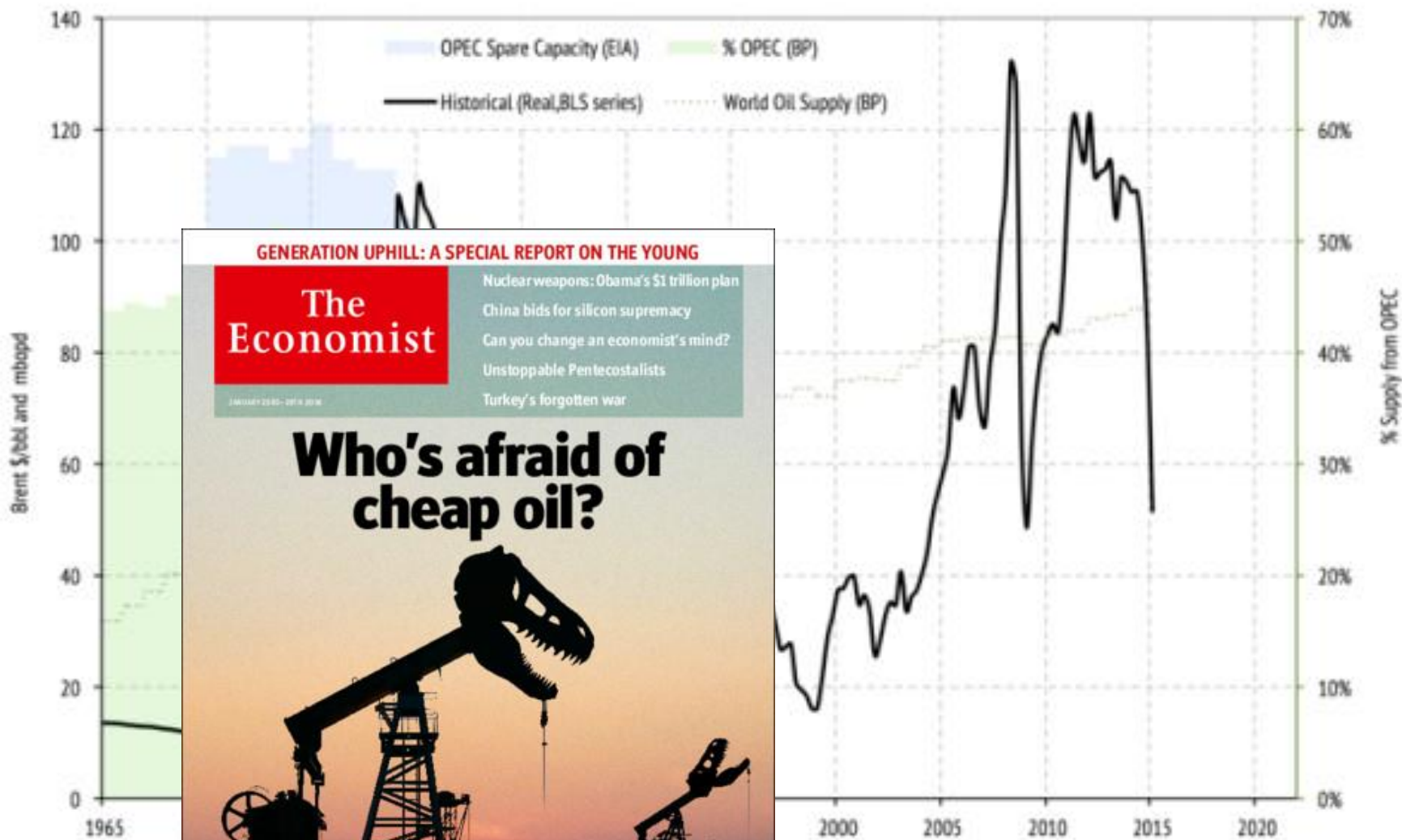


# **Cluster-Based Economic Development: A Strategic Approach towards enhancing Alaska's Competitiveness**

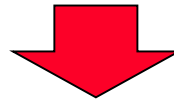
Dr. Christian H. M. Ketels  
Institute for Strategy and Competitiveness, Harvard Business School  
President, The TCI Network

*Juneau, Alaska  
9 February 2016*



# Immediate Priorities

- **Fiscal retrenchment**
- **Stabilizing business and consumer sentiment**



- **Need a **strategic plan** for growing the Alaskan economy**
  - Putting short-term actions into a longer-term logic
  - Developing competitive advantages for the state
- **With (dramatically) shrinking funds **setting priorities** is critical**

# Getting to a Plan for Action

## *From Concepts...*

- What drives the **competitiveness** of locations?
- How can **cluster-based economic development** raise competitiveness?

## *...To Reality*

- How competitive is **Alaska**, and how can it raise its game?
- What is the role of **Alaskan businesses**? Of **state government**? Of the **university system**?

# What is Competitiveness?

**Citizens enjoy a high standard of living,  
based on well-paying jobs**



**PRODUCTIVITY**

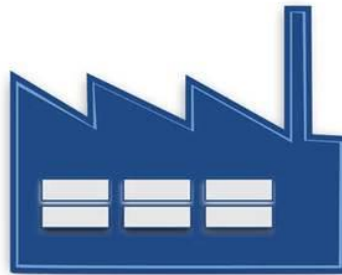
**Companies can successfully compete  
on national and global markets**

