The New Competitiveness of Brazil & Opportunities for Innovation Habitats

Presented by:
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Innovation America
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Good Morning

Rich Bendis BIO

- ✧Founder & CEO Innovation America
- ✧Editor and Publisher innovationDAILY
- ✧Active Venture Capitalist & Angel Investor
- ✧Founder & President of Innovation Philadelphia
- ✧Founder & President of Kansas Technology Enterprise Corp
- ✧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

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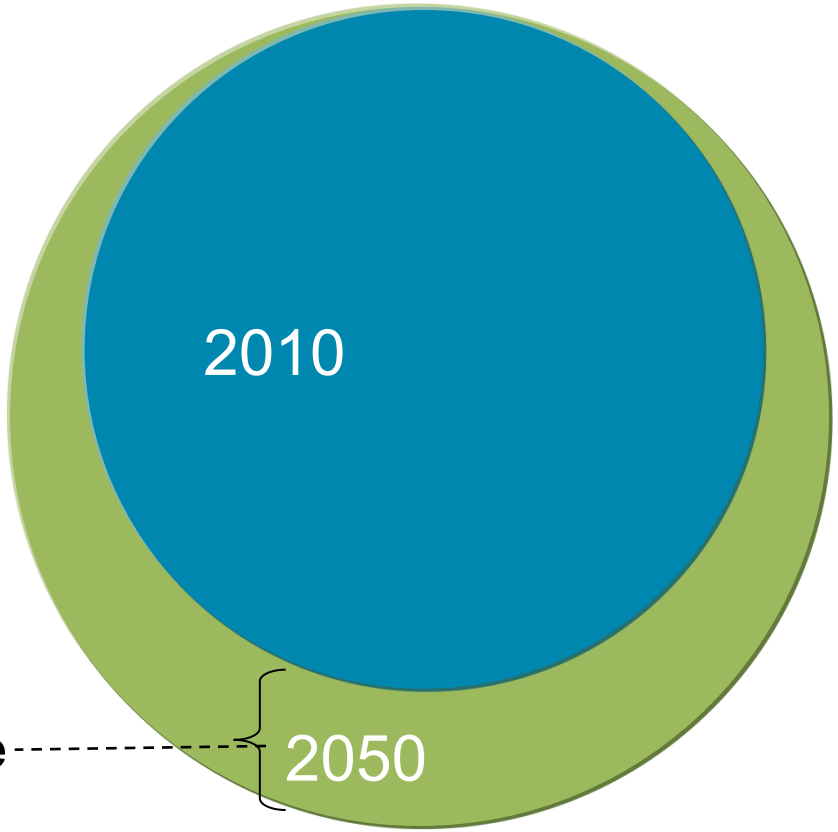
Brazil's Future is Determined By the Present

A Growing Population

World population will grow from 6,892,669,975 to 9,149,984,000



Source: Scientific American, 2010

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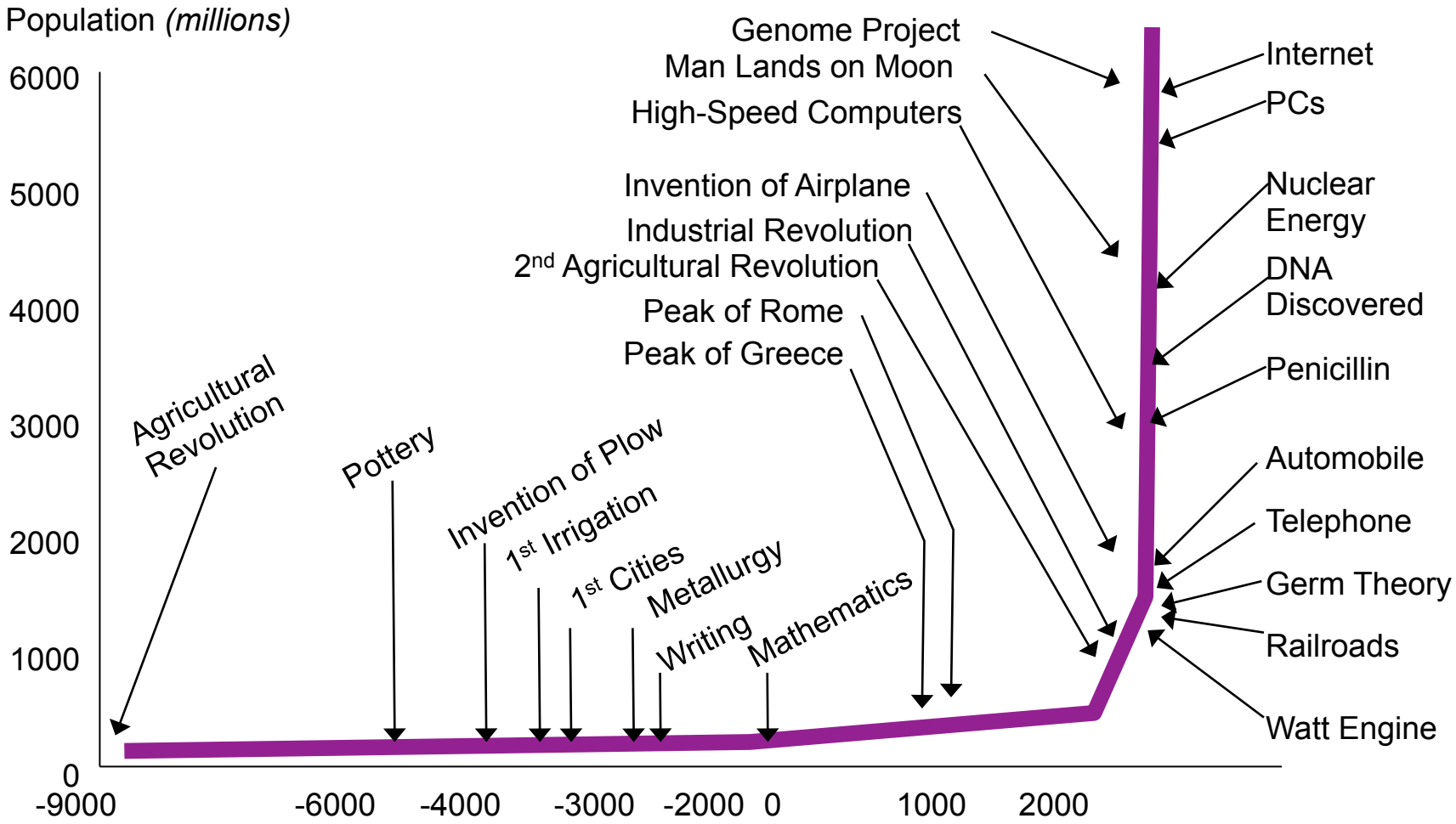
Growth of World Population and the History of Technology



Source: Milken Institute, Robert Fogel/University of Chicago

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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

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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.**

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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

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

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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

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Brazil

- Economy growing at an annualized rate of 5%
- Sao Paulo will be the fifth-wealthiest city by 2025
- Self-sufficient in oil, large new offshore discoveries in 2007 likely to make it a big oil exporter by the end of next decade
- Ranked 10th in the world with a GDP of US$1.5 trillion in 2009

Think about this

- …After US, China, India, Japan, the 5th largest population with
  191 million

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Brazil Profile

LAVCA

2011 SCORECARD

Country Profile BRAZIL

	2011	2010
Overall Score:	72	75
Regional Ranking:	2nd	2nd

Brazil's overall score falls due to a decrease in a previously perfect score on restrictions on local institutional investors. While Brazil's local pension funds have been instrumental to the growth of the local industry, their requirement to sit on investment committees represents a significant governance conflict. A number of recent initiatives signal the industry's continued development. The government defined PE/VC as a separate asset class and reduced the IOF tax to 2% from 6% on related transactions. A new self-regulation code to encourage greater transparency and disclosure requirements went into effect in March 2011, and its effects will be monitored throughout 2011.

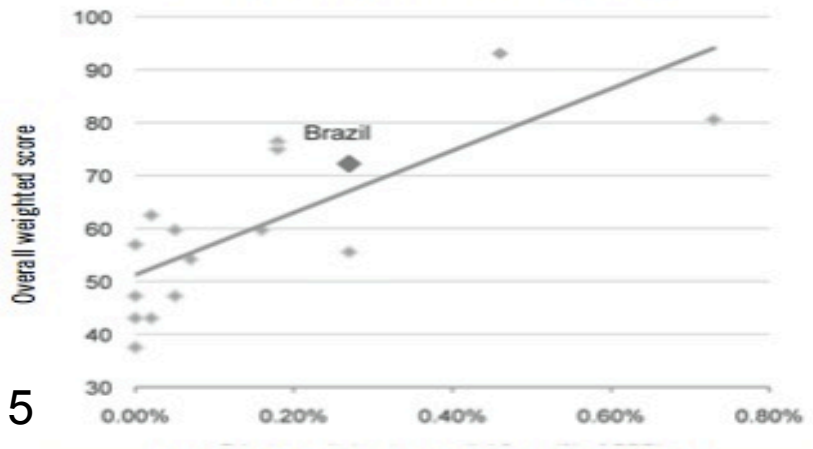
Strengths: Favorable laws on fund formation and operation and quality of accounting standards rank as the country's major strengths, though it scores strongly on the majority of indicators.

