26th Annual 2011 SMART Economic Development Conference

INNOVATION:

IOWA'S HIGHWAY TO GROWTH

May 5, 2011
Des Moines, Iowa

Presented by:

Rich Bendis
President & CEO
Innovation America

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

INNOVATION MATTERS

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Iowan John Wayne Call To Action

"Tomorrow is the most important thing in life.

Comes into us at midnight very clean. It's perfect when it arrives and it puts itself in our hands. It hopes we've learned something from yesterday."

-John Wayne

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How Leading Nations Responding 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

Note: Many countries are investing very substantial resources to create, attract and retain industries in leading sectors

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…….

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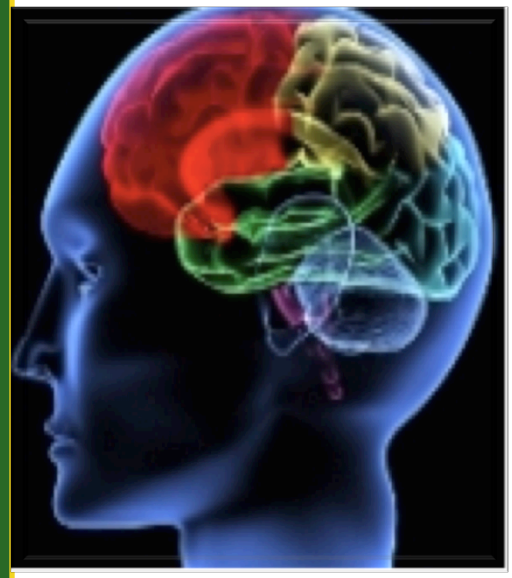
Innovation Economy: Definitions & Terminology

- Knowledge is the confident understanding of a subject, potentially with the ability to use it for a specific purpose

- Knowledge economy is based on creating, evaluating, and trading knowledge

- **Innovation** is the creation and transformation of knowledge into new products, processes, and services that meet market need…….and interactions, entertainment forms, and ways of communicating and collaborating

Trends



Widespread acceptance of action is needed to encourage economic growth through science, technology and innovation……

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Creating the Knowledge & Innovation Culture

- Knowledge Acquisition and Deepening – to reinforce science and technology teaching and resources at all levels of education
- Knowledge Creation – Develop Research Capability in all priority sectors of the economy
- Knowledge Transfer – to reinforce Science and Technology Capability in all priority sectors of the economy
- Innovation Culture - To encourage Innovation at all levels to help stimulate economic growth

Public Support

- 84% of Americans believe there will be a “lot more jobs in the future that require math and science skills”
- 88% agrees that students with advanced science and math skills will have an advantage when it comes to college opportunities
- California: 52% to 27% believe that state policymakers are not making technology and innovation enough of a priority
- 78% of Americans think “a national innovation initiative would be effective”

Trends In TBED

- Cycles of emphasis over the years on different elements; elements continuing on the rise
  - Increasing expectation for community of university research
  - Growth of venture development organizations, private accelerators, and start-up weekends
  - Capital
- Reorganization of economic development efforts
  - Public-private partnerships
  - State TBED orgs merged into state economic development departments
  - Regional emphasis

Challenges

- A changing economy with a different recovery pattern
- Shortage of skilled works once recovery in full swing
- Different expectations for higher education
- 28 new governors
- Fiscal pressures
- Federal approaches changing slowly

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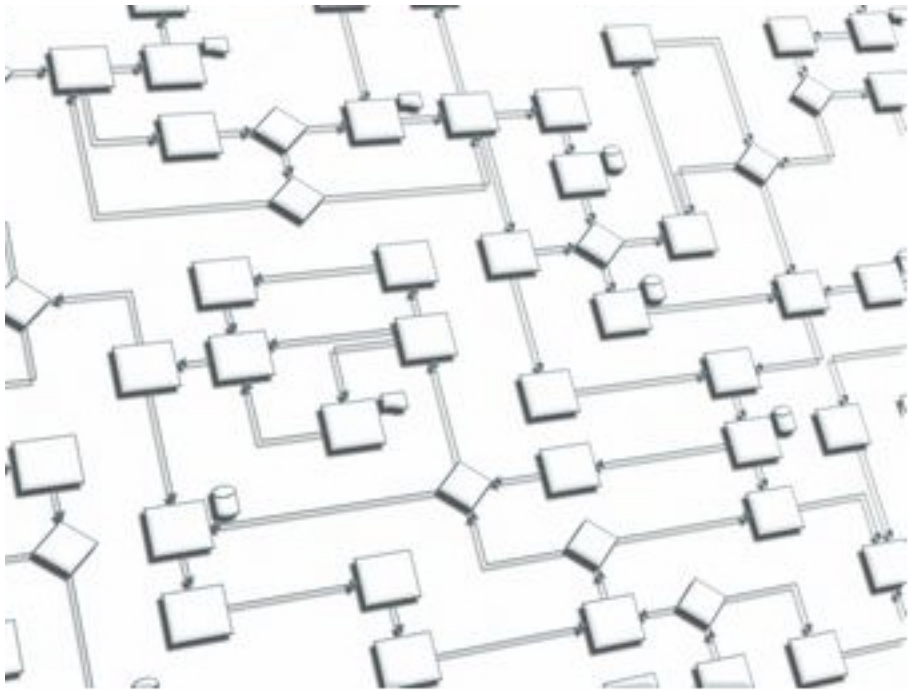
Elements for Tech-Based Economy

- Intellectual infrastructure
- Spillovers of knowledge
  - from universities
  - from informal networks
- Physical infrastructure
- Technically skilled workforce
- Capital
- Entrepreneurial culture
- Quality of life



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Lessons Learned

- Committed high-level leadership is required that understands:
  - Economic impact further down the road than other approaches
  - Research does not always succeed
  - Significant cultural differences between actors

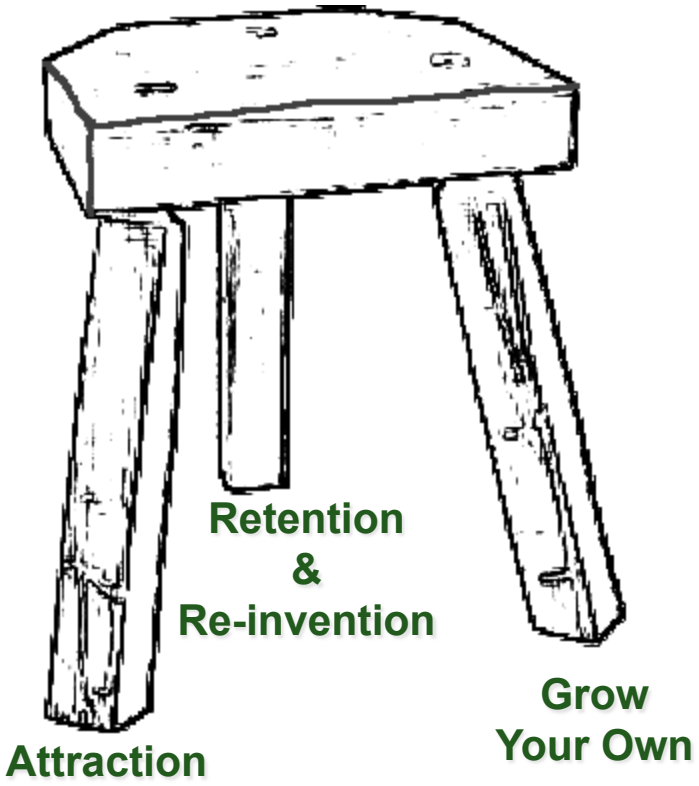
- Action should be based on:
  - Understanding of needs, capabilities, and gaps
  - Filling gaps to encourage change in private sector behavior

Lessons Learned

- Characteristics of successful TBED programs
  - Three hallmarks for long-term sustainability
    - Do good work
    - Measure whether they're doing good work
    - Telling people they're doing good work
  - Champions from more than one sector (ideally all three)
    - Private sector, university, government (gov or legislature)
  - Effective management and staff
  - Entrepreneurial in approach/responding to change

Economic Development

- Economic Development is a three-legged stool:
  - **Attraction**
  - **Retention & Re-Invention**
  - **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

•The term Economic Gardening means 'growing our economy from within.'

•This is accomplished by providing access to technology and business expertise for helping both new and existing small businesses, generally between 10-25 employees, located within a city/region to thrive and grow.

•Economic Gardening works by finding new sales opportunities and expanding upon old ones through the provision of free or low-cost tools and information to small businesses.

•Assistance is also provided in other areas such as market intelligence and general industry information.

•The goal is to assist businesses early on in their development so they remain viable and are prepared to overcome common obstacles.

