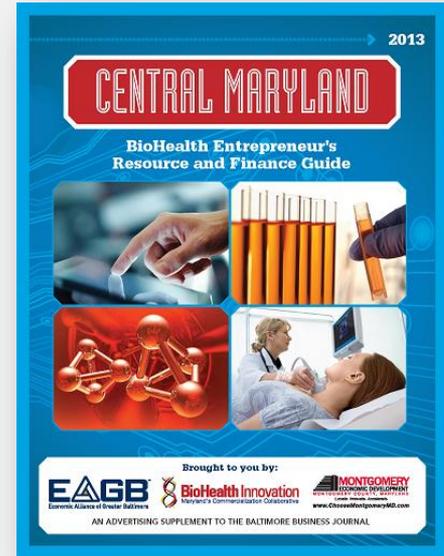
BHI Soft Landing



Central Maryland Entrepreneur's Resource and Finance Guide

“Financing and Entrepreneurial Resource for Montgomery County and the Greater Baltimore Region”

- Entrepreneur and Innovation Resource Network
- Innovator Financing Guide
- The Startup's Guide to Intellectual Property
- Federal Labs Listing



BHI: The Triple Bottom Line

Grows high-paying jobs and businesses



Expands tax base; **improves** economic vitality



...and **Benefits** human health!

Are You Pulling Alone...



Or Are We All Pulling Together for Success?



"Coming together is a beginning, staying together is progress, and working together is success."

Henry Ford



What Should Latvia Do to Grow its Innovation Economy?

- Think Globally - Act Locally
- Advanced Manufacturing Innovation
- Practice Collaborative Capitalism
- Build Upon Assets & Fill Gaps
- Grow Private-Public Partnerships
- Fully Engage Private-Sector
- Support Startups Growth into SME's & Mid-Size Companies



Contact

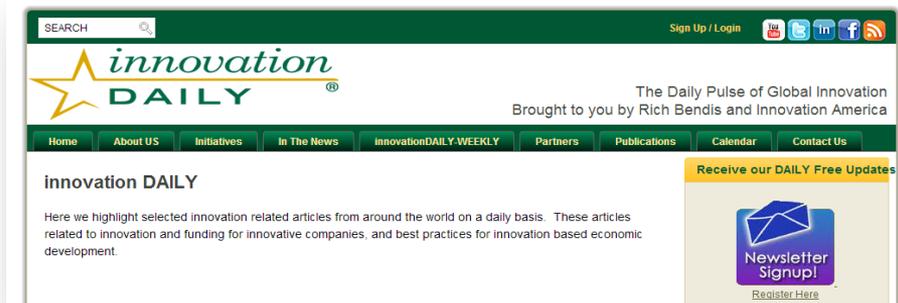
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The screenshot shows the homepage of the 'innovation DAILY' website. At the top, there is a search bar and a 'Sign Up / Login' link. The main header features the 'innovation DAILY' logo, which includes a yellow star icon. Below the logo, the tagline reads 'The Daily Pulse of Global Innovation' and 'Brought to you by Rich Bendis and Innovation America'. A navigation menu is located below the header, with links for Home, About US, Initiatives, In The News, InnovationDAILY.WEEKLY, Partners, Publications, Calendar, and Contact Us. The main content area on the left is titled 'innovation DAILY' and contains a paragraph: 'Here we highlight selected innovation related articles from around the world on a daily basis. These articles related to innovation and funding for innovative companies, and best practices for innovation based economic development.' On the right side of the main content area, there is a yellow banner that says 'Receive our DAILY Free Updates' and a purple 'Newsletter Signup' button with a 'Register Here' link below it.

www.innovationamerica.us/daily