Challenges: Despite reforms, the country is still plagued by the perception of corruption and prevalence of piracy. A slow-moving judicial system also hinders the enforcement of intellectual property rights.

	score	change	
Overall score	**72**	▼	3
Laws on PE/VC fund formation and operation	4		
Tax treatment of PE/VC funds & investments	3		
Protection of minority shareholder rights	3		
Restrictions on local institutional investors investing in PE/VC	3	▼	1
Protection of intellectual property rights	2		
Bankruptcy procedures/creditors' rights/partner liability	3		
Capital markets development and feasibility of exits	3		
Registration/reserve requirements on inward investments	3		
Corporate governance requirements	3		
Strength of the judicial system	2		
Perceived corruption	1		
Quality of local accounting/use of international standards	4		
Entrepreneurship	3		

Indicators are scored from 0-4 where 4 = best score
Scores reflect the effect of double weighted indicators (see Scoring Criteria for detail)

Overall score against PE / VC investments



Brazil's Technology Innovation Law

The purpose of the legislation is to encourage more public-private cooperation by making it easier for public and private enterprises to share resources, raise capital and clarify intellectual property rights. Eight provisions are key:

1. Public research institutes are permitted to share their laboratory facilities with private-sector enterprises.
2. Public research institutes and private-sector enterprises are permitted to enter into capital relationships for the purpose of R&D.
3. Public and private partners may specify the ownership of any future intellectual property rights by contract.
4. Public research institutes and their employees must protect trade secrets associated with their research
5. .Public research institutes may license their technologies to private enterprises.
6. Individual public researchers may share in the economic returns associated with the successful commercialization of a new product.
7. Public researchers may take leave from their public position in order to work for a private enterprise.
8. Government development agencies should provide financial and human resource assistance in support of private-sector R&D.

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Brazil's Innovation Law

GOAL:

•Improve BRAZIL'S the country's capacity to generate and commercialize technology.

•Offers incentives to increase the establishment of cooperative links between public scientific and technological institutions (STI) and enterprises. It also regulates the use and negotiation of IP generated from collaborative activities between STIs and firms.

FACTS:

•To improve its innovative capacity, Brazil needed to encourage more firms to invest and become involved in technological developments.

•The Ministry of Science and Technology estimated that:

- •70% of R&D in Brazil is financed with public resources.
- •80% of Brazilian researchers carry out their activities within public institutions, concentrating on the production of scientific papers.
- •BRAZIL produces 1.5% of the worldwide total of papers in scientific fields – a percentage similar to Korea.
- •However, whereas the number of USPTO patents granted to Brazilian inventors only increased from 33 in 1980 to 113 in 2000, in Korea the increase in the same period was from 30 to 3,472.

China

- $124B stimulus 2010/2011; will spend $170B in 2017 (from $26B 10 years earlier)
- Approximately 400M people lifted out of poverty (active, capital rich, growing middle class)
- Energy demands up 4x in next 10 years
- Rampant capitalism – Public equity markets “hot”
- 3 biggest IPOs (in history) in China/Brazil

Think about this:

- One 1M person city created every two weeks

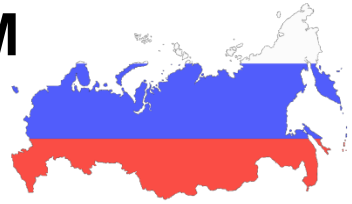
India

- Per capita income : US $950 (38,084Rs)
- Purchasing Power Parity $3400.
- GDP: $1,367 B growing at 8-10%/ annum (currently 8.77%
- Foreign currency reserves increasing : $279B
- Median age group: 24 years - vibrant workforce
- 293M people will move out of poverty, 583M enter middle class, 23M Indians to become world's most affluent within 15 years
- Combined net worth of the 100 wealthiest people climbed to an all-time high of $300B in 2010

Think about this

- Poised to become 5th largest consumer economy ($1.5T) by 2025

Russia



- Population set to decline from 143M (2010) to 111M (2050)
- 2010 value of the biopharmaceutical market estimated to be approximately US $17.2B compared with US $10.4B in 2006
- Ranked 12 out of 25 in terms of active clinical trials with 1,084 sites with an average relative annual growth rate of 33%
- Launched a national 10-year plan to promote biotechnology including development of special economic zones for innovative biotechnology and several bioparks
- Nanotechnology – the engine of innovation and growth of technology building an industry by 2015 with a €30B initiative

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

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Trends & Predictions in Open Innovation

- **Innovation involves more than just R&D (seriously!)**
- **Not enough invented here so look outside**
- **Ideas are precious so manage them**
- **Experiment with Collective Intelligence and crowdsourcing**
- **Innovate the Innovation Process (and do it properly for a change)**
- **Innovators learn to love measurement and ROI**
- **The future is cheap … and coming from the bottom of the Economic Pyramid**
- **Don't be surprised that your CEO gets very interested in innovation**
- **Innovation with full-time staff & a full-time trained staff are best.**

Source: Mark Turrell, CEO of Imaginatik

22

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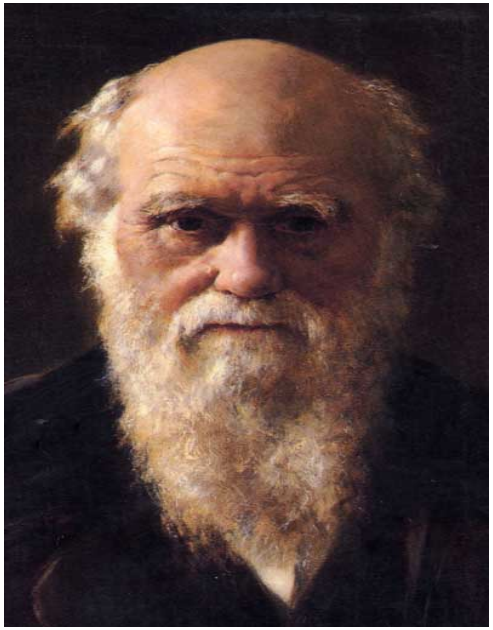
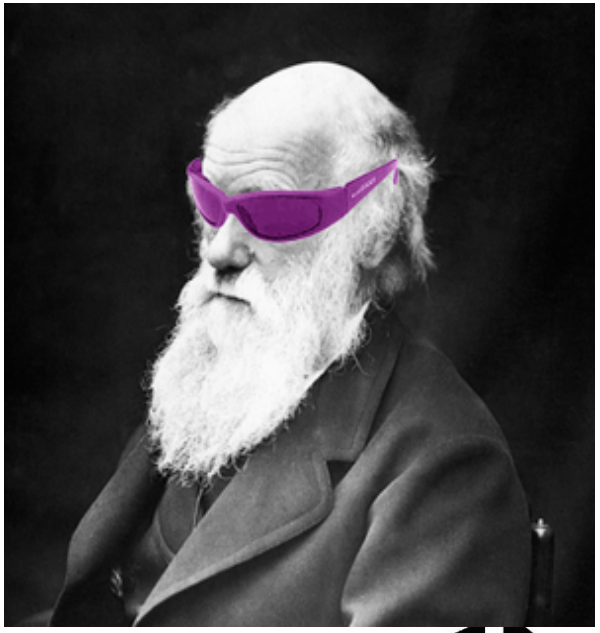
Change Is Inevitable

“ 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)

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Why Is Innovation Essential?

"INNOVATION DISTINGUISHES BETWEEN A LEADER AND A FOLLOWER."