Examples of Economic Gardening

LEGI
Longmont Economic Gardening Initiative

Longmont Economic Gardening Initiative (LEGI) The City of Longmont will launch the Longmont Economic Gardening Initiative (LEGI) on July 1, 2006, to assist local businesses grow, and create and retain local jobs. The program is designed to meet the needs of Longmont's small business community by leveraging public and community resources. Any business in Longmont is eligible to participate through a combination of peer counseling, access to research data, data analysis, market analysis, plus competitive and industry intelligence. The initial interview, counseling, research data, and data analysis are free.

Launched in 1989 with the idea that "economic gardening" was a better approach for Littleton (and perhaps many other communities) than "economic hunting." By this, we meant that we intended to grow our own jobs through entrepreneurial activity instead of recruiting them. The idea was based on research by David Birch at MIT that indicated the great majority of all new jobs in any local economy were produced by the small, local businesses of the community.

GrowFL
Cultivating Growth Companies
GrowFL.com

Florida Economic Gardening Institute and Partners Unveil GrowFL to Cultivate Growth Companies Statewide. Program Targets Second-Stage Businesses Offering Sophisticated Tools and Elite Staff.

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Traditional & Innovation-Based Development

	Traditional	Innovation (Clusters)
• Competitive Basis	Natural resources Highways / Rail Proximity Costs	Specialized talent Networks, information University research / professors Market understanding Global Reach
	i.e. PHYSICAL	i.e. KNOWLEDGE
• Key values / offerings	Business parks Incentives	Access to research Workforce competencies Lifestyle
• Lead Organization	Chambers / EDCs	Economic developers

Innovation Intermediaries

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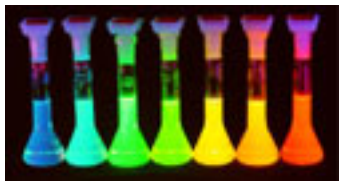
Implementing a New Innovation Paradigm

- 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 TBED to IBED
- **Innovation-Based Economic Development**



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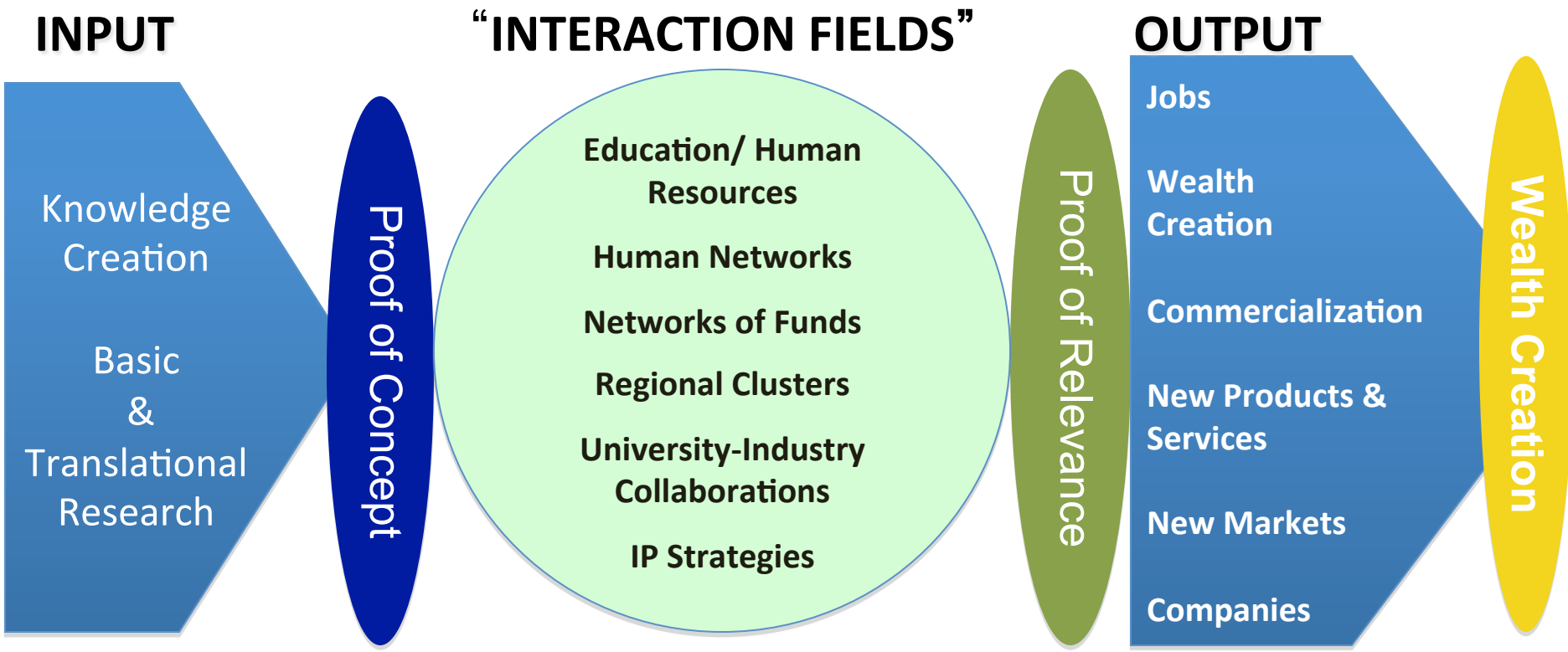
Innovation Ecosystem



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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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, through innovation and research, to create wealth, grow the economy, build successful businesses and improve quality of life

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Importance of Major Research Universities

- The primary driver of the future economy and job creation will be innovation, largely driven by science and engineering (Gathering Storm Report)
- Global economic competitiveness requires the confluence of **scientific discovery** that creates **knowledge** and **technological opportunity, workforce talent**, and access to **enabling resources**.
- Universities can contribute to all of these components; over past decade, Iowa has embraced this concept and continues to both invest in and produce innovation successes.

Value Creation by University Research Engines

Select contributions of U.S. research institutions to the national economy:

- 2009: >**3,300 patents** issued to universities.
- More than **$40 billion and 270,000** jobs added annually to U.S. economy.
- More than **500 companies formed** annually around university discoveries.
- Impactful products and interventions such as Google and Rituxan

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Guiding Framework For Universities

Relevance

– Utilize all University disciplines

Connectivity

– Link University to community assets and partners

Productivity

– New Metrics

- Value added, not exclusion-based
- Output per unit of input
- Scaled metrics

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Challenges for Universities

- Innovation and Entrepreneurship are global and competition will only increase – we must continue to invest in the three key ingredients, people, knowledge and an innovation enabling environment
- Value creation and economic growth through discovery and translation to innovation and commercialization is a complex, non-linear and often lengthy process.
- University support and rewards system for faculty must more effectively support strategies and goals in technology commercialization
- As a key partner, universities must continue to enhance their efficiencies and flexibility in supporting the innovation enterprise

Iowa's University Commercialization Centers

University of Northern Iowa
John Pappajohn Entrepreneurial Center

MyEntre.Net
NAVIGATE YOUR FUTURE

The University of Iowa
UIRF
UNIVERSITY OF IOWA
RESEARCH FOUNDATION
VENTURES AND LICENSING

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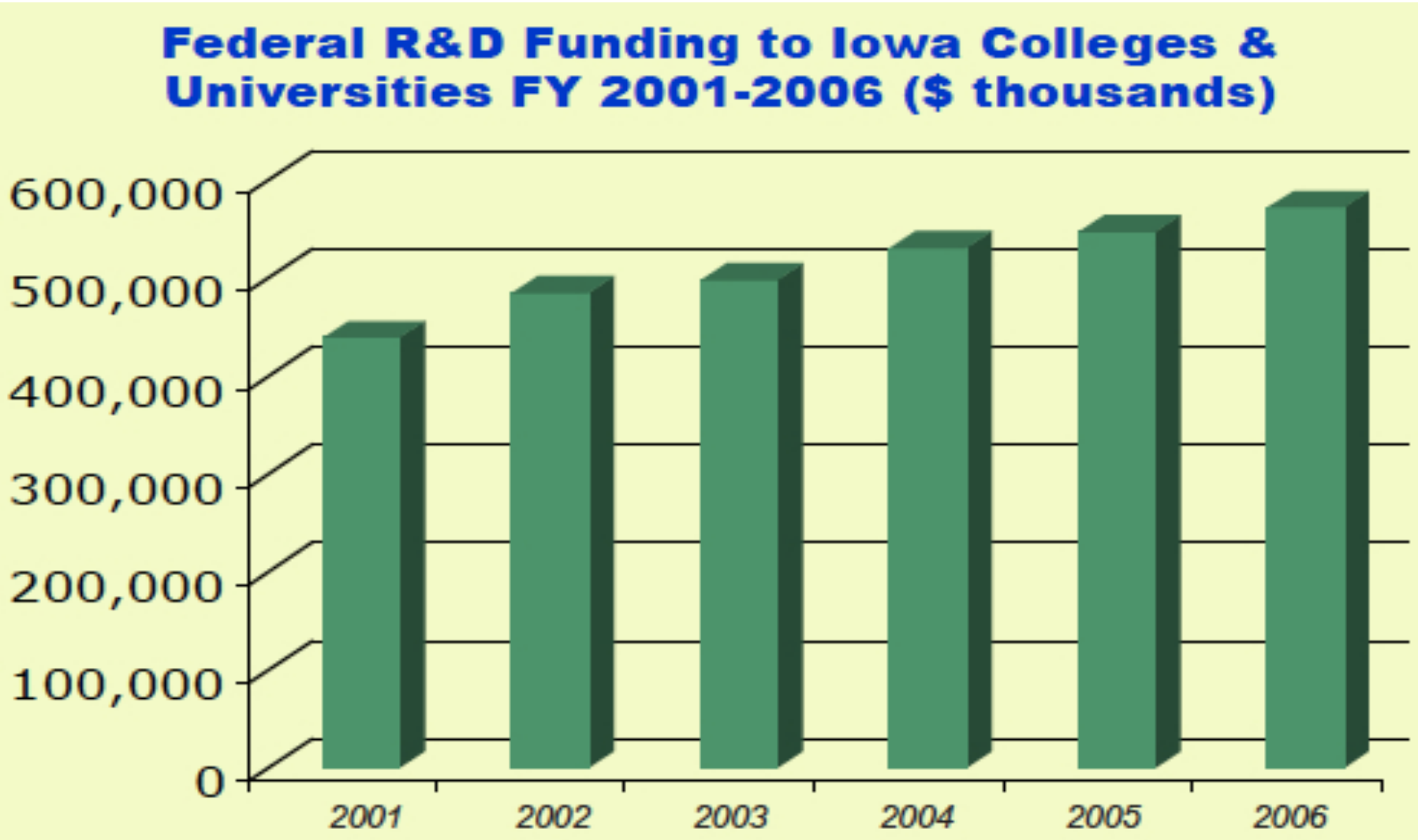
Federal R&D Funding To Iowa Colleges & Universities