# What Drives Competitiveness?

**What you  
have inherited**



**What you  
do**



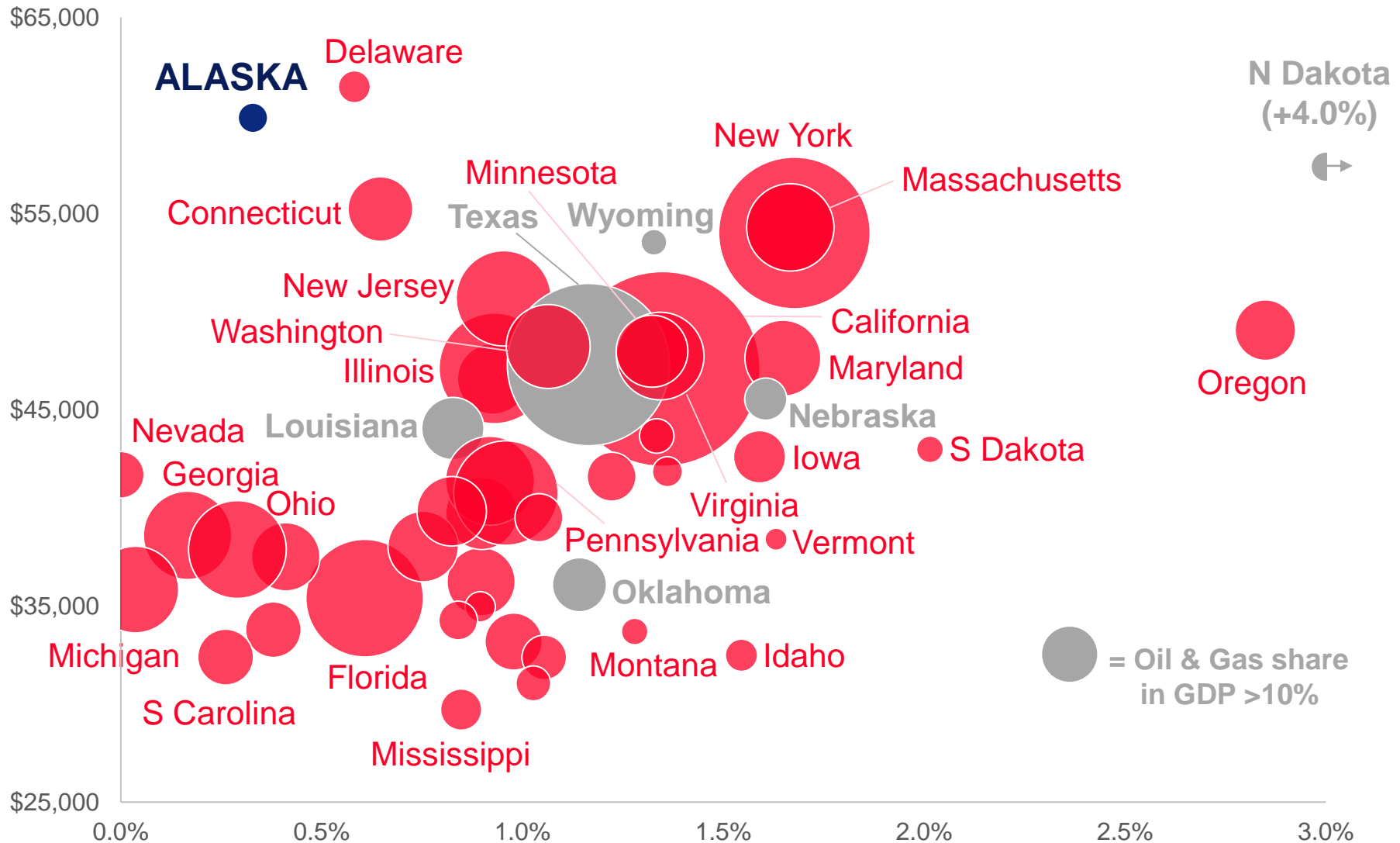
**What you  
have created**



# Prosperity Dynamics Across US States

## What you have inherited

GDP per Capita,  
2013



● = Oil & Gas share  
in GDP > 10%

Bubble size = total GDP

GDP per Capita Growth, 1998 - 2013

# What Drives Competitiveness?

## What you have inherited

**The level of prosperity  
that a location can generate for its population,  
given its attractiveness for companies**



**Natural Resources**

**Direct  
prosperity**

**Trigger for  
clusters**



# From Natural Resources to Knowledge: The Norwegian Oil and Gas Cluster Initiative

- Natural resources
- Demanding natural conditions
- Available skills in related clusters



- Long-term **policy** to build globally competitive, knowledge-driven businesses



**74 companies**

**9 networks**

**11 project areas**

**+ related clusters, academic  
partners, international  
networks**

# What Drives Competitiveness?

## What you have inherited

**The level of prosperity  
that a location can generate for its population,  
given its attractiveness for companies**



## **Natural Resources**

**Direct  
prosperity**

**Trigger for  
clusters**

**Volatility**

**Economic  
Distortions**

**Political  
Incentives**

**Often  
Bounded**

# The Composition of Regional Economies

## What you do: A Cluster-View

### Traded vs. Local Share of the U.S. Economy



#### Traded Industries

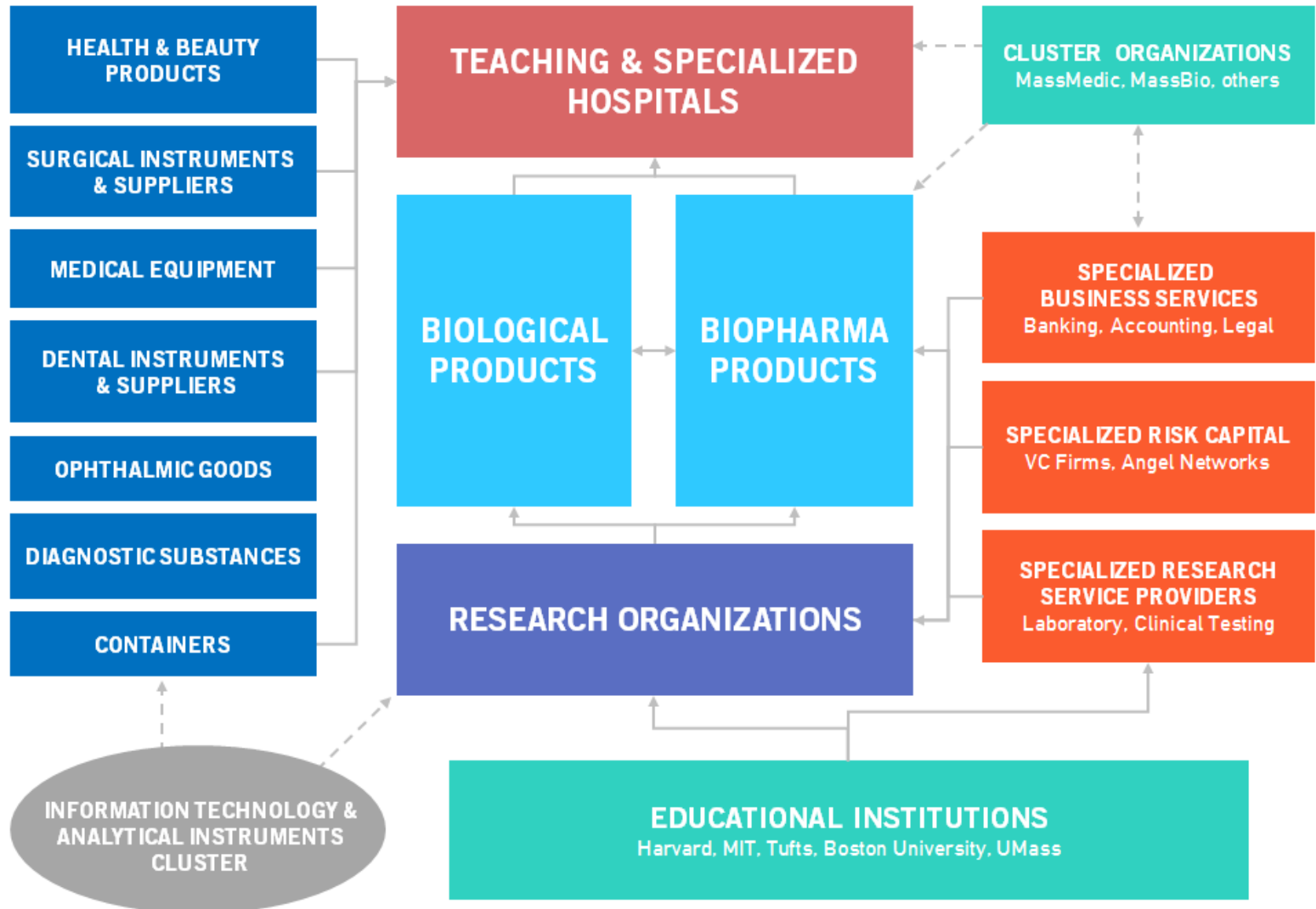
- ‘**Spiky**’ across space; 2/3s of all traded industry employment is concentrated in strong clusters
- Serve **national and global markets**

#### Local Industries

- Present **everywhere** at similar levels
- Serve exclusively the **local market**