-STEVE JOBS

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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

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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)

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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

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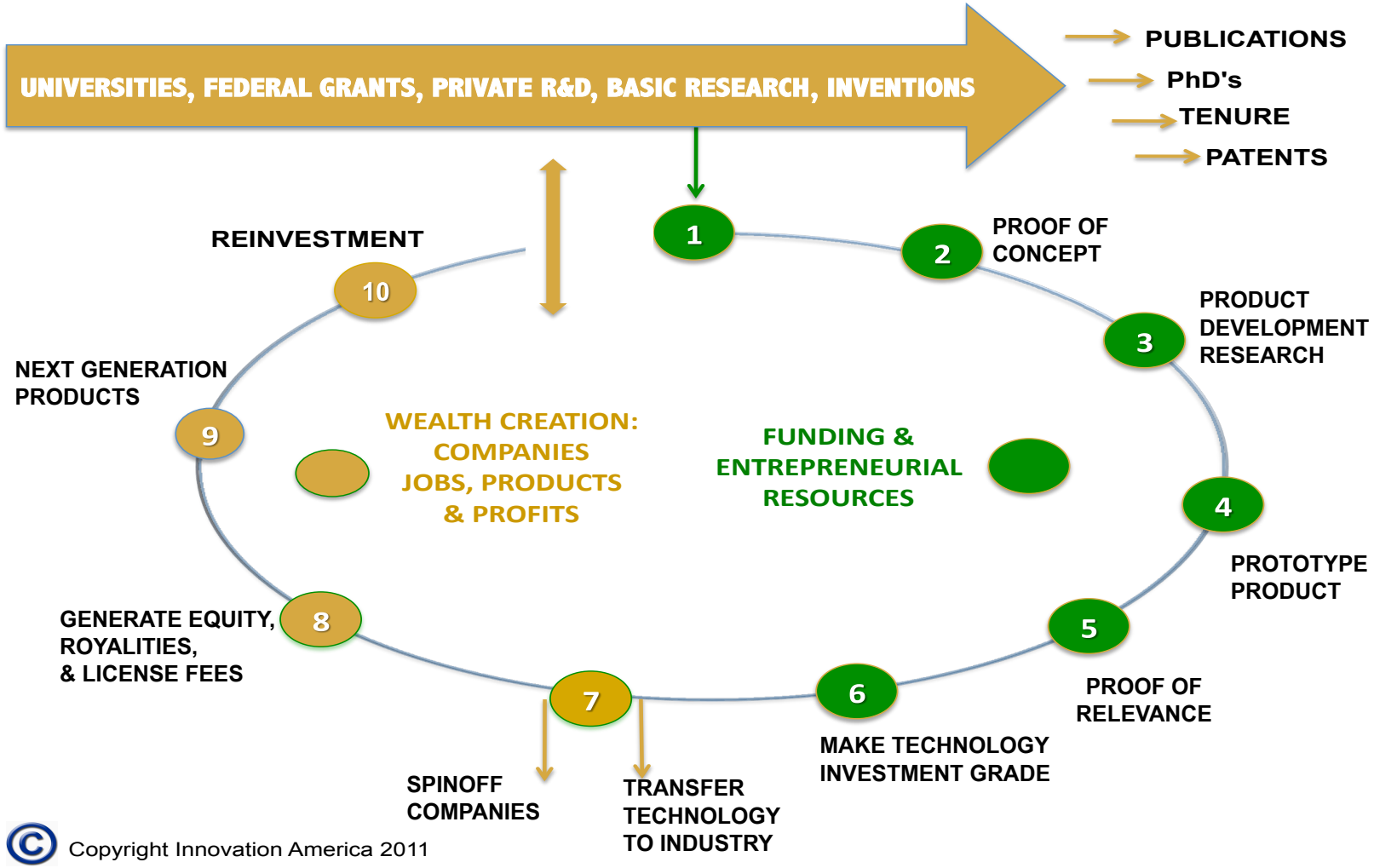
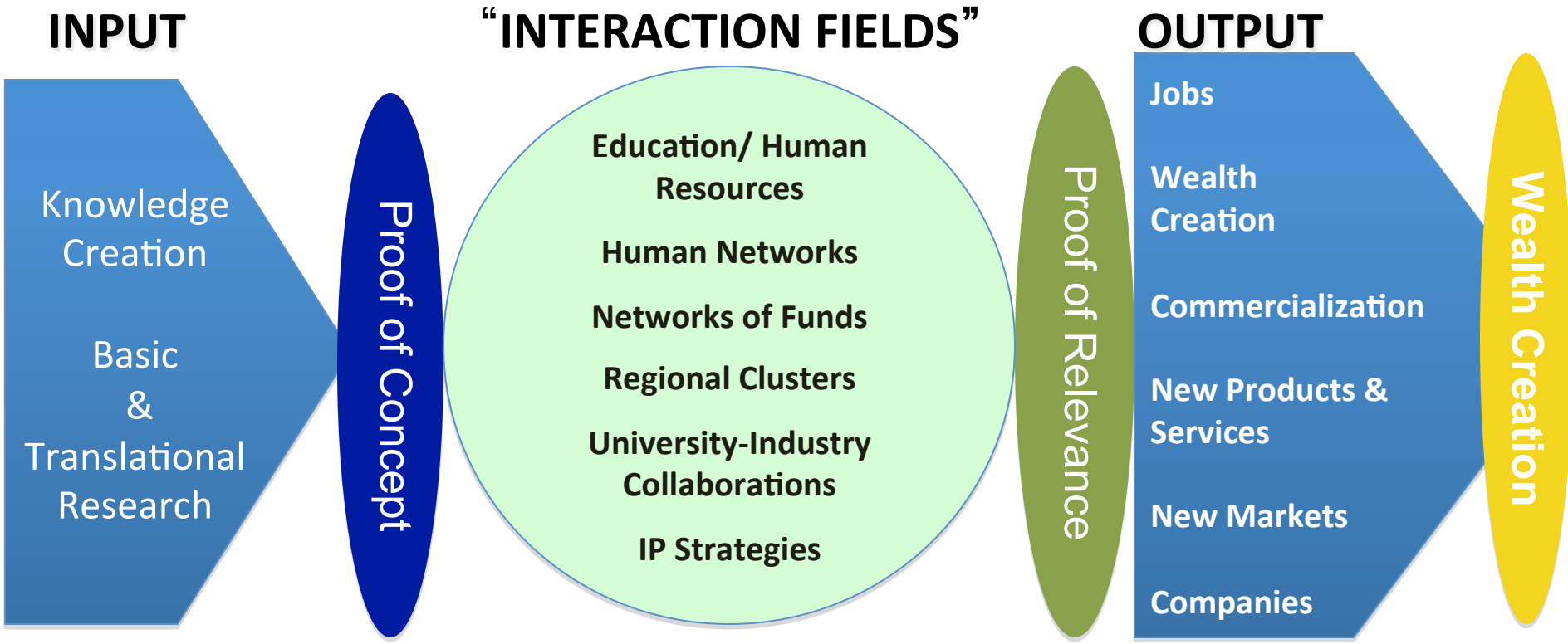
Innovation America Commercialization Model



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.

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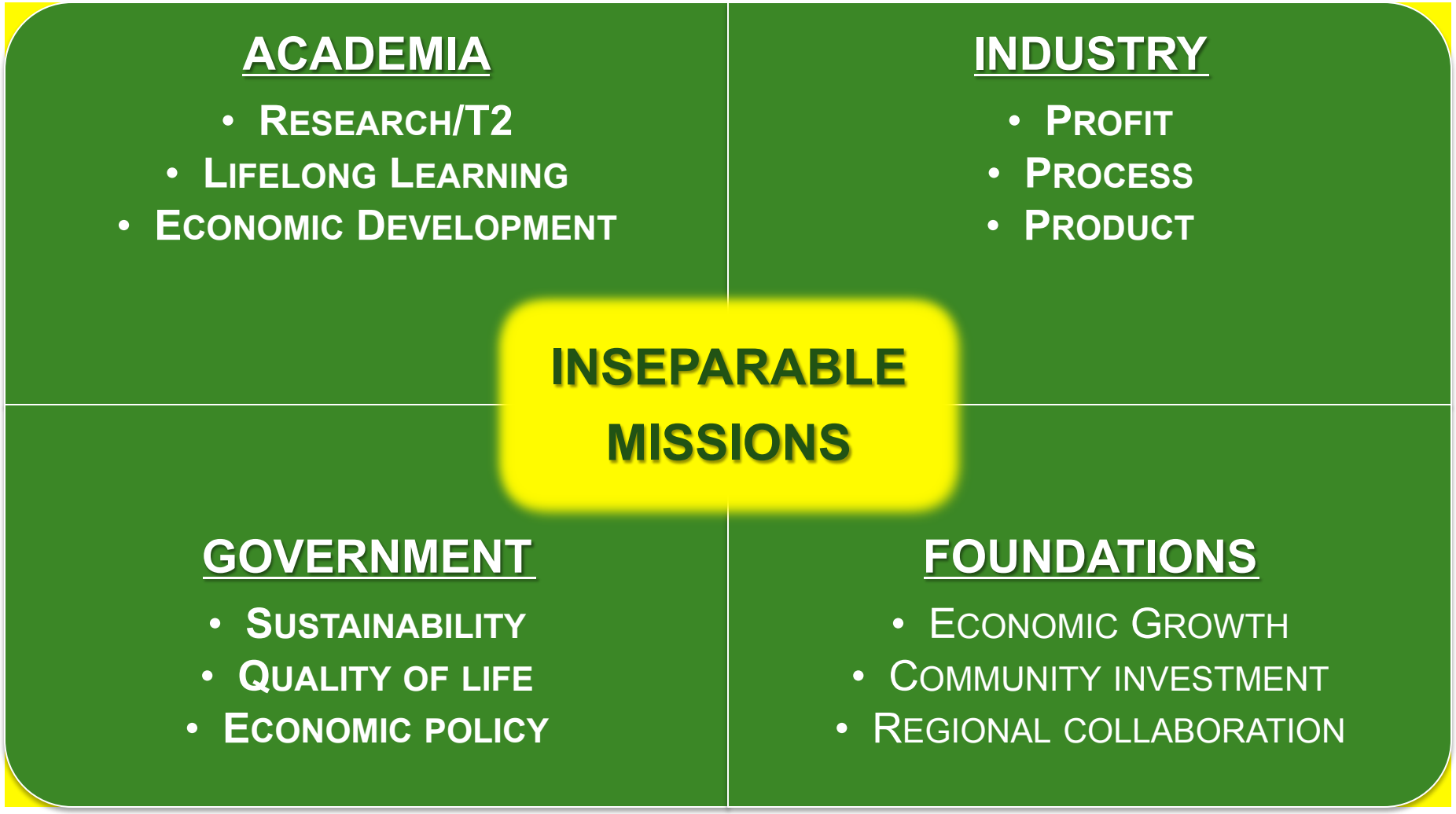
Model Ecosystem



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What Are Clusters?