SOURCE: National Science Foundation/Division of Science Resources Statistics, *Survey of Research and Development Expenditures at Universities and Colleges, FY 2006.*

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

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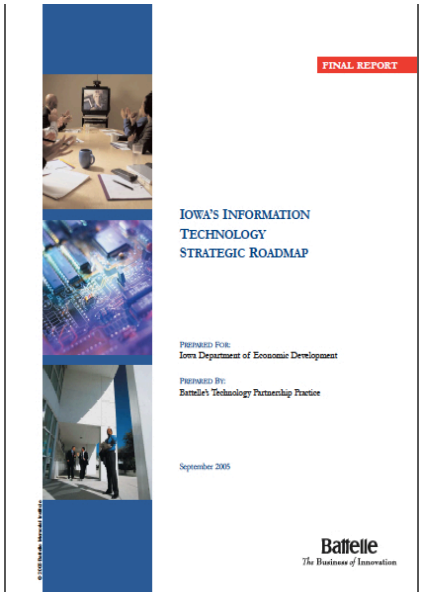
Iowa's Key Clusters



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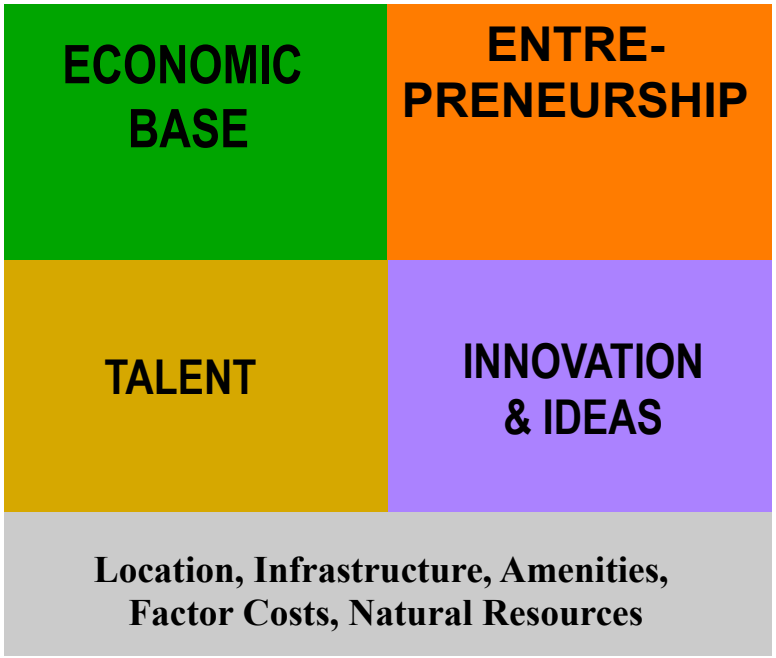
Regional Innovation Clusters

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

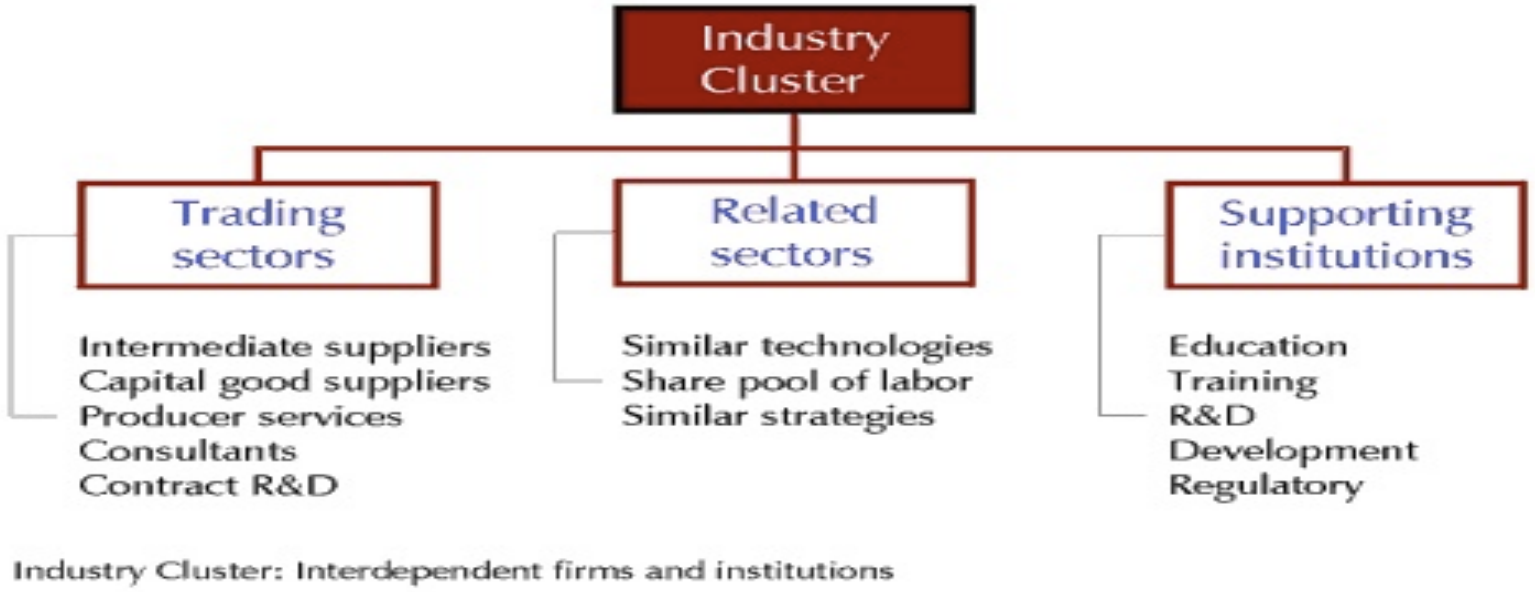
Your capacity to innovate and generate new ideas

The basic conditions defining the economic milieu of the region

General Principals for Cluster-Based Economic Development Strategies

- Don't try to create clusters.
- Use data and analysis to target interventions, drive design, and track performance
- Focus cluster initiatives on clusters where there is objectively measured evidence of under-capacity.
- As a matter of policymaking, clusters provide a framework for rethinking and refocusing economic policy.
- Maximize impact by leveraging cluster-relevant preexisting approaches, programs and initiatives.
- Align efforts "vertically" as well as horizontally.
- Let the private sector lead

Cluster Benefits



Industry Cluster: Interdependent firms and institutions

Labor market pooling, supplier specialization, knowledge spillovers, Enhancing the local and innovation potential, encouraging, entrepreneurship & ultimately promoting growth in productivity, wages, and jobs.