# A Traded Industry Cluster: Biopharmaceuticals

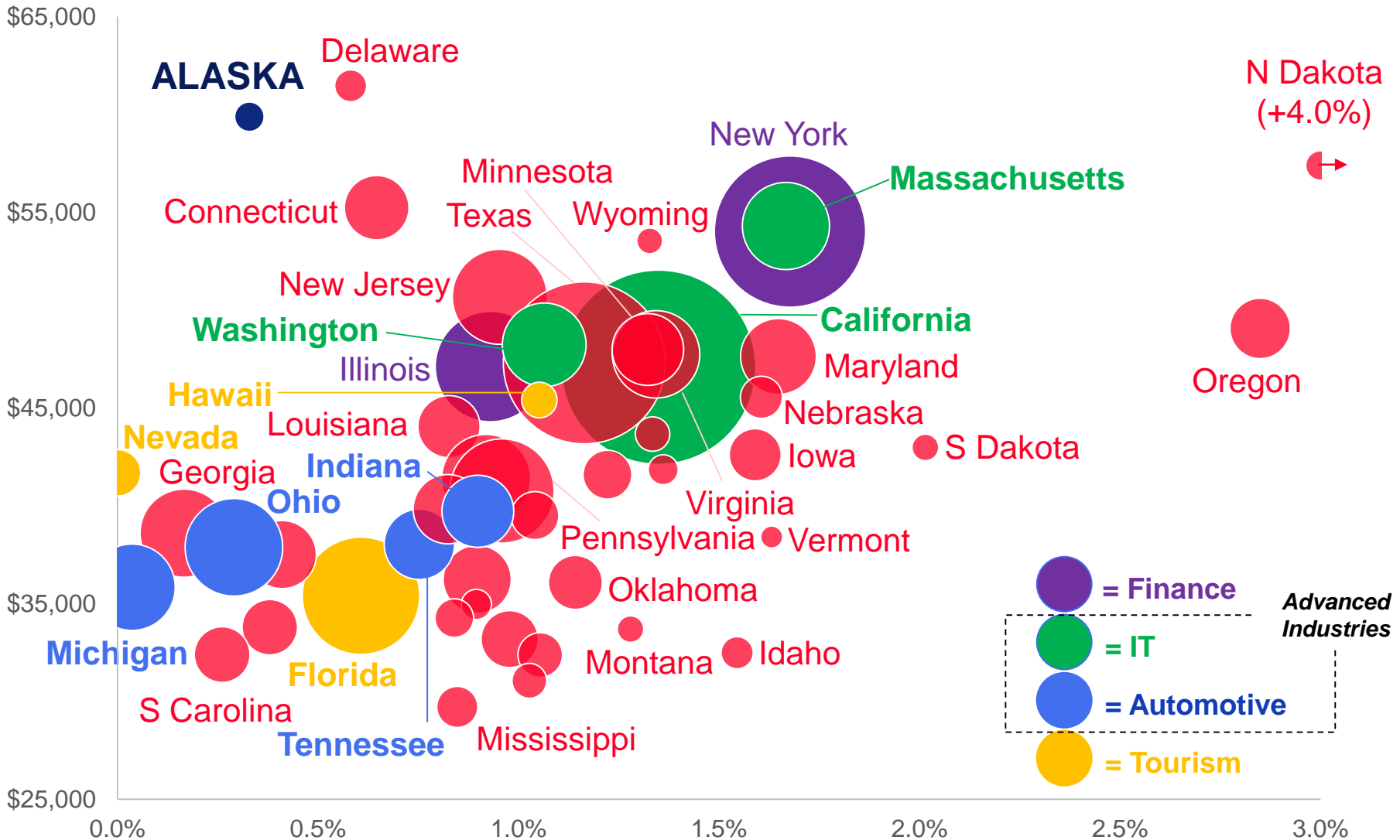
## Related Industries, Proximity, and Linkages



# Prosperity Dynamics Across US States

## What you do: Leading States in Selected Clusters

GDP per Capita,  
2013



Bubble size = total GDP  
Source: US Cluster Portal, Brookings

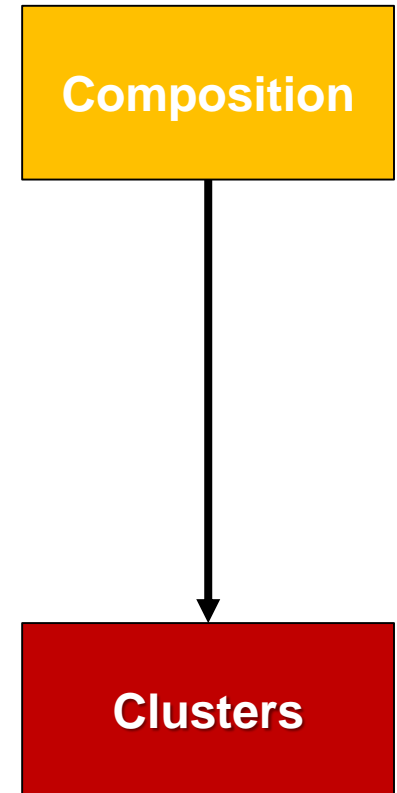
GDP per Capita Growth, 1998 - 2013

Copyright 2016 © Christian Ketels

# Prosperity Dynamics Across US States

## What you do: Research Findings

- More prosperous locations are active in **industries and clusters with higher wages and value-added** than those sectors dominant in less prosperous states
- More prosperous locations tend to have a more **diversified portfolio**, i.e. strong positions in a larger number of clusters
- Prosperity depends significantly more on **how well you do in each industry you are in** than on the mix of industries you have
- Industries perform better if they are part of **clusters** with critical mass and high internal dynamism
- More prosperous locations have a larger share of their traded industry employment in **strong clusters**, i.e. groups of related industries with critical mass



# What Drives Competitiveness?

## Selecting the Right Target For Policy Action

### *Policy dynamics*

- *Longer-term*
- *Sustainable*
- *Regional prosperity*

What you  
have created

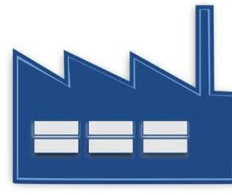


What you  
have inherited



What  
you do

How well  
you do it



How  
prosperous  
you are



### *Policy dynamics*

- *Short term*
- *Unsustainable*
- *Private profit*

# What You Have Created

## Microeconomic Drivers of Competitiveness

### Business Environment

- Skills, knowledge
- Infrastructure
- Efficient public services
- Access to capital
- Competitive markets
- Rules and regulations
- Demand conditions

### Cluster Presence

- Critical mass in specific groups of related and supporting industries
- Strengths of linkages and cluster dynamics