Clusters represent a new way of thinking about national, state, and local economies, and they necessitate new roles for companies, government, and other institutions in enhancing competitiveness.

-Michael Porter

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

Published by The Kansas Technology Enterprise Corporation

Strategic Technology Cluster Assessment and Plan

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.

Study Methodology

- Identified four key sets of partners:
  - Private Sector
  - Federal Government
  - Research Universities
  - State Government
- Link opportunity and capacity

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Strategic Technology Cluster Assessment and Plan

Realities:

- Scarce resources
- Global competition

Action:

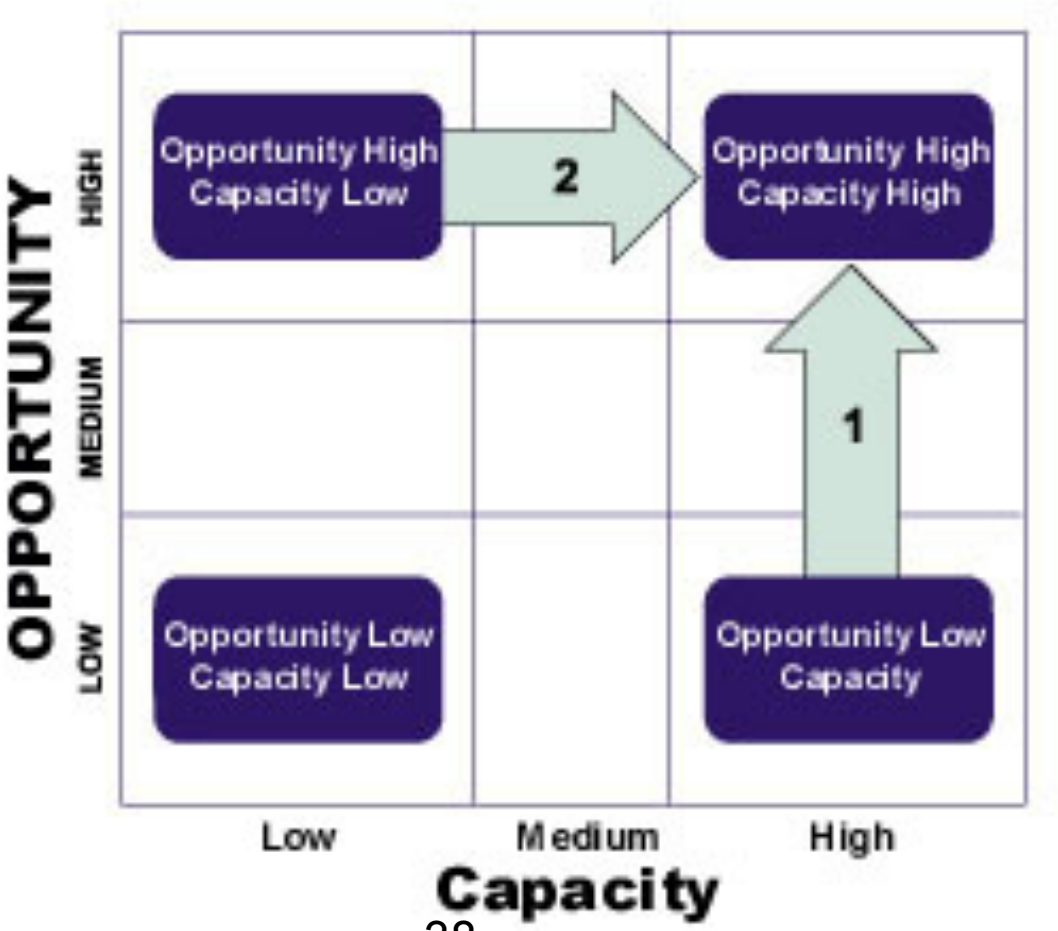
- Establish a competitive advantage through specialization.
- Global, national and local opportunities
- Capacity of businesses, government, and research universities in the country.
- International and national data on various variables.
- Valuation of variable performance.

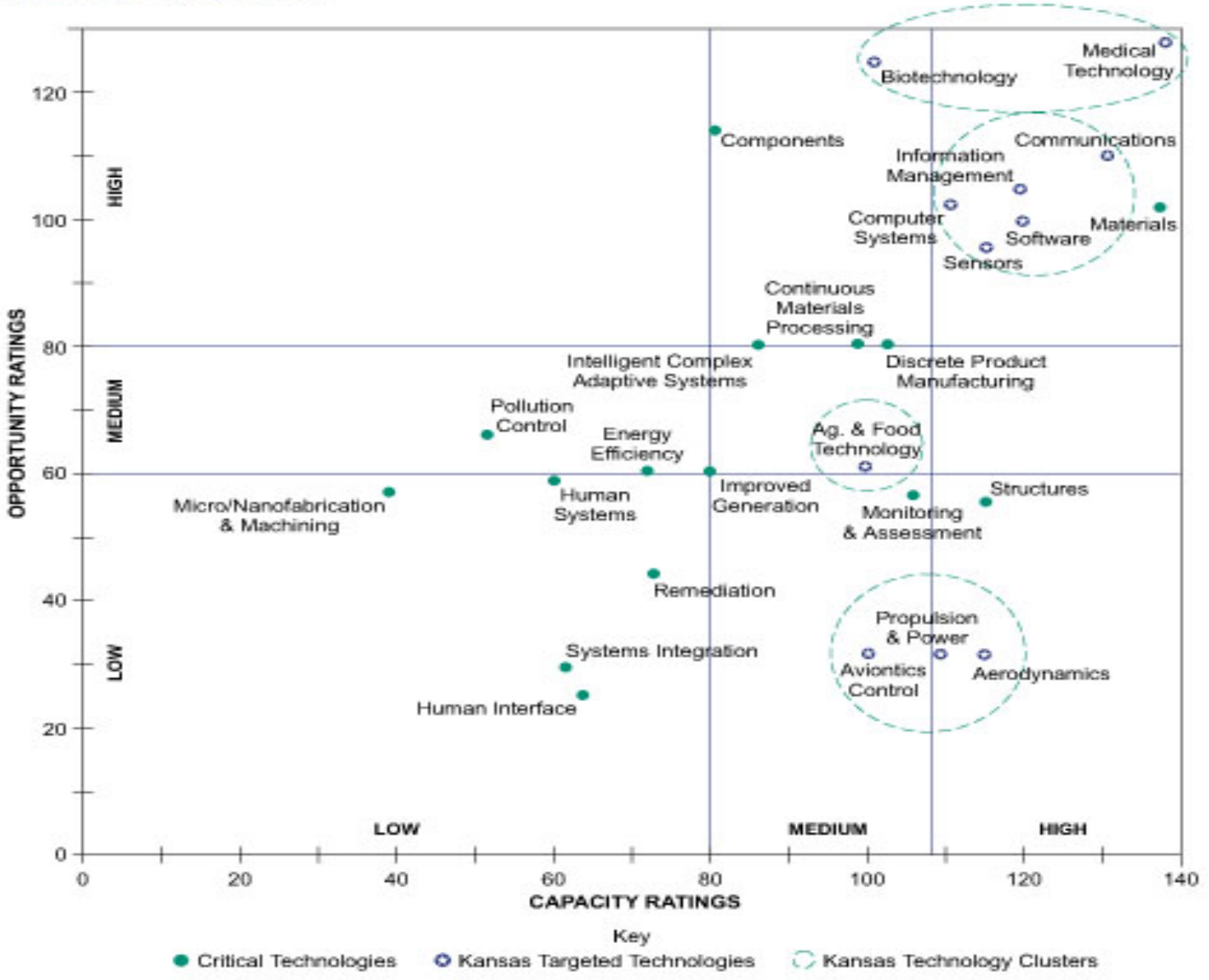
STRATEGIC ASSESSMENT FRAMEWORK

Analytical Framework	Opportunity Indicators	Capacity Indicators
Economic Context	• Growth in US Exports • US Sectoral Growth Projections	• Level of Kansas exports, sectors related to critical technology areas • Kansas employment in sectors • Kansas' shares of the nation's firms in sectors related to critical technologies
Federal Programs	• Advanced Technology Program Awards • SBIR program awards	• SBIR program awards to Kansas firms by technology area
State Programs		• Presence of Centers of Excellence in critical technology areas • State ARMF program awards by technology area
Research Universities	• University/Industry Research Centers – Patent awards to US Universities – Growth in R&D Specific	• Research Awards by technology area • Growth rates for research by critical technology area • Departmental research
Industry	• Research & Development, specific technologies, at US firms • Level of spending on R&D, specific technologies • Venture Capital investments in sectors related top critical technologies • Number of patents to US inventors, by technology area	• Venture capital investments in Kansas • Number of patents to Kansas inventors, by technology area

Linking Opportunity With Capacity

Figure 1-2
Linking Opportunity & Capacity:
An Assessment Model





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.