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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Iowa Innovation Road Map Process

1. Literature Review of Comparables
2. Key Stakeholder Interviews/Recommendations
3. Asset Mapping/Cluster Analysis GIS Innovation Mapping
4. Innovation Benchmarking/Index (Peer 2 Peer)
5. Innovation and Entrepreneurship Resource Identification (Entrepreneur Resource Guide and Database)
6. Innovation Economic Development Organizational Analysis and Matrix
7. Innovation & Commercialization Gap Analysis (programs & services)
8. Innovation Ecosystem Public Policy Recommendations
9. Develop Strategic Plan
10. Organizational Leadership and Staffing
11. Operations/Implementation Plan and Program Portfolio
12. Branding/Marketing Strategy and Market Research
13. Economic Impact Analysis
14. Celebrate Success

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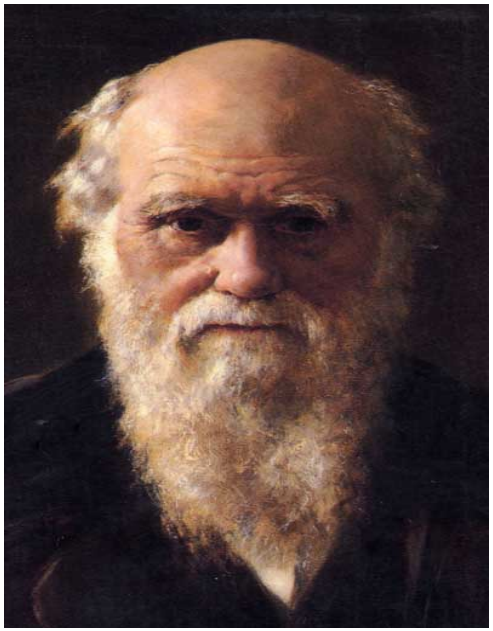
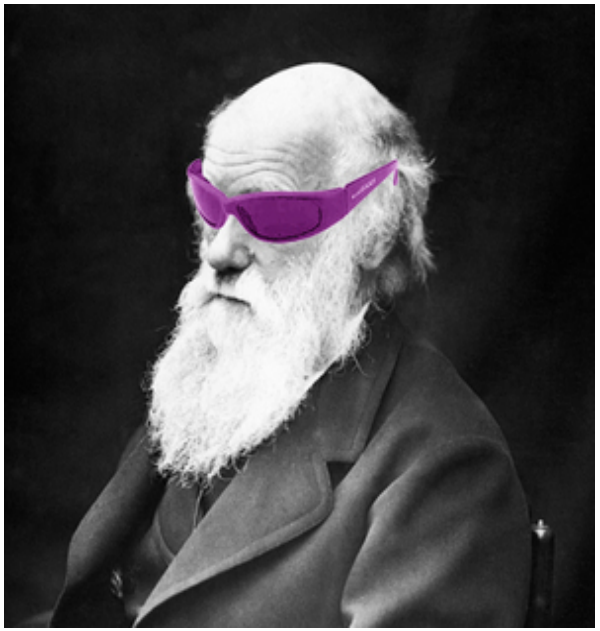
Darwin on Collaboration

“ It is the long history of humankind (and animal kind, too) those who learned to collaborate and improvise most effectively have prevailed."

–Charles Darwin

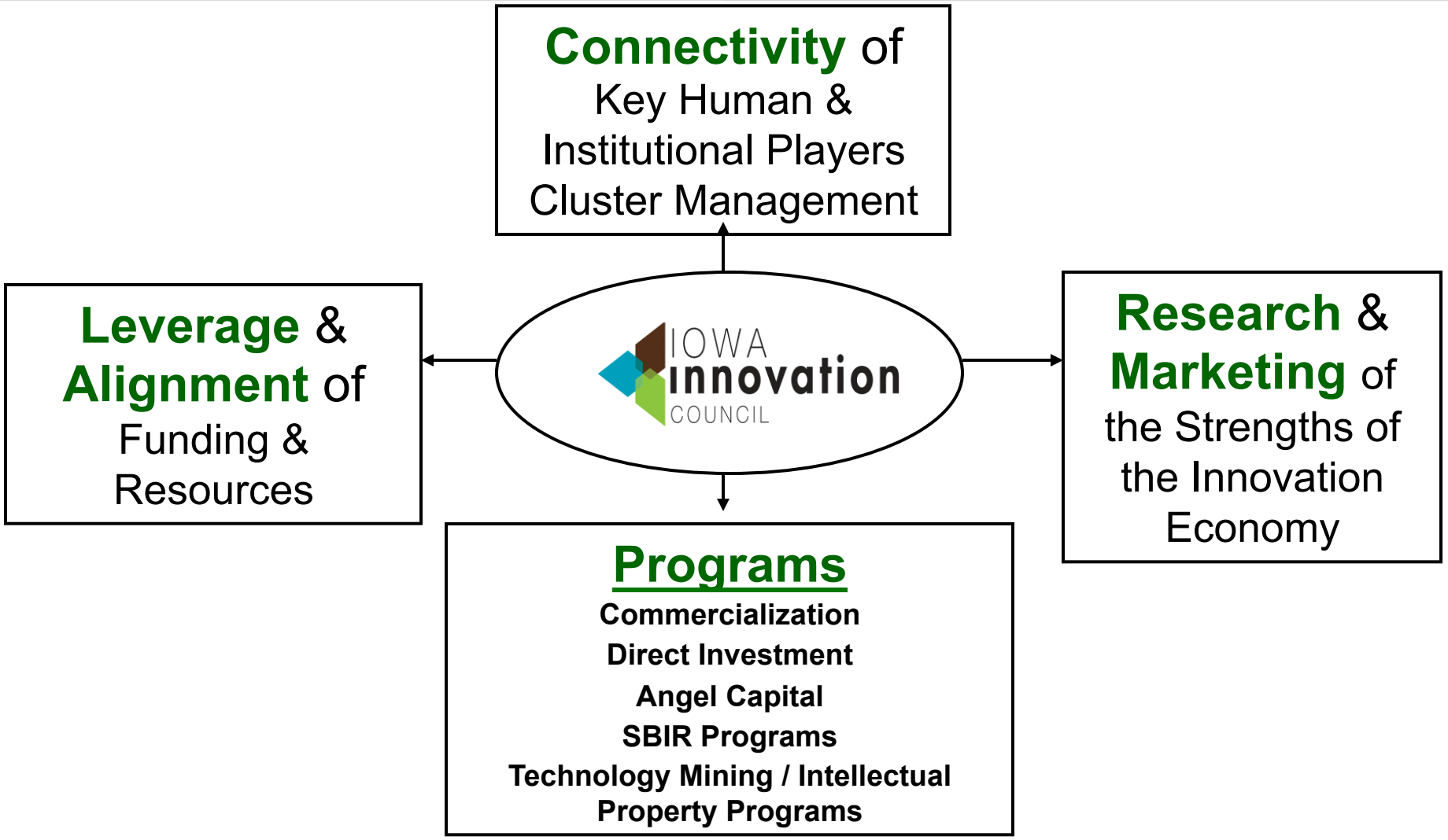




What is a Innovation Intermediary?

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

U.S. State Innovation Programs

Successful Funding Models

Ohio Third Frontier
Innovation Creating Opportunity

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

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$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

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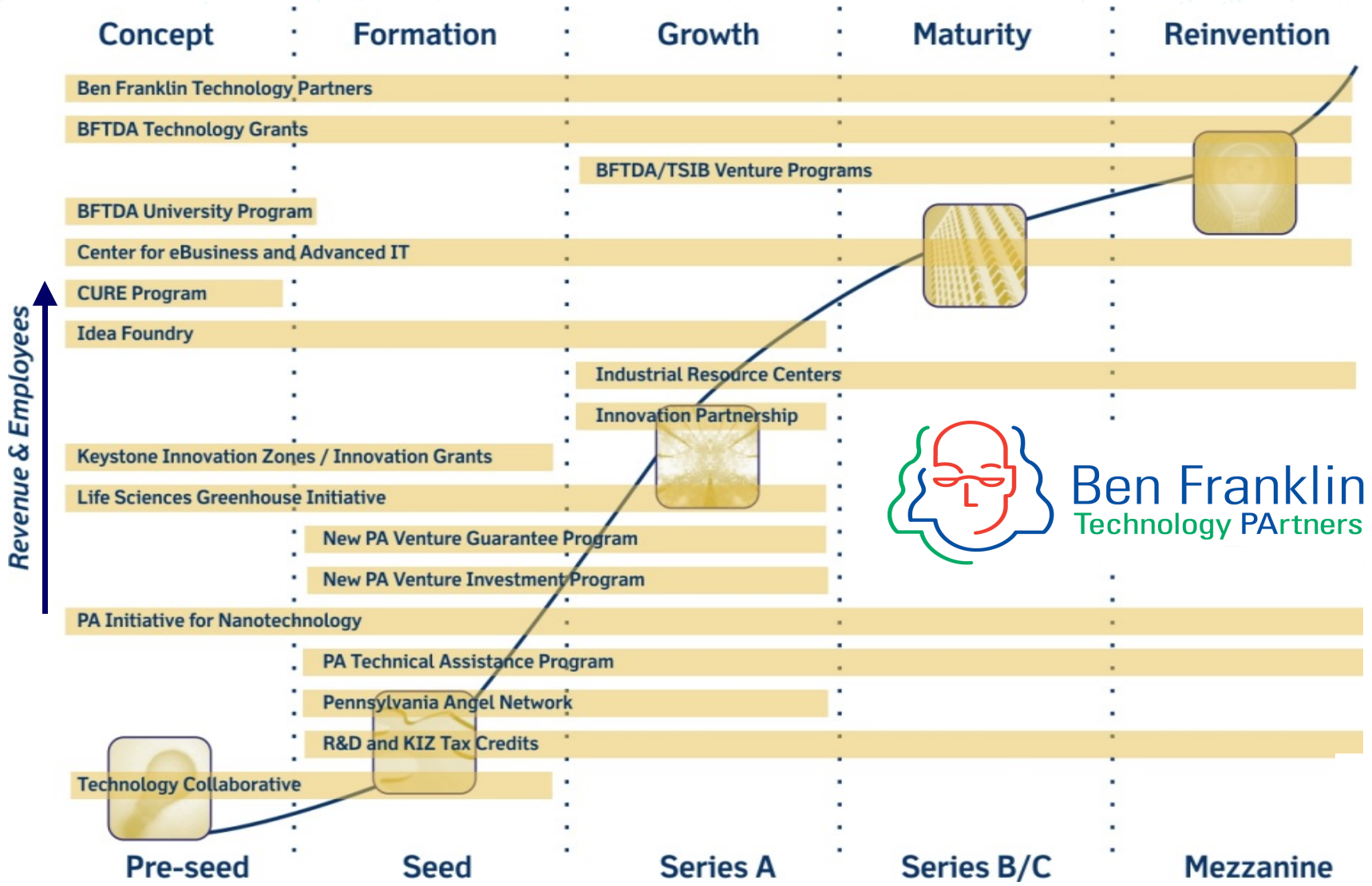
Technology Investment