### Company Sophistication

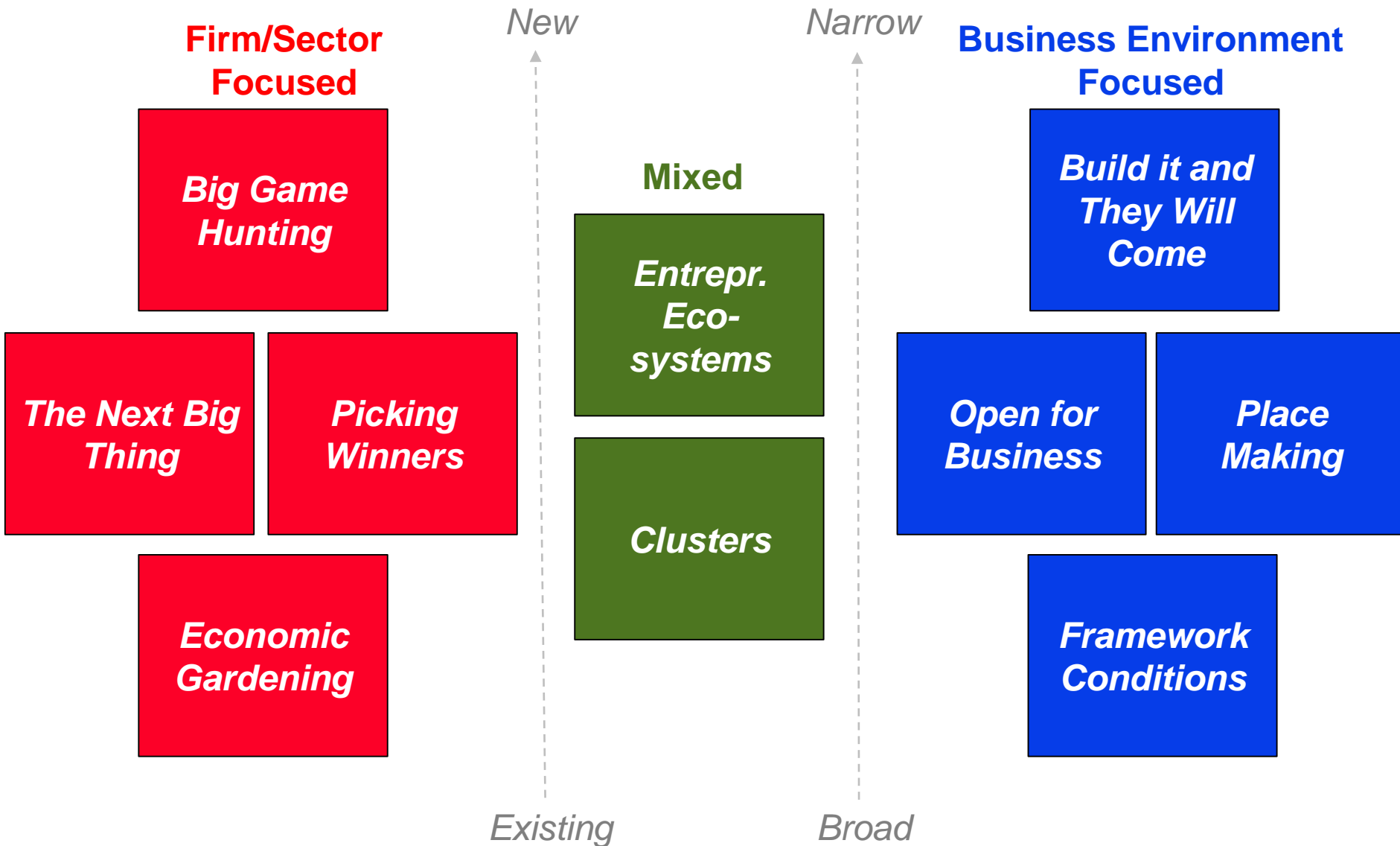
- Quality of companies' operational practices
- Nature of companies' competitive advantages



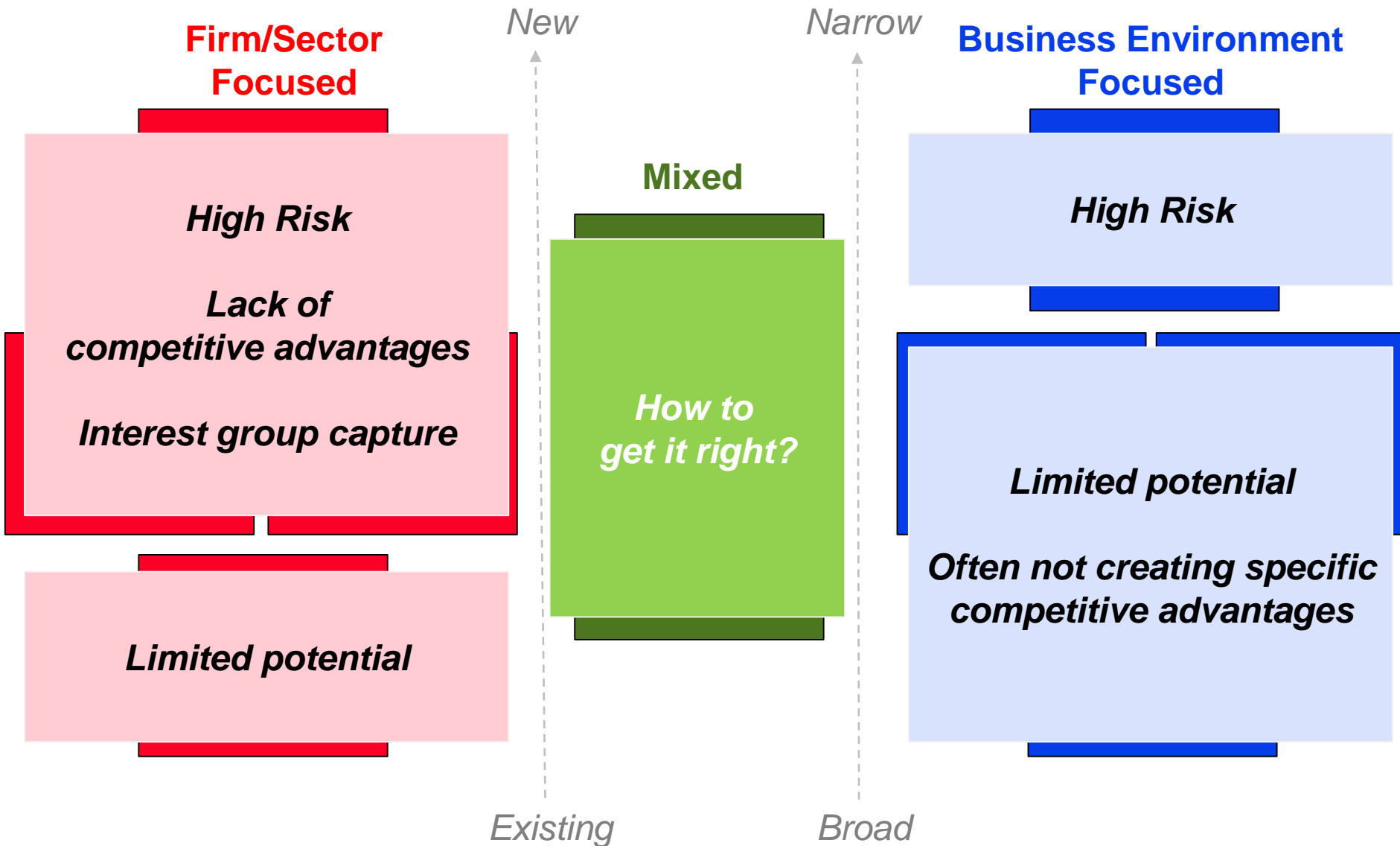
# Upgrading Competitiveness: Principles

- **There is no silver bullet**
- **Many things matter**
- **What matters most depends on what you already have**
- **Every location is different, but all adhere to the same economic principles and dynamics**
- **You can't change everything at once, even if all has to change eventually**
- **Change requires action by many**