The Strategic Study

Results:

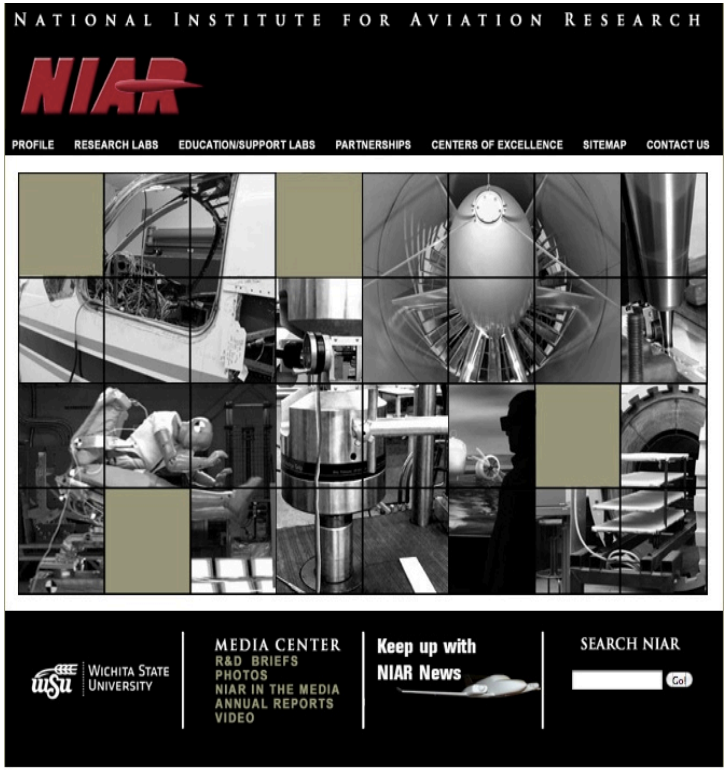
- **Opportunities and capacities assessed**
- **Strategic technology areas identified**

Next:

- **Select policy recommendations**
- **Develop broad guidelines**

Kansas Strategic Technology Clusters

- Aviation
- Information & Telecommunications/Computing
- Value-Added Agriculture & Ag. Biotechnology
- Human Biosciences
- Nanotechnology
- Manufacturing Technology
- Polymers



Policy Recommendations

Framework and Assumptions

- Based on diagnostic study of the state, country, or region
- Focused in supporting technological innovation and development.
- Constitute broad guidelines.
- Each state, country, or region must adjust and prioritize policies according to its individual context.

The Kansas Experience - 2009

CLUSTER	ORGANIZATION	OUTCOMES
Human BioSciences	**Kansas BioScience Authority (KBA)** www.kansasbioauthority.org	•$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	•$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.

Regional Innovation Clusters (RICs)

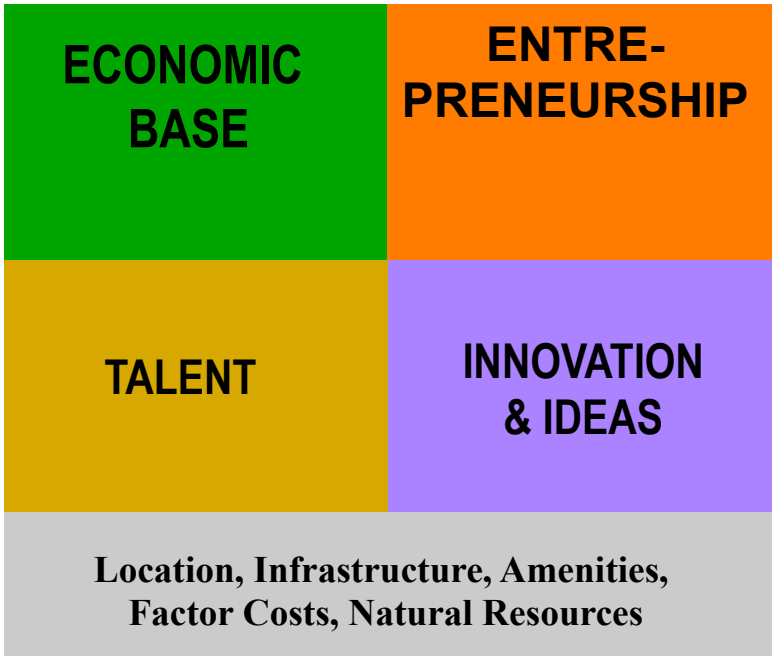
RICs are a geographically-bounded, active network of similar, synergistic or complementary organizations which leverage their region's unique competitive strengths to create jobs and broader prosperity.

Regional Innovation Clusters

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

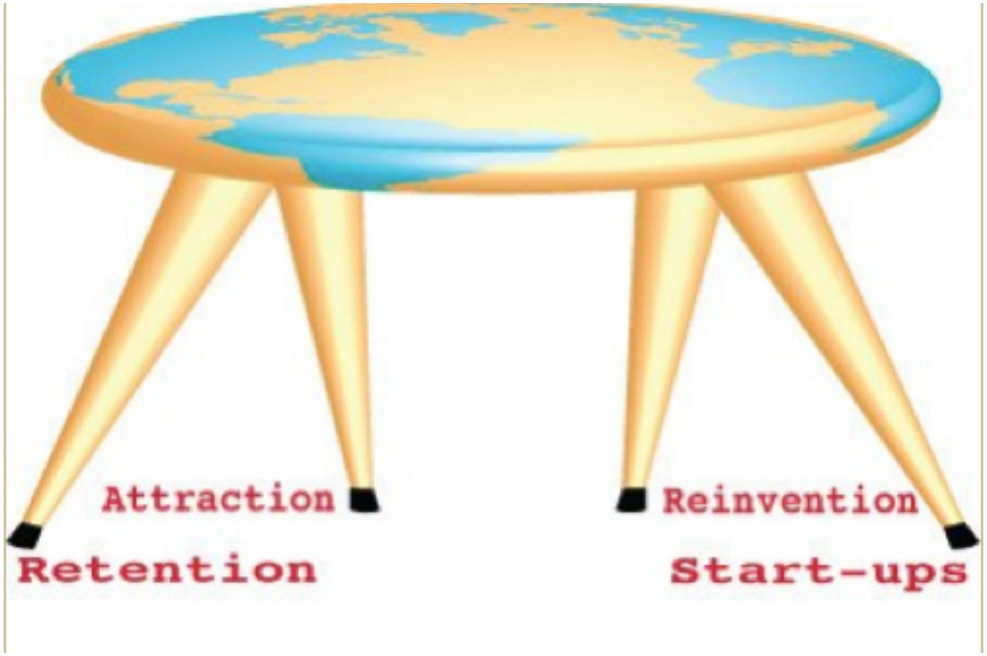
Government's Role in Innovation

- 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

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!



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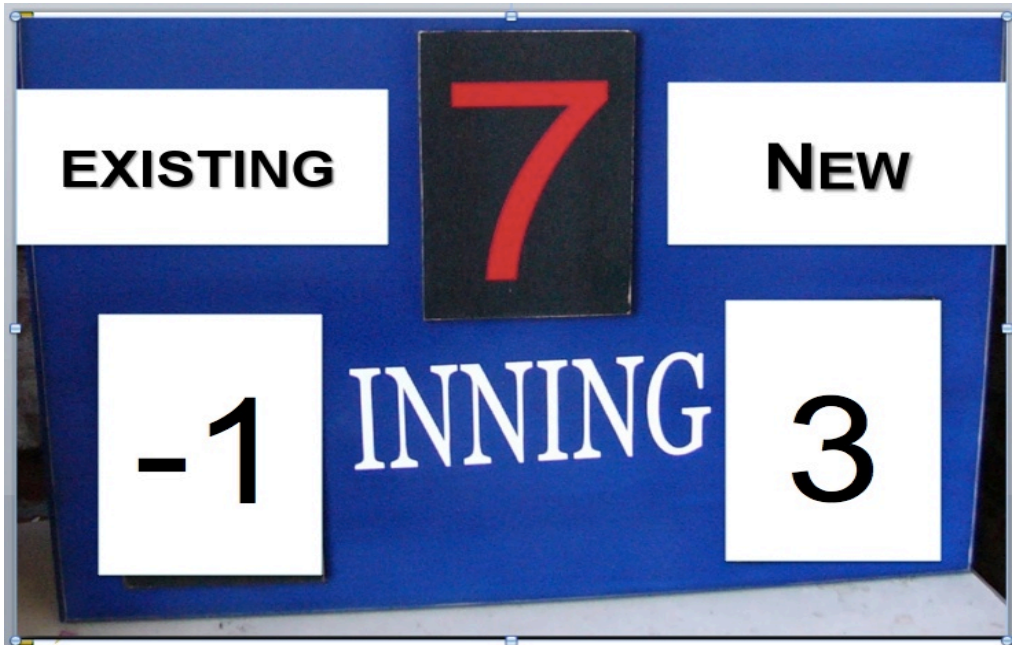
Small Business



- "On average and for all but seven years between 1977 and 2005, existing firms are net job destroyers, losing 1 million jobs net combined per year. By contrast, in their first year, new firms add an average of 3 million jobs," the study reports.