Technology-based Economic Development Tools Along the Continuum

> ready > set > succeed



Innovation 2 Enterprise - Oklahoma

- Private not-for-profit focused on wealth creation by growing OK technology-based entrepreneurial economy
- Works directly with universities, entrepreneurs, researchers and companies to help commercialize technologies, launch and grow new businesses and access capital
- Funding
  - Proof of Concept Fund
  - Seed Capital Fund
  - Angel Network
- Entrepreneurial Development

i2E
INNOVATION TO ENTERPRISE

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Kansas Bioscience Authority – Economic Impact

Through June 2010, KBA investments have helped generate:

- **1,195** new **jobs**
- **$212.6 million in capital expenditures**
- **$86.6 million in new research funding**
- **$48.3 million in equity investments**
- ***Including estimated wages of jobs, that represents a $9.41 return to the state's economy for each $1 invested by the KBA***

KANSAS BIOSCIENCE AUTHORITY

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U.S. 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.

The New Economy Initiative for Southeast Michigan (NEI)

new economy initiative for southeast michigan

Founded:2008

Organizational Mission: Unique philanthropic initiative aimed at helping to restore southeast Michigan to a position of leadership in the new global economy.

Original Funding: $100M – 8 year initiative - 10 national and local foundations

Goal: Accelerate the transition of metro Detroit to an innovation-based economy.

Partners: Community Foundation for Southeast Michigan; Max M. and Marjorie S. Fisher Foundation; Ford Foundation; Hudson-Webber Foundation; W.K. Kellogg Foundation; Knight Foundation, Kresge Foundation; McGregor Fund; Mott Foundation and Skillman Foundation

Iowa Innovation Council: Innovation Intermediary

- The Council's focus is **developing and implementing strategies** to help Iowa's innovators, entrepreneurs, researchers and existing businesses commercialize their ideas.
- New and collaborative network of **continuous support for entrepreneurs and innovators.**
- The **Iowa Integrated Innovation Commercialization Network (IIICN)** is a source of **best practices**, **standardized due diligence processes** and **resources** available to entrepreneurs and small companies.
- Stronger and more collaborative system to **increase the state's ROI on funds** used to provide services to entrepreneurs and entrepreneurial companies and to provide early-stage capital to businesses bringing new products into the marketplace.

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Glenn Baker Director, Engineering, Technology & Quality Deere and Company	Christine Boge-Hubbard Senior VP, Integrated Supply Chain Integrated DNA Technologies	Curt Carlson President and CEO BodyViz	Irving Hahn President QCI
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Creating the ROI To Grow Iowa's Economy

First step: Define the problem

- Networked services in support of entrepreneurs
- Lack of early-stage and equity capital under professional management
- Poor optimization of university resources
- Lack of vigorous commercialization of university research
- Sub-optimization of federal program dollars

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Federal Program Opportunities

I6 Green Proof of Concept Center

- $ 1 Million
- Proof of Concept Center
- Proof of Commercial Relevance Center

Jobs & Innovation Accelerator Challenge

- $33 million Cluster Program Grant
- Initiative of 16 federal agencies & bureaus to accelerate innovation-fueled job creation & economic prosperity through public private partnerships.

USDA ARS

- Partnership program with the commercialization of Iowa-based ag-tech companies
- Joint research increases the likelihood of success in conducting cooperative research between the USDA and Iowa companies

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IIC Key Strategies

- Partner with the IDED to establish & operate the IIC as a 501-c-3
- Establish a governance process
- Establish a standardized review process & a common entity to support applicants for state funding
- Create a for-profit corporation
- Develop plan & ongoing process to guide workforce education/ development priorities related to innovation/business development
- Develop a plan to deliver university support to existing Iowa companies
- Review existing state & federal programs/policies that have a demonstrated track record of increasing private sector investment in company R&D.
- Create/implement marketing strategy to inform & attract Iowans & the world the of the state's innovation rich capabilities to grow new companies, expand existing companies & provide fertile ground for growth of any company relocating to Iowa.

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Take Action

IIC was created under **HF 2076 in 2010**

Proposal: A public-private 501(C)3 innovation intermediary will be created.

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501 (C3) Best Practice Guidelines

- Bipartisan Support & Champions
- Operational flexibility
- Continuous Reinvention
- Understand Return On Investment
- Sustainability In Funding
- Accountable
- Longevity
- Non-partisan, private sector leadership

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IIC Tactics

- Iowa Integrated Innovation & Commercialization Network
- Asset Mapping/Cluster Analysis
- Regional Angel Funds + Statewide Seed Fund
- Working Groups
- Statewide Mentoring Network
- Networking/ Marketing
- SBIR/STTR Reviews and other federal grant assistance
- Proof Of Relevance Center (PORC)
- Federal Innovation Intermediary Relationship Role
- Metrics

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Road Map: Innovation 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.

Road Map: Iowa Innovation Index - Indicators

IOWA INNOVATION INDEX
KEY INDICATOR RATING SCORECARD

National	State Benchmark	Indicator	Indicator Subject
			Economic Impact
		1	Industry Cluster Employment & Wage
		2	Occupations & Wages
		3	Household Income
		4	Productivity
		5	Corporate Sales and Manufacturing Value-added
		6	Manufacturing Exports
		7	Wages & Wage Growth (In Key Industry Clusters & Overall)
			Innovation Research & Commercialization
		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
		12	Industry & Other Support in University Science & Engineering Research
		13	Size of College and University Endowments
		14	Patenting
		15	Academic Article Output
		16	Research & Development Performed
			Total Economic Impact Indicators
			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
			Total Innovation Capital Indicators
			Innovation Workforce
		21	Education Level of the Workforce
		22	Public Investment in K-16 Education
		23	Science and Engineering Degrees
		24	Talent Flow and Migration (int'l and domestic)
			Total Innovation Workforce Indicators
			Innovation Location and Environment
		25	Nonstop Business Center Travel via Air
		26	Broadband Internet Availability
		27	E-Government Programs
		28	Arts and Cultural Endowment
		29	R&D Tax Credits
		30	Angel Tax Credits
			Innovation Location and Environment Indicators
			OVERALL STATE RATING