# Economic Development: Prevailing Approaches



# Economic Development: Prevailing Approaches



# Cluster-based Economic Development

## WHERE

## WHAT

## WHAT NOT

### *Emerging clusters*

- *Risky; identification of opportunities*
- *Lower likelihood of impact*
- *Transformative if successful*

**Entrepr.  
Eco-  
systems**

- Enhance cluster-specific business environment conditions

**Clusters**

- Encourage collaboration within clusters

- **Creating clusters**, i.e. building agglomeration in specific fields
- Supporting clusters by **sheltering firms from competition** or providing subsidies

### *Existing clusters*

- *Straightforward identification*
- *High likelihood of impact*
- *Gradual change*

# Clusters in a Small Economy: Iceland



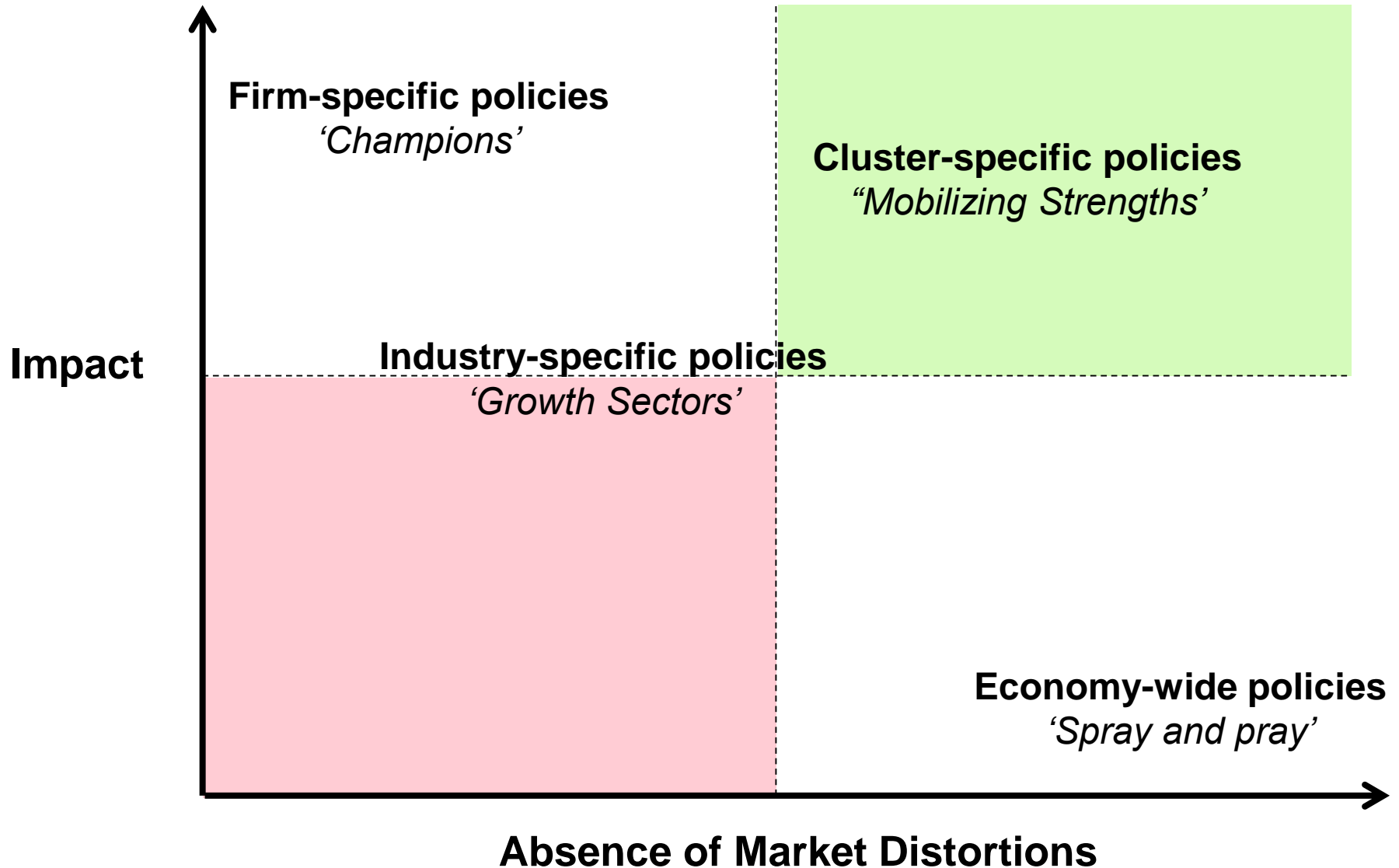
Article - 27/07/2015

## Aluminum Cluster in Iceland

Over 30 companies and institutions in Iceland have established the Icelandic Aluminum Cluster. The founding companies work in or for the aluminum industry in Iceland in the areas of production, service, processing and development of aluminum production. The objective is to increase the competitiveness of the participating companies in the cluster through increased cooperation and exposure, research and innovation in the field. Among the founders are aluminum producers, engineering firms, mechanical shops, equipment suppliers, logistic firms, shipping companies, construction and financial firms, as well as research and educational institutions.



# Cluster Policy in Context



# Types of Government Interventions in Clusters

- Direct intervention at the **firm level**
  - Attraction of firms
  - Subsidies, directed credit

- Investments in the **cluster-specific business environment**
  - Specific to the cluster
  - Benefiting the cluster but part of a general upgrading strategy