  – Kauffman Foundation

Source: Research Series: Firm Formation and Economic Growth

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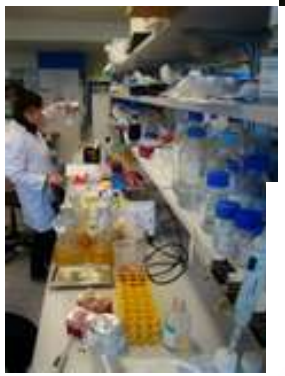
SME's

- Generates 60 to 80% of net new jobs annually

- Employs 30% of high-tech scientists, engineers, and computer workers



- Produces 13 to 14 times more patents per employee than large firms

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SME's and Patents

FACT:

A company with 25 employees generates:

•More patents per employee than a company with 50

•Which produces more patents than a company with 100.

FACT:

•Corporations of 10,000+ employees file for more patents per employee than a company with 50,000 people.

•Small businesses invent at a rate faster than large businesses.

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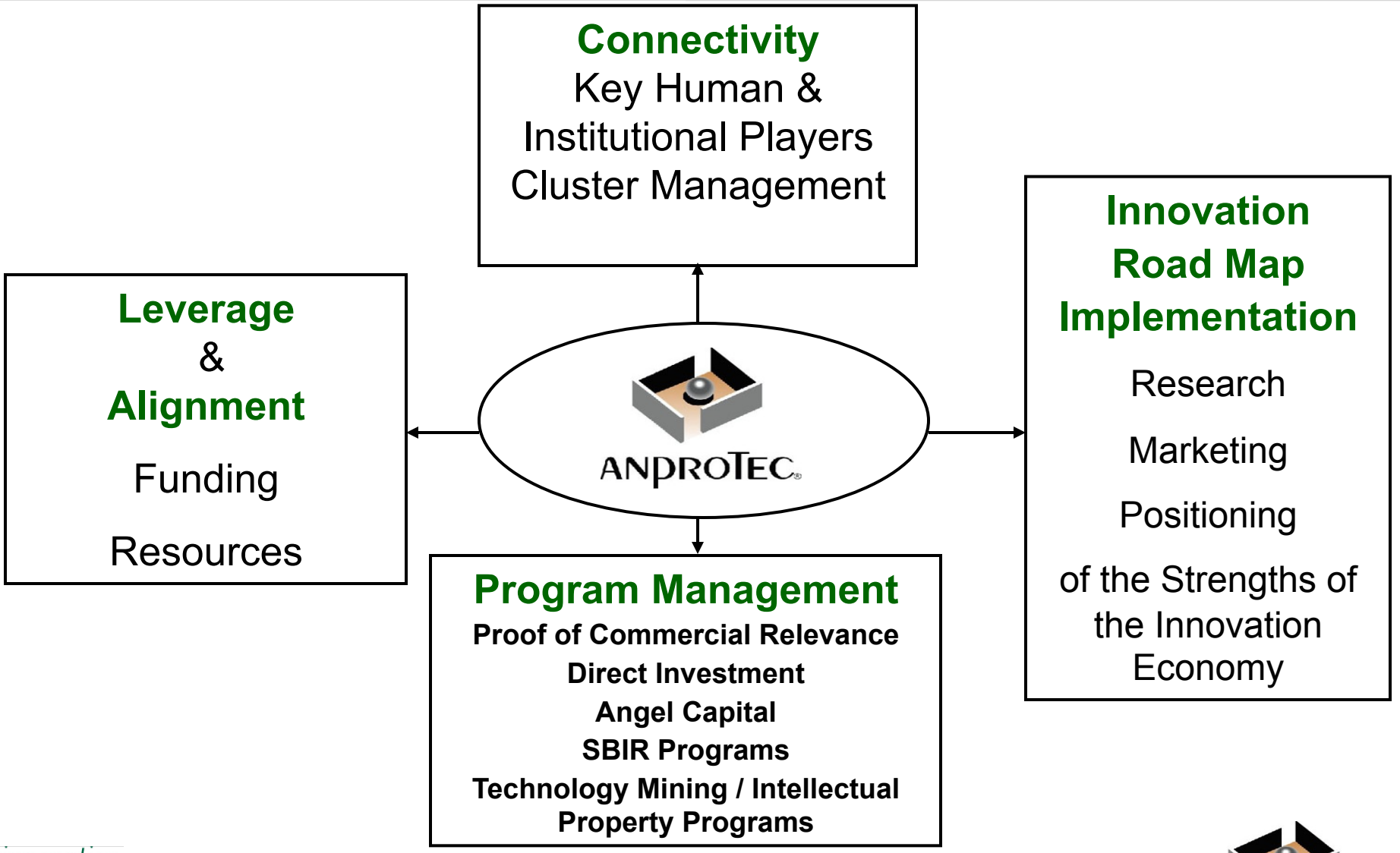
Convergence of Traditional Eco Devo & IBED

	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



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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

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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

Ben Franklin Technology PArtners

Ohio Third Frontier
Innovation Creating Opportunity

Maryland TEDCO
Technology Development Corporation
Maryland...Technology Starts Here.

NYSTAR®
NEW YORK STATE OFFICE OF SCIENCE, TECHNOLOGY & ACADEMIC RESEARCH

IOWA innovation Corporation

eda
NEW JERSEY ECONOMIC DEVELOPMENT AUTHORITY

DECD
Maine Department of Economic and Community Development

First State INNOVATION

KANSAS BIOSCIENCE AUTHORITY

GEORGIA RESEARCH ALLIANCE

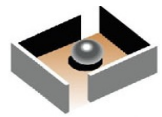
TTDC
TENNESSEE TECHNOLOGY DEVELOPMENT CORPORATION

OCAST

MICHIGAN
Economic Development Corporation

ARKANSAS SCIENCE & TECHNOLOGY AUTHORITY

USTAR
Turning innovation into industry.



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Regional IBED Intermediaries

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.

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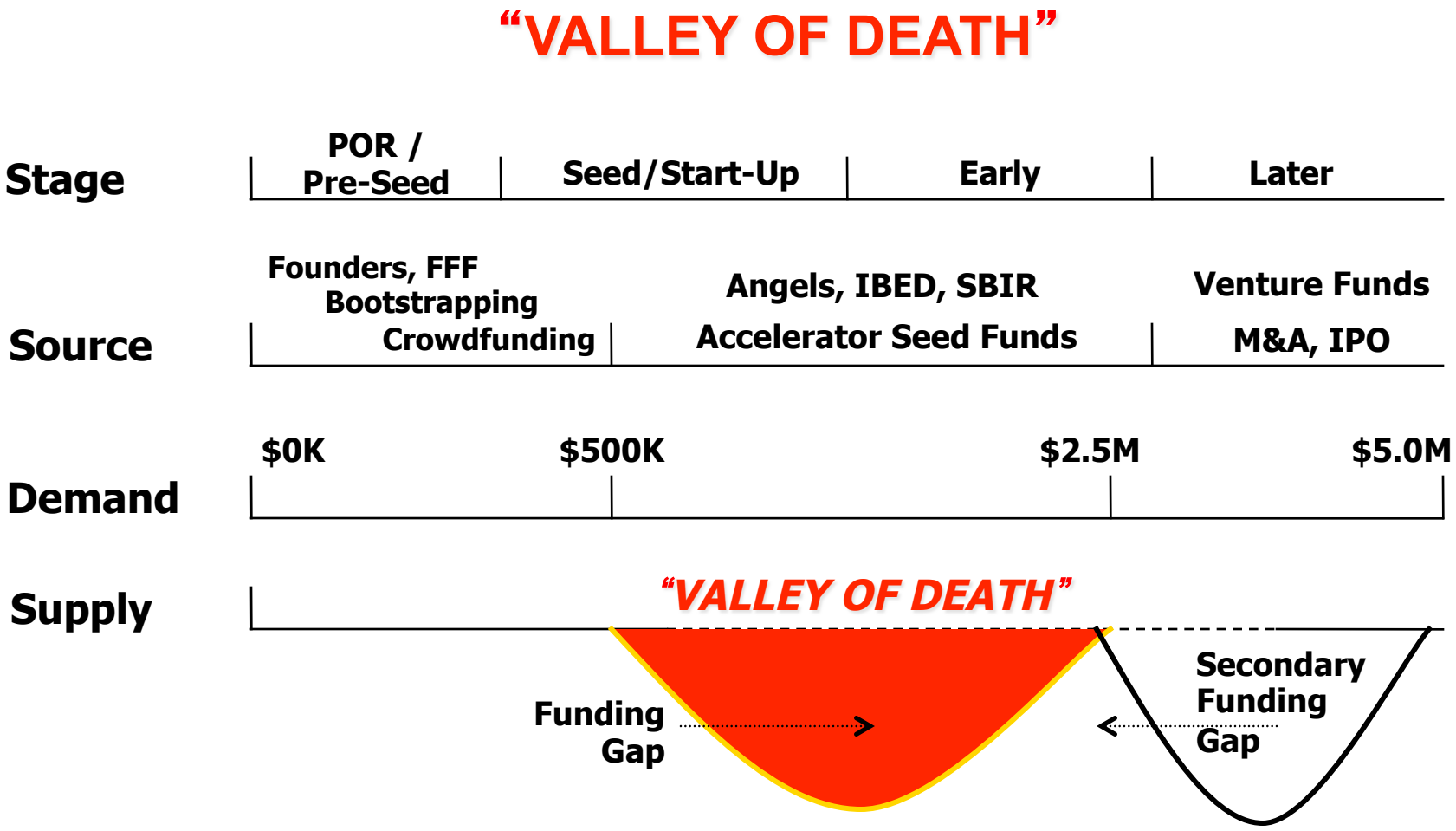
Innovation Capital Valley of Death