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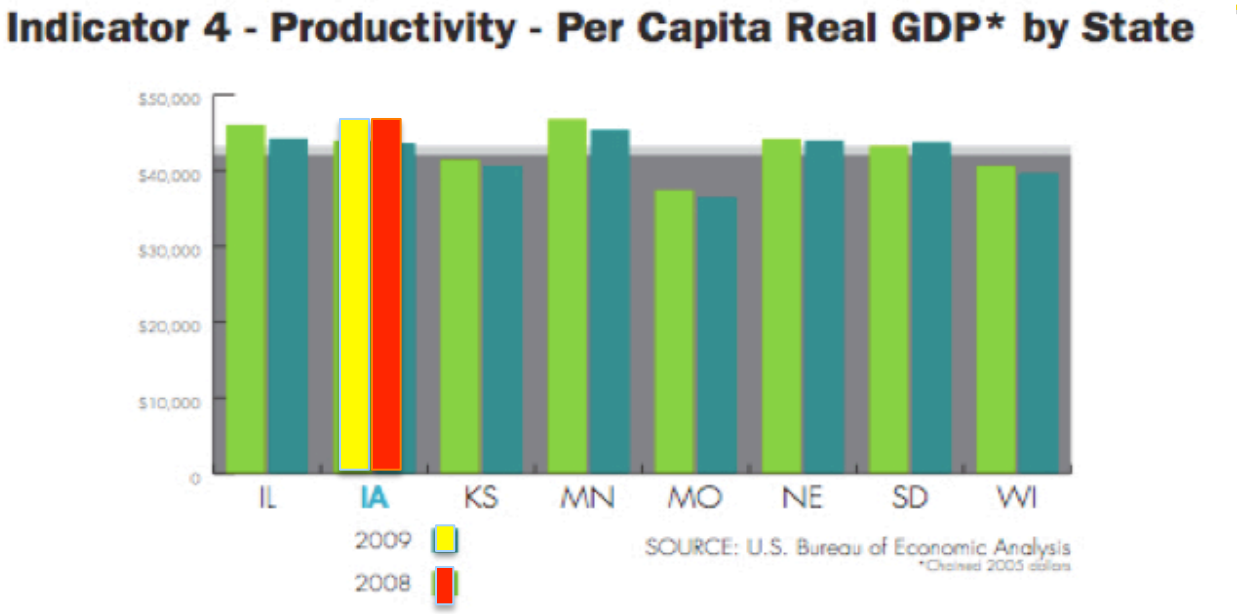
Indicator #4: Economic Impact - Productivity



Indicator Significance

Increasing productivity enables wage growth. It is defined as the value of the outputs per employee (labor productivity) or per unit of capital goods (capital productivity) averaged over the economy as a while increasing employment concentration in technology and knowledge-based industry clusters points to the competitive advantages for the Iowa Innovation Economic and for future economic growth

What Does This Indicator Mean For Iowa?

In productivity – Per Capita Real GDP, Iowa exceeds the national average and positions itself 3rd among the comparable states.

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ASTRA: Iowa 2010 State Innovation Rankings

Rank	General Demographic & Economic Indicators [3]	Iowa	Total U.S.
30	Iowa's Population as of July 1, 2009	3,007,856	304,059,724
30	Iowa's Civilian labor force, 2009 (thousands)	1,685.4	153,203
29	Iowa's Personal income *per capita*, 2008 ($)	$37,402	$40,208
30	High Tech Employment in Iowa's Workforce, 2008	46,180	5,781,460
30	Gross State Product, 2009 ($ billions)	$129	$13,972.3
29	Federal R&D Obligations per Civilian Worker 2007	$377	$764
31	Business R&D in Iowa 2007 (current $ millions)	$1,202	$265,919
Rank	**Academic Indicators & Degree Production [3]**		
32	Advanced S&E Degrees Awarded, 2007	1,256	150,127
30	Bachelor's Degree Holders or Higher Among Individuals 25-44 Yrs. Old In Iowa, 2007	225,941	24,856,576
26	Federal R&D Expenditures at Universities & Colleges, all sources, FY 2006 ($ thousands)	$322,822	$30,033,156
21	State & Local Govt. R&D Expenditures at Universities & Colleges, FY 2006 ($ thousands)	$50,318	$3,016,240
20	Industry R&D Expenditures at Universities & Colleges, FY 2006 ($ thousands)	$29,949	$2,427,627
19	Institutional R&D Expenditures at Universities & Colleges, FY 2006 ($ thousands)	$154,381	$9,062,058
Rank	**NCES Key Educational Statistics — Public Schools (latest) [4]**		
32	Expenditure per Pupil 2007-2008 School Year	$8,753	$9,154
32	Enrollment in Public Elementary & Secondary Schools 2007-2008	485,115	966,519 (avg.)
29	Number of Full Time Equivalent (FTE) Teachers, 2006 - 2007	35,653	3,181,494
Rank	**Workforce Indicators [3]**		
32	Employment in High-Tech Establishments in Iowa, 2006	96,190	13,733,632
37	Individuals in S&E Occupations as Share of Workforce in Iowa, 2008 (percentage)	2.76%	3.75%
32	Employed S&E Doctorate Holders in Workforce in Iowa, 2006	4,890	618,370
33	Engineers in Workforce in Iowa, 2008	10,270	1,626,330
34	Life & Physical Scientists as Share of Workforce in Iowa, 2008 (percentage)	.35%	.40%
Rank	**R&D Spending by Source, R&D Indicators, Awards, & Patents [3]**		
41	SBIR Funding for Iowa Small Businesses, 2006-2008 (current $ thousands)	$4,290	$1,731,667
42	Avg. Annual Federal SBIR Funding per $1 million of GDP in Iowa, 2006-2008	$33	$127
28	Academic R&D in Iowa, 2008 ($ thousands)	$527,769	$51,784,120
19	Patents Awarded per 1,000 indiv. in S&E Occupations in Iowa in 2008	12.1	13.4
49	Hi-Tech Share of all business establishments in Iowa, 2006 (percentage)	5.51%	8.35%
Rank	**Venture Capital & Entrepreneurial Indicators [5, 3]**		
33	Number of Deals CY 2009	8	2,802
23	Venture Capital Investments in 2009 (millions of 2009 $)	$83.6	$17,690.7
25	Net High-Tech Business Formations in Iowa, 2006	150	14,031

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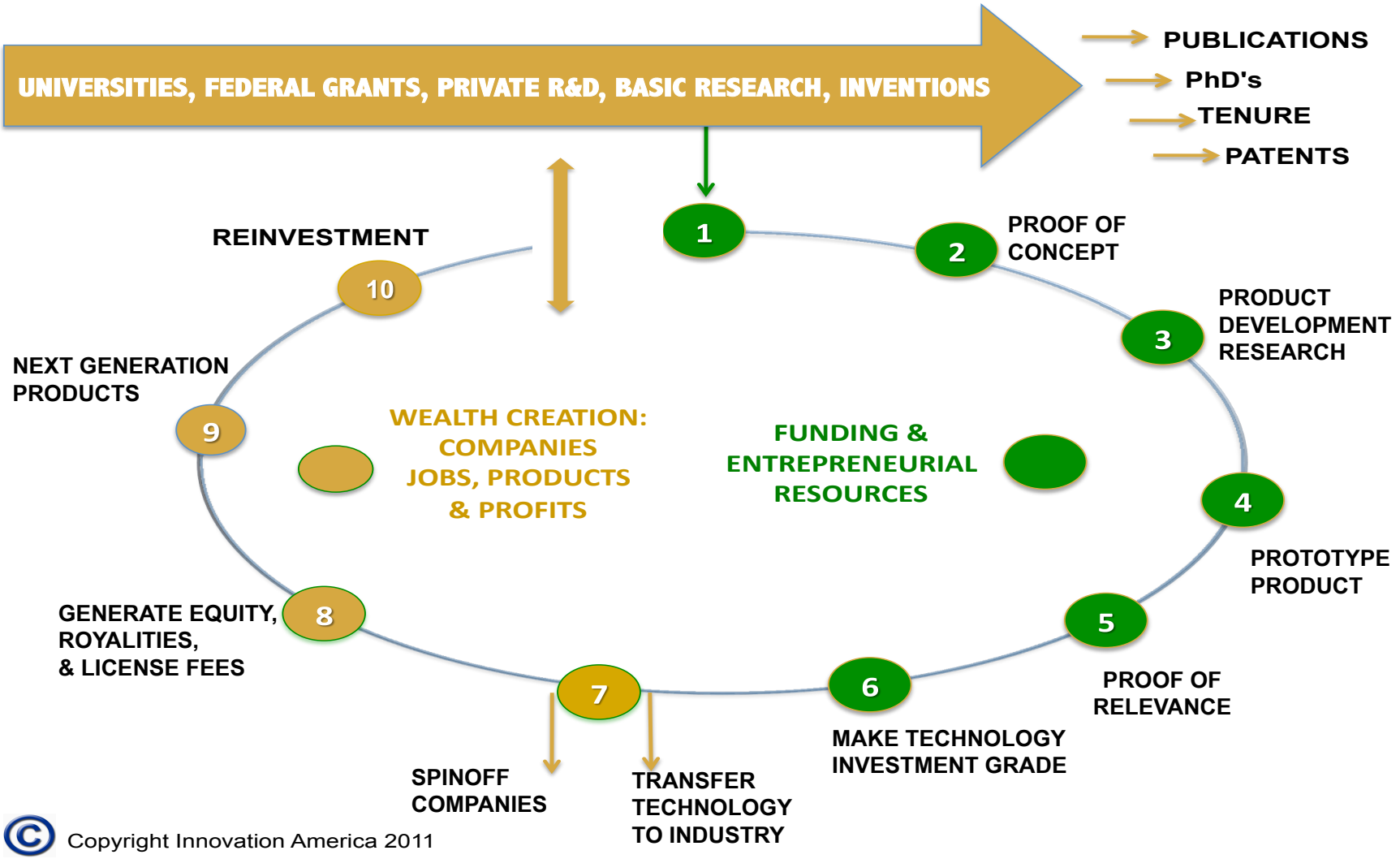
Innovation America Commercialization Model