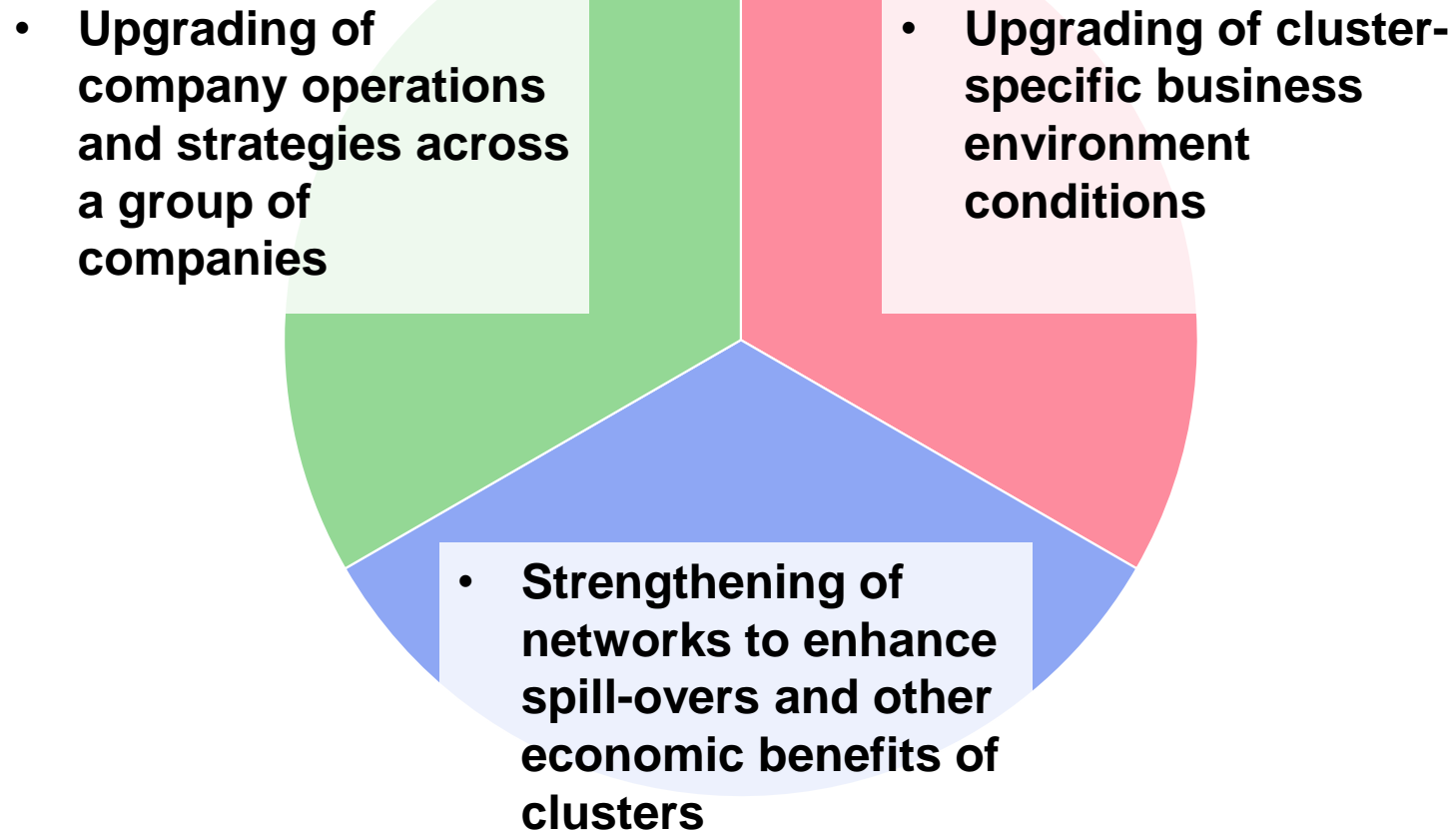


- Intervention into the **market**
  - Provision of monopoly rights; Entry/trade barriers
  - Demand subsidies

- **Enable collaboration** with and within the cluster
  - Support for cluster initiatives
  - Active engagement with the cluster in setting and implementing policies

# What are Cluster Initiatives?

Cluster initiatives are **collaborative activities** by a **group** of companies, public sector entities, and other related institutions with the objective to improve the competitiveness of a group of **interlinked economic activities in a specific geographic region**





# Southeast Alaska Cluster Initiative

## Strengthening Linkages within Clusters



VISITOR  
PRODUCTS



OCEAN  
PRODUCTS



RENEWABLE  
ENERGY



RESEARCH



MINING SERVICES  
AND SUPPLY



FOREST  
PRODUCTS

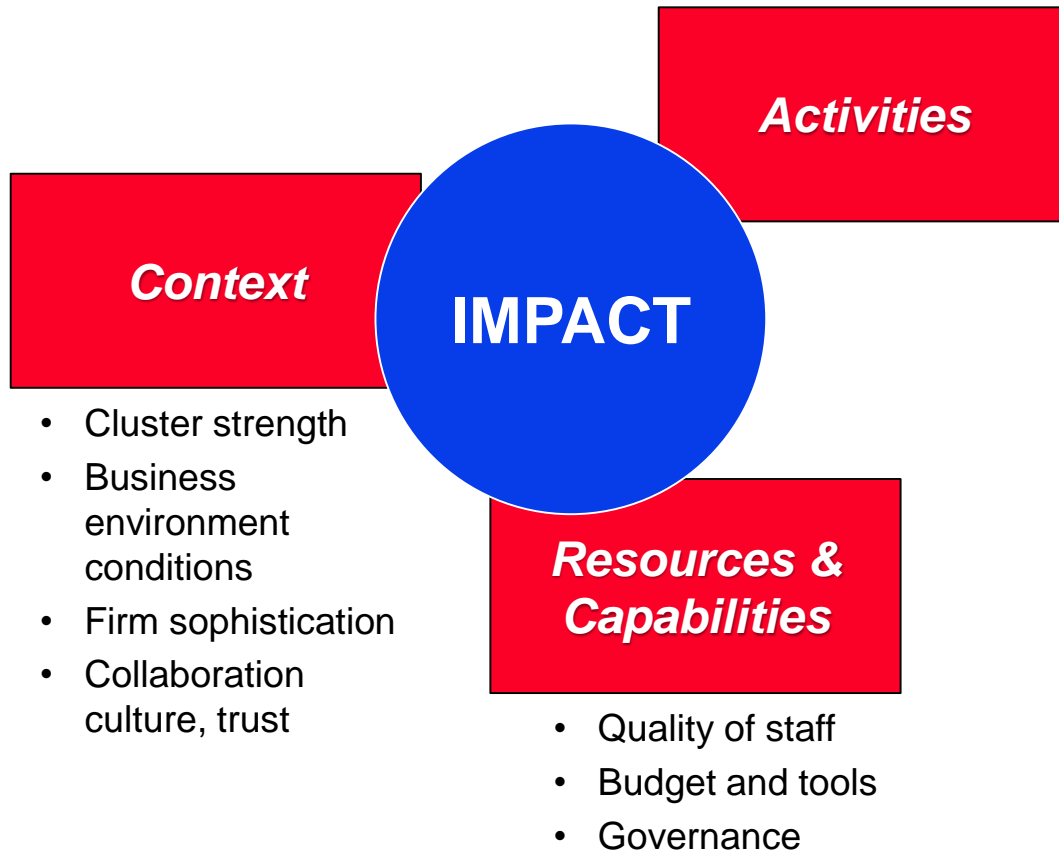


ARTS AND CULTURE

- Collaboration between firms
- Alignment of government actions with business needs
- Cross-cluster linkages

# What Drives the Success of Cluster Initiatives?

- Activities aligned with the needs of firms
- Activities aligned with actions of partners
- Effectiveness of implementation



## Narrow model

- Focus on networking
- Limited resources
- Limited impact



## Systemic model

- Cluster initiatives as key channel for delivering policy action
- Moderate operational resources, strong influence on other investment streams
- High impact possible

# Cluster-Based Delivery of Economic Policy

## Basque Country, Spain

**Institutions  
(1980s)**

**Efficiency  
(1990s)**

**Innovation  
(2000s-)**

**Machine Tools  
AFM, 1992**

**Appliances  
ACEDE, 1992**

**Automotive  
ACICAE, 1993**

**Port Logistics  
UNIPORT  
BILBAO, 1994**

**Environmental  
Services  
ACLIMA, 1995**

**Electronics,  
Computing and  
Telecom  
GAIA, 1996**

**Energy  
CLUSTER  
ENERGIA, 1996**

**Aeronautics  
HEGAN, 1997**

**Maritime  
Industry ORO  
MARÍTIMO  
VASCO, 1997**

**Paper CLUSTER  
PAPEL1998**

**BioBasque,  
2002**

**Audiovisual  
EIKEN, 2004**

**Transport and  
Logistics  
CLUSTERTIL,  
2005**

# Developing a Cluster-Based Economic Strategy



## Diagnostics

- What is the profile of our performance?
- What business environment conditions do we offer?
- What clusters do we have? How are they positioned?



## Choice

- What business environment conditions do we want to offer?
- Which type of companies and skills do we aim to attract with these qualities?



## Action Plan

- What are the priorities for action?
- Who is going to do what?
- How do we deploy our resources?
- What channels and platforms can we use?

# Diagnostics

More than **research....**

Creating a **common language**

Creating a **shared understanding** of reality

Preconditions for becoming **one regional team!**

# Alaska

## Key assets and characteristics

- Oil and gas resources
- Fishing resources
- Tourism amenities
- Harsh climate
- Peripheral location
- Modest overall size, low density
- Lack of medium-sized companies, of headquarters of large firms
- Moderate skill base
- Limited innovative capacity
- Few deep clusters
- ...

- An economy largely dependent on its **natural resources**
- Few activities outside of these sectors successfully **competing in national or international markets**

# Alaska's Cluster Portfolio

## Presence of Strong Clusters

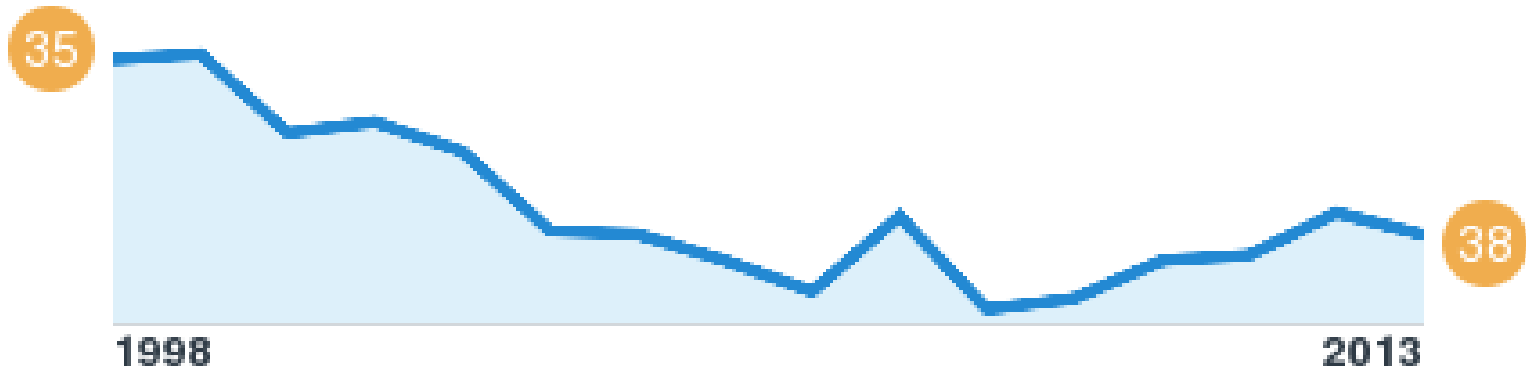
### Alaska

*Percent of Traded Employment in Strong Clusters* **1998-2013**

growth rate

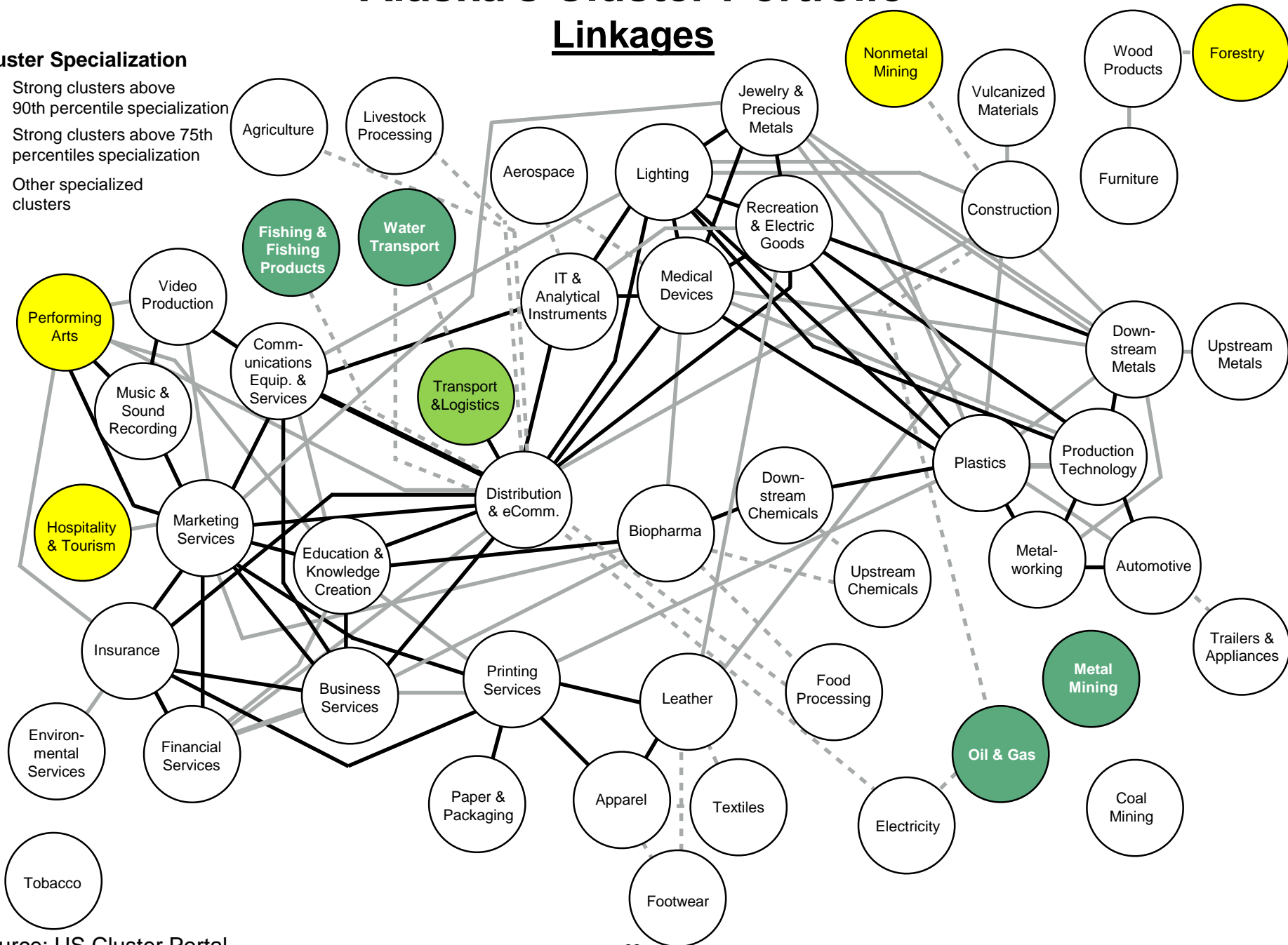
**-1.55%** 38 rank

**27.66%**



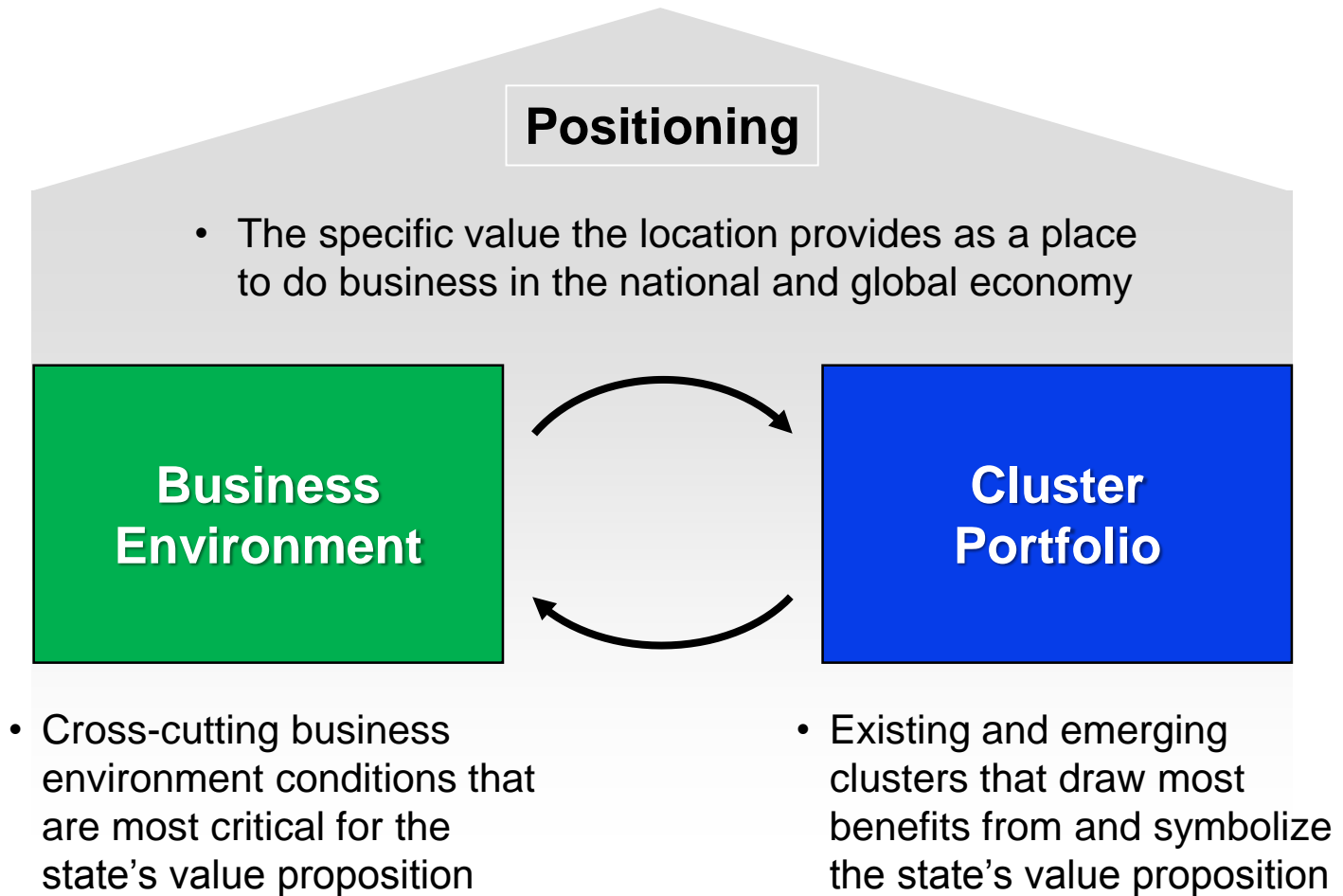
## Linkages

- Strong clusters above 90th percentile specialization
- Strong clusters above 75th percentiles specialization
- Other specialized clusters



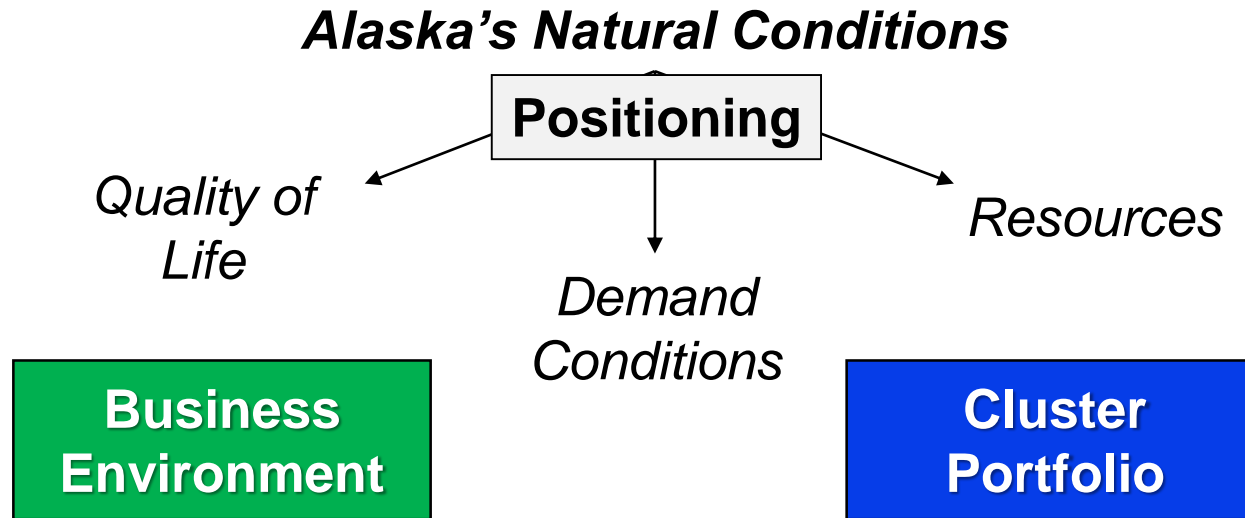


# Strategic Choices



# Strategic Choices

## Towards a Value Proposition for Alaska



### **Build positions in narrow research fields**

- Ocean-related
- Climate-related
- ...

### **Develop key locations**

- Density, attractiveness

### **Leverage the unique qualities of the location**

- E.g., clothing, food products
- E.g., product testing

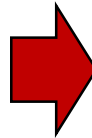
### **Strengthen existing clusters**

- *Fishing*: value added
- *Oil and gas, mining*: from extraction to knowledge
- *Tourism*: Targeted deepening

# Making it Happen: The Need for New Partnerships

## Old Model

- **Government** drives economic development through policy decisions and incentives



## New Model

- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and private sector organizations

# Making it Happen in Alaska



Firms

Government

Academia

- Getting the **basics** right is crucial (open markets sustainable fiscal policy, government efficiency)
- Government has a unique ability to **convene** regional partners, and to drive towards **collective choice and action**
- State government has a critical role **to connect federal resources to local capabilities**

# Organizing for Competitiveness

## AGENDA SETTING

The Danish Competitiveness Council

- Connect consultation structures with political decision making on legislative action, budget

## COORDINATION

The Finnish Science and Technology Council

- Across different functional areas of government
- Across different levels of government

## DELIVERY

Economic Development Board (Singapore)  
Pemandu (Malaysia)

- One-stop shop with ability to integrate implementation
- Business-like management and culture

# Making it Happen in Alaska

*Alaska needs all of you to work together!*



**Firms**



**Government**