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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?

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

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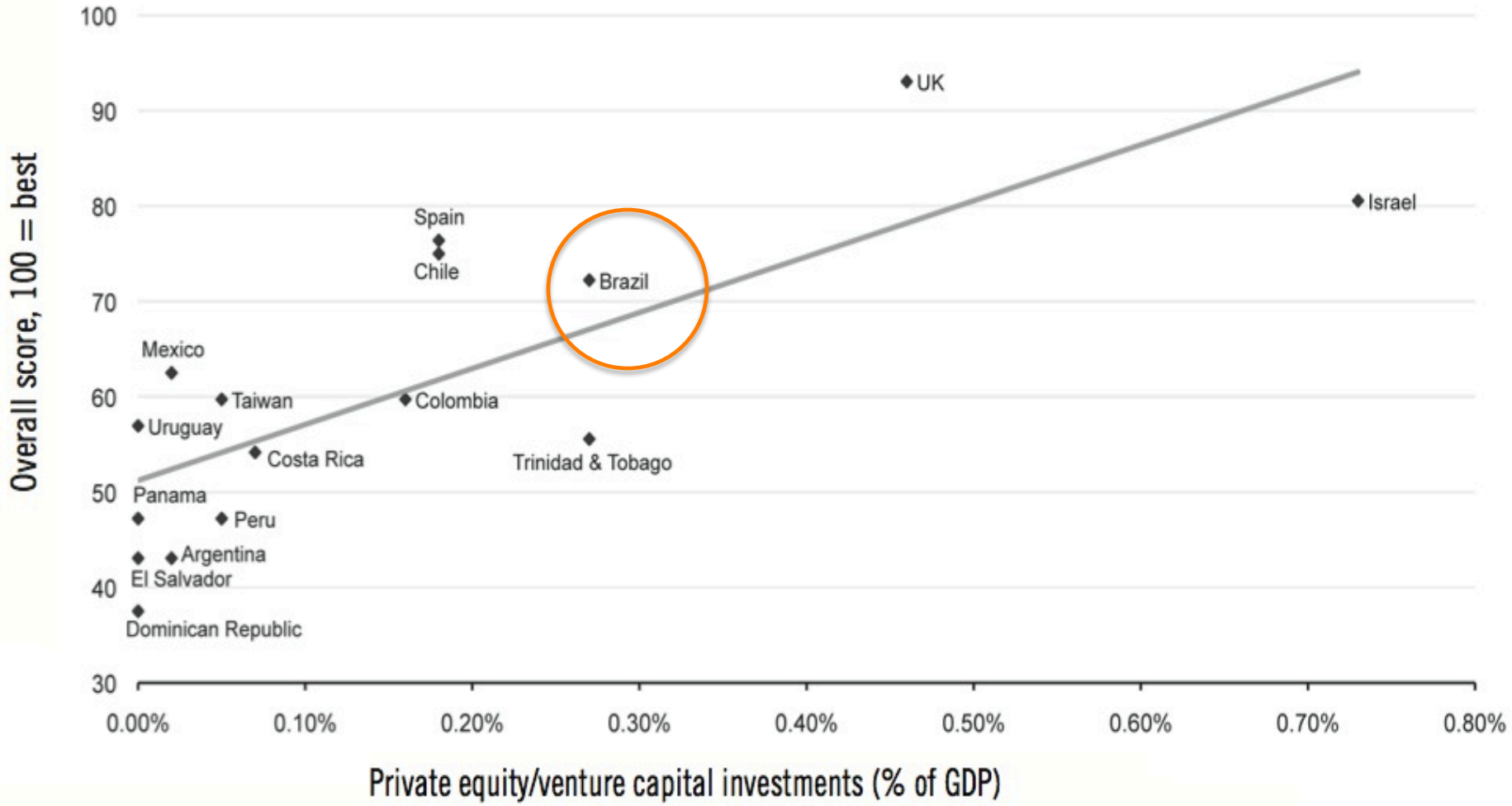
LAVCA 2010 PE/VC

Overall Score Against PE / VC Investments



Source: 2011 LAVCA Industry Data

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

68

Source: PWC/NVCA 2011

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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 Ohio Third Frontier 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

Incubators & 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.

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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**

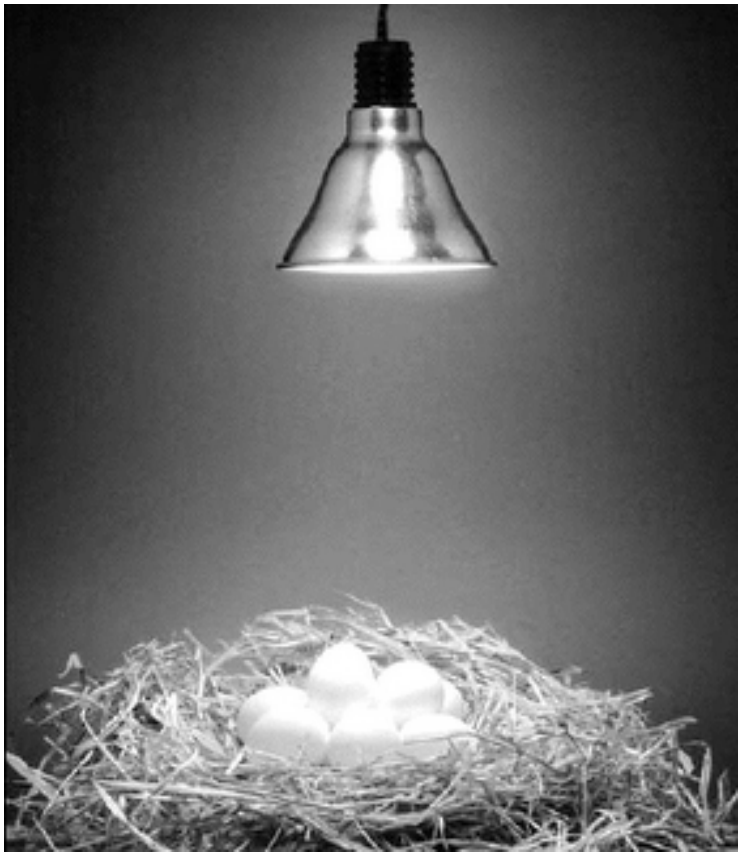
Source NBIA & Bloomburg Businessweek

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*



Incubators in the Regional Ecosystem

- ***Tenants**:* it enhances the chances of survival 3X-4X as compared to a start-up outside the incubator

- ***Governments**:* helps overcome market failures, generates jobs, incomes and taxes, and becomes a demonstration of the political commitment to small businesses

- ***Research institutes and universities**:* helps strengthen interactions between university- research-industry, promotes research commercialization, & gives opportunities for faculty/graduate students to better utilize their capabilities

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Incubators in the Regional Ecosystem

***For business**:* develops opportunities for acquiring innovations, spin-offs, & helps them meet their social responsibilities,

***For the local community**:* creates self-esteem, entrepreneurial culture together with local incomes as a majority of graduating businesses stay within the area.

***For the international community**:* generates opportunities of trade and technology transfer between client companies and their host incubators, a better understanding of business culture, and facilitated exchanges of experience through associations and alliances.

Why Incubators Work

- Creating jobs
- Development of innovative ideas
- Diversification of local economy
- Generate wealth through the creation of a vibrant small business sector.
- Shared basic operating costs
- Consulting & administrative assistance
- Access to Capital
- Legitimacy in the community
- Universality of incubator concept
- Comradeship of fellow entrepreneurs

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INC. Magazine: 2009

Incubation Nation: Where Great Ideas Are Born

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.

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 – Philadelphia – New York

In the last 3 years, DreamIt entrepreneurs have raised $4 million from Google Ventures, appeared on ABC's Shark Tank and been selected as finalists at the TechCrunch50.