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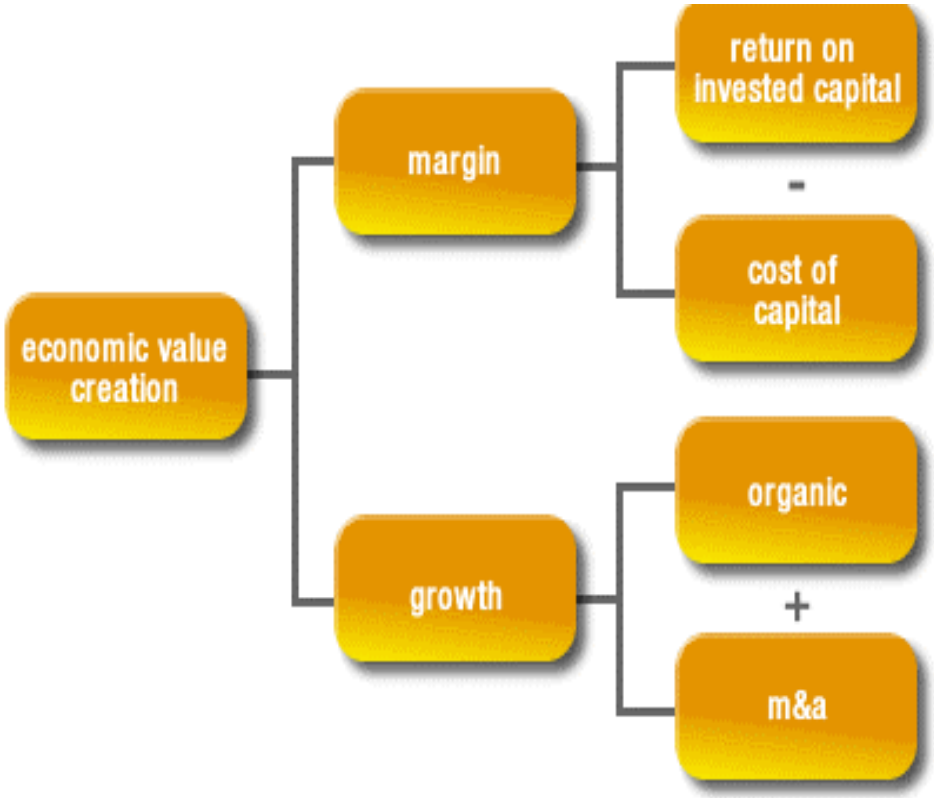
Innovation Paradigm Shift

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

PROOF OF RELEVANCE
(Market Pull)
"It Works To Solve A Problem"



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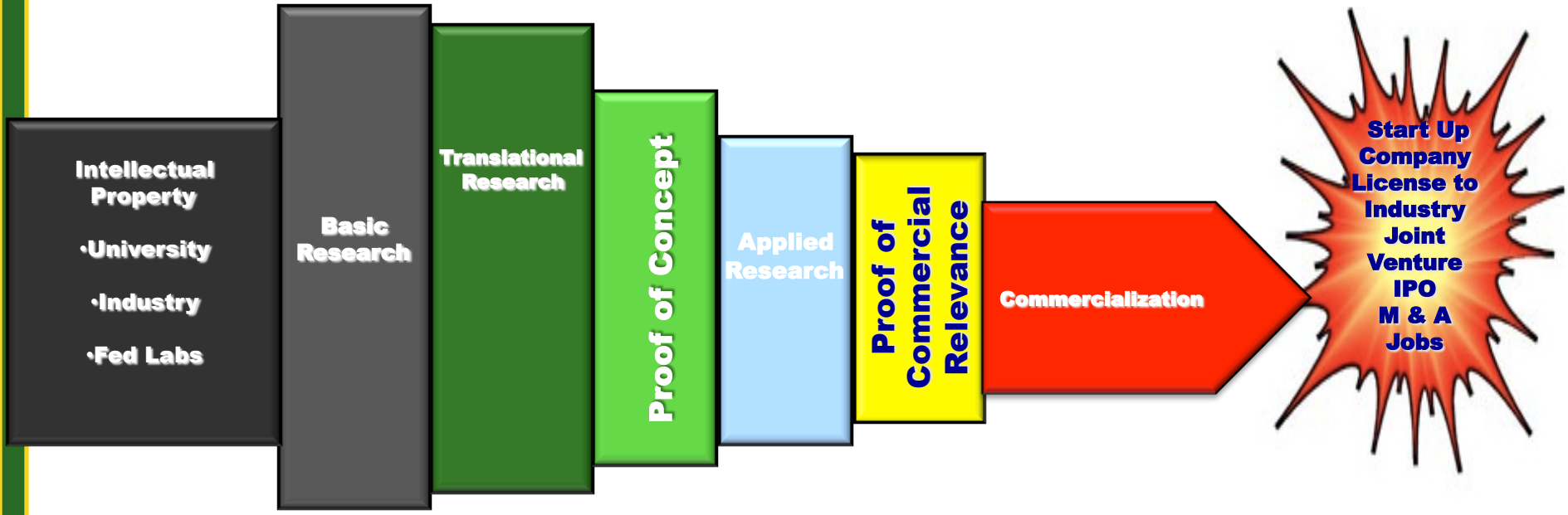
Iowa Integrated Innovation Commercialization Network ™

Knowledge Infrastructure: Interns → MBA's → PhD's → Post Docs → Univ. Research → IIICN → Mentors/Advisors → Industry

Management



State & University Funding: POCC → Demonstration Fund → POCR → State Funds → Iowa Seed Fund

Federal & Public Funding: SBIR/SSTR Phase I&II → TIP → SBIR 2B → I6 Green → E-RIC → Other Public Funds

Private Funding: Foundation → Angel → Seed → Venture Capital → Mezzanine → Debt → Bank

Iowa Innovation Company Success Stories

SENSR
Intelligent technology. Measured results.

Chris Kavars

•**Location: Elkader, Iowa**

About Sensor:

•SENSR is in the business of measuring dynamics, or more simply, measuring the motion of an object.

•The company services more than **700 customers in more than 40 countries and on six continents.**

•SENSR's primary market is in civil engineering and structural monitoring.

•In this arena, SENSR's equipment is used to monitor and report data to project managers or engineers related to the integrity of a structure.

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Iowa Innovation Company Success Stories

cemen tech INC

Location: Indianola, Iowa

About Cementech

•The concept behind CemenTech's machinery is simple -- rather than mixing a batch of concrete with a short shelf life at a remote location and trucking it into the job site, why not mix the ingredients right on the truck?

•That novel concept has led to the Indianola, Iowa, company's machinery being sold in **over 50 countries around the globe.**

Iowa Innovation Company Success Stories

BODYVIZ.COM
SIMPLE. VISUAL. 3D.

Location: Ames, Iowa ISU Research Park

Curt Carlson

About BodyViz:

•Creates incredible 3D MRI/CT scan visualizations, unlocking medical imaging for doctors, specialists, surgeons as well as educational institutions.

•BodyViz has been awarded the prestigious **Prometheus Award for Startup Company of the Year** by the Technology Association of Iowa, was awarded first place in the John Pappajohn Iowa Business Plan Competition

•Featured on the megahit reality television show **The Biggest Loser**.

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IIICN Promotion & Outreach

- Regional Meetings:
  - Getting the word out on IPEP initiative & updated Demo Fund application process
  - Collaboration among Farm Bureau, IDED, CIRAS & VentureNet to schedule/organize
  - Initial series of meetings at SMART Conference & at 5 Community College locations around state
  - Company presentation to Expert Review Panel at each meeting (with audience participation)

IIICN Promotion & Outreach

PROMOTION AND OUTREACH ACTIVITIES

- Regional Meeting Schedule:
  - May 5: SMART Conference
  - June 15: Iowa Central CC – Ft. Dodge
  - June 21: Northeast Iowa CC - Dubuque
  - June 23: Eastern Iowa CC - Clinton
  - June 28: Iowa Western CC – Council Bluffs
  - June 30: Iowa Lakes CC – Spencer
- Other locations to follow