Kansas PIPELINE

•To identify talented and entrepreneurial Kansans, match them with best-in-class:

- •Training
- •Resources
- • Mentors
- • Facilitate their dynamic growth in Kansas

•To utilize the momentum and substance of the program to aggressively develop the entrepreneurial ecosystem in Kansas that is essential to sustained entrepreneurial activity and expansion.

University City Science Center – Philadelphia & Delaware

- 1st and largest urban research park in the United States
- 2 million sq. ft. Science Park
- 60K sq. ft. wet lab incubator space
- Full service bioscience incubator
- Successful Int'l "Soft Landing Program
- QED Proof of Concept Fund
- Hosts DreamIt Ventures
- 32 Shareholder universities

DREAMIT VENTURES

Sc science center

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Kansas Innovation and Commercialization Centers

The Bioscience and Technology business Center at University of Kansas serves:

- Spin-out companies commercializing research developed at KU researchers
- Emerging private-sector companies
- Large companies collaborating with KU researchers
- Small-scale pharma manufacturers seeking GMP—ready space

BTBC
BIOSCIENCE & TECHNOLOGY BUSINESS CENTER
AT THE UNIVERSITY OF KANSAS

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

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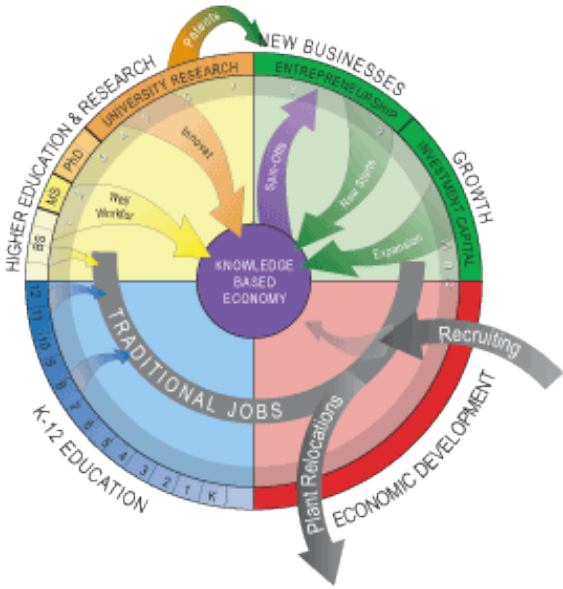
Kansas Bioscience Authority

- $581 million state-funded independent bioscience TBED organization
  - $75.5 million program budget; $3.5 million operating budget
  - 18 employees (8 “deal” people)

- Investment priorities
  - Expand the quantity and quality of bioscience research
  - Focus on the commercialization of bioscience discoveries
  - Foster formation and growth of bioscience companies
  - Position Kansas for international leadership in key clusters

KANSAS BIOSCIENCE AUTHORITY



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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.

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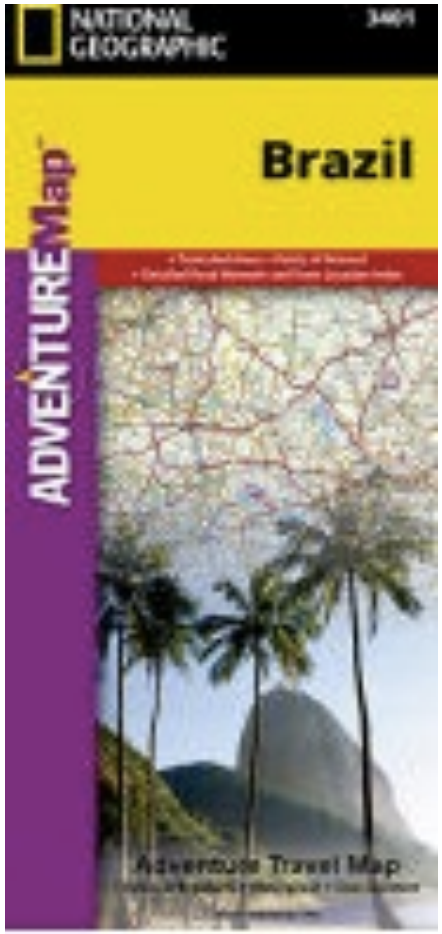
Innovation America: Innovation Road Map Process

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



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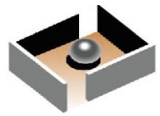
IOWA Innovation Road Map Leadership

Population: 3,000,000

Iowa Department of Economic Development

IOWA ASSOCIATION OF BUSINESS AND INDUSTRY

The Voice of Iowa Business Since 1903.



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Iowa Innovation Index - Indicators

Iowa Innovation Index

Special thanks to our sponsors:

IOWA INNOVATION INDEX
KEY INNOVATION INDICATOR SCORECARD

National Ranking	Regional Ranking	Indicator Number	Indicator Subject Rankings Key: +: National/Regional Indicator Ranking – Strength O: National/Regional Indicator Ranking – Neutral —: National/Regional Indicator Ranking - Weakness
			Economic Impact
—	—	1	Industry Cluster Employment & Wage
N/A	N/A	2	Occupations & Wages
—	—	3	Household Income
O	—	4	Productivity
—	—	5	Corporate Sales and Manufacturing Value-added
—	+	6	Manufacturing Exports
—	—	7	Wages & Wage Growth (In Key Industry Clusters & Overall)
			Innovation Research & Commercialization
O	O	8	Royalty and Licensing Income to Universities
—	—	9	Start-up Companies Formed from University Research
—	—	10	Federal Investment in University & Engineering Research
—	+	11	State and Local Investment in University Science & Engineering Research
O	—	12	Industry & Other Support in University Science & Engineering Research
—	O	13	Size of College and University Endowments
—	O	14	Patenting
++	++	15	Academic Article Output
—	—	16	Research & Development Performed
			Innovation Capital
—	+	17	Sum of all investments – all stages
—	—	18	Targeted Industries Innovation Capital Investments
—	—	19	SBIR/STTR Awards
—	—	20	Number of Public Traded Companies
TBD	TBD	21	R&D Tax Credits
TBD	TBD	22	Angel Tax Credits
			Innovation Workforce
+	O	23	Education Level of the Workforce
—	—	24	Public Investment in K-16 Education
—	—	25	Science and Engineering Degrees
N/A	O	26	Talent Flow and Migration (Int'l and domestic)
			Innovation Location and Environment
N/A	++	27	State-based Innovation Intermediary (Public/Private Partnership)
—	O	28	Broadband Internet Availability
N/A	—	29	E-Government Programs
—	—	30	Arts and Cultural Endowment

NOTE: Regional strengths are based on Iowa's performance as a comparison to Illinois, Kansas, Minnesota, Missouri, Nebraska, South Dakota and Wisconsin.

Road Map Projects – Resource Guide

Appanoose Economic Development Corporation

101 W. Van Buren Street, Suite 1
Centerville, IA 52544

Telephone: 641-856-3388
Website: www.appanoosecounty.org

Programs: Economic Development, Revolving Loan Fund, AIC Financial Assistance, IowaMicroLoan Program Affiliate
Key Staff: Tod Faris, Executive Director; aedcdirector@iowatelecom.net

Overview: AEDC's mission is to facilitate the retention, expansion, attraction, and creation of businesses and jobs, and collaboratively work to enhance the overall business climate of the county.

Program Services: Work Opportunity Tax Credit, Enterprise Zone,HUBZone, Property Tax Abatement, Appanoose Industrial Corporation, Tax Increment Financing

The Revolving Loan Fund is designed to assist small to medium sized businesses, and requires a minimum of 5 jobs be created or retained to access this program. The interest rate is 5% and the maximum repayment term is 5 years. The maximum loan amount is $50,000.

The AIC Financial Assistance Program is designed for medium to large businesses who are expanding or considering moving their business to Appanoose County. AIC may be able to provide at least $1,000 per job created in the form of a forgivable loan.

The IowaMicroLoan was created for those microbusinesses that are considered on the fringe of riskbearing capacity for most traditional financial institutions. Loans are available from $5,000 to $35,000

ARCH Venture Partners

8725 W. Higgins Road, Suite 290
Chicago, IL 60631

Telephone: 73-380-6600
Website: www.archventure.com/entrepreneurs.html

Key Staff: Keith L. Crandell, Co-founder and Managing Director

Overview: ARCH invests primarily in companies co-founded with leading scientists and entrepreneurs, concentrating on bringing to market innovations in life sciences, physical sciences, and information technology. We enjoy special recognition as a leader in the successful commercialization of technologies developed at academic research institutions and national laboratories. If you are an entrepreneur who has identified an opportunity to commercialize an advanced technology and you are working on a business plan or have formed a startup venture to introduce new technology in information technology, life sciences, or physical sciences, please contact us.

Stage of Development for Investment: Seed/Early Stage
Preferred Investment Industry: Micro/Nanotechnologies, specialty materials and semiconductors, biotechnology, interdisciplinary technologies.

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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Thank You

Obrigado!

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