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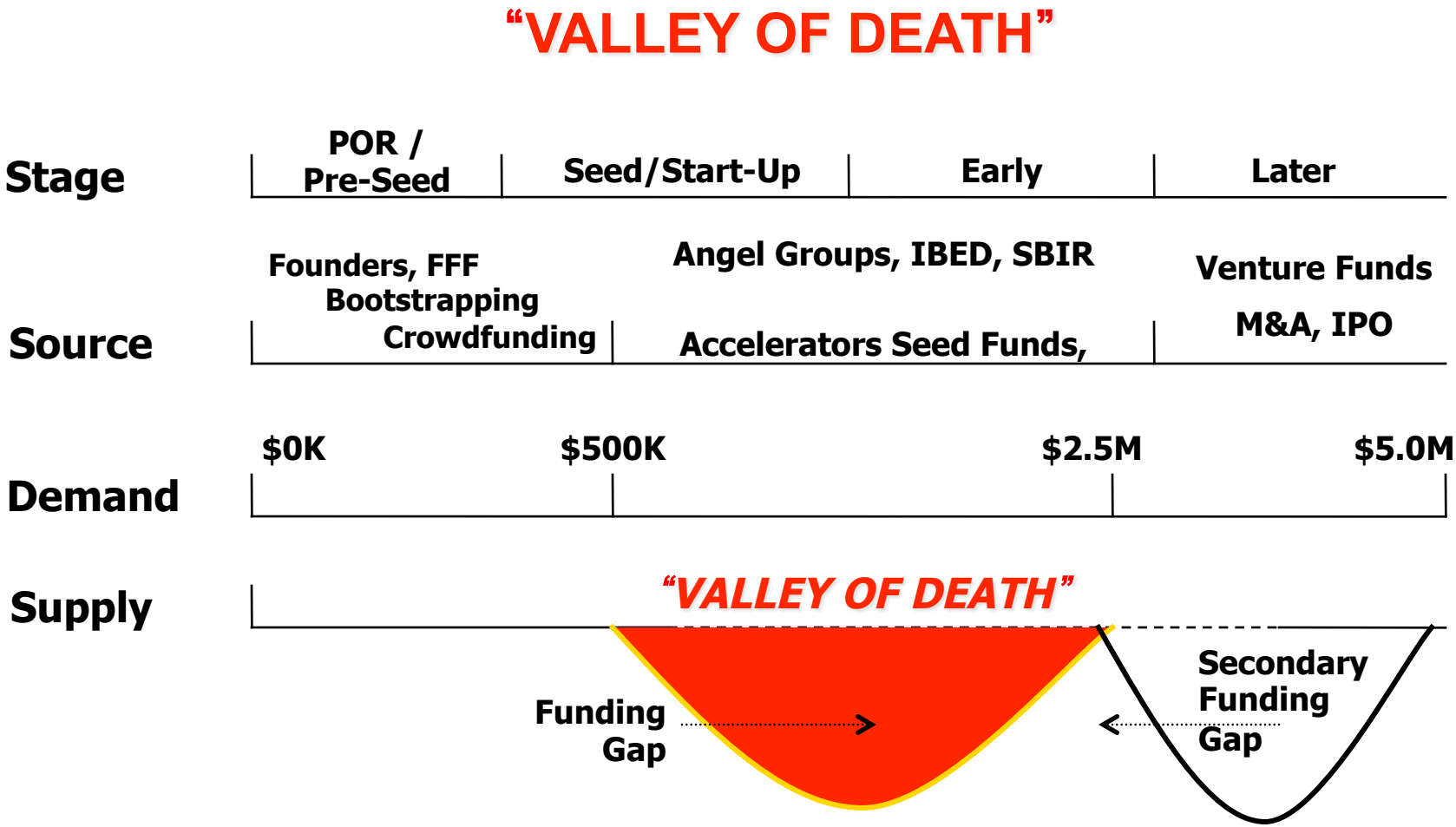
Innovation Capital Valley of Death



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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"*

Funding & Resources for Innovation Capital

Seed

- Bio Advance — Biotechnology Greenhouse of Southeastern Pennsylvania
- NJTC Venture Fund
- Edison Venture Fund
- First Round Capital
- SeventySix Capital
- Delaware Innovation Fund
- NYSTAR

IBED

- Ben Franklin Technology PArtners — 25th Anniversary
- EDA — New Jersey Economic Development Authority
- First State Innovation — Accelerating Delaware's Entrepreneurial Economy
- Maryland TEDCO — Technology-Development-Corporation
- cotec Portugal — Associação Empresarial para a Inovação

Federal

- SBIR & STTR
- NGA CRADAs — Cooperative Partnerships Solve Complex Problems
- TIP — Technology Innovation Program
- PCP
- NRC-CARC Canada — NRC Industrial Research Assistance Program

Angel

- eban
- European American Angel Club
- Australian Association of Angel Investors — aaai
- MAG
- JumpStart New Jersey Angel Network
- LORE Associates
- RobinHood Ventures
- SouthCoast Angels — "A Member Managed Angel Fund"
- New York Angels

Entrepreneur

- DREAMIT Ventures
- techstars
- Y Combinator
- seedcamp

Iowa & Federal Innovation Capital Programs

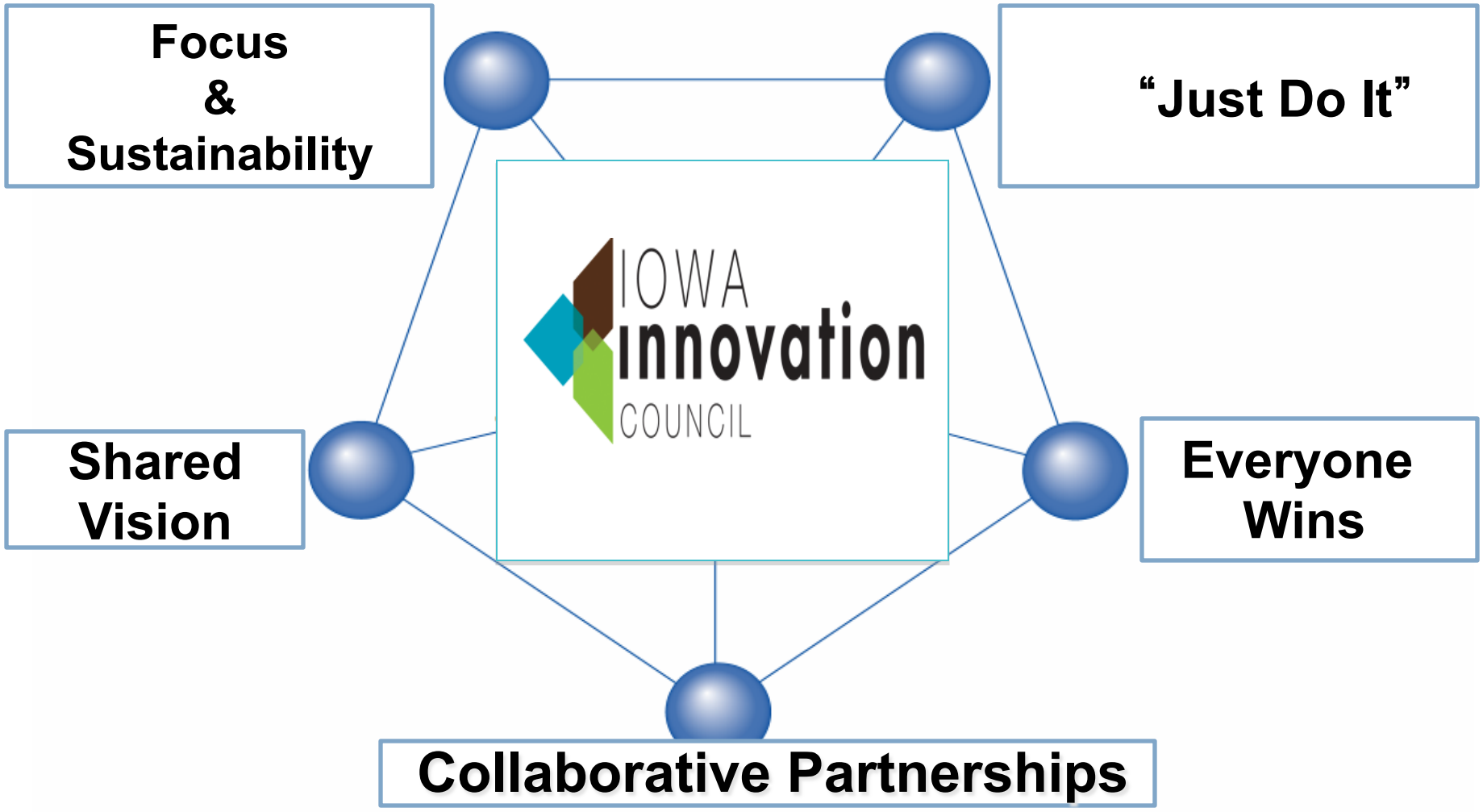
State

- Iowa Demonstration Fund
- Iowa Seed Fund

Federal Agency Grant Programs

- EDA i6 Green - $12M
- EDA The Jobs and Innovation Accelerator Challenge
  a Coordinated Initiative To Advance Regional Compe
  $33M
- USDA/ARS Rural Development Funding Programs
- E-RIC DOE Grants
- SBA – New Markets Venture Capital and SBIC

IIC Key Components for Success



IOWA Innovation Leadership

IOWA ASSOCIATION OF
BUSINESS AND INDUSTRY

The Voice of Iowa Business Since 1903.

THE BEST WAY TO PREDICT THE FUTURE IS TO CREATE IT

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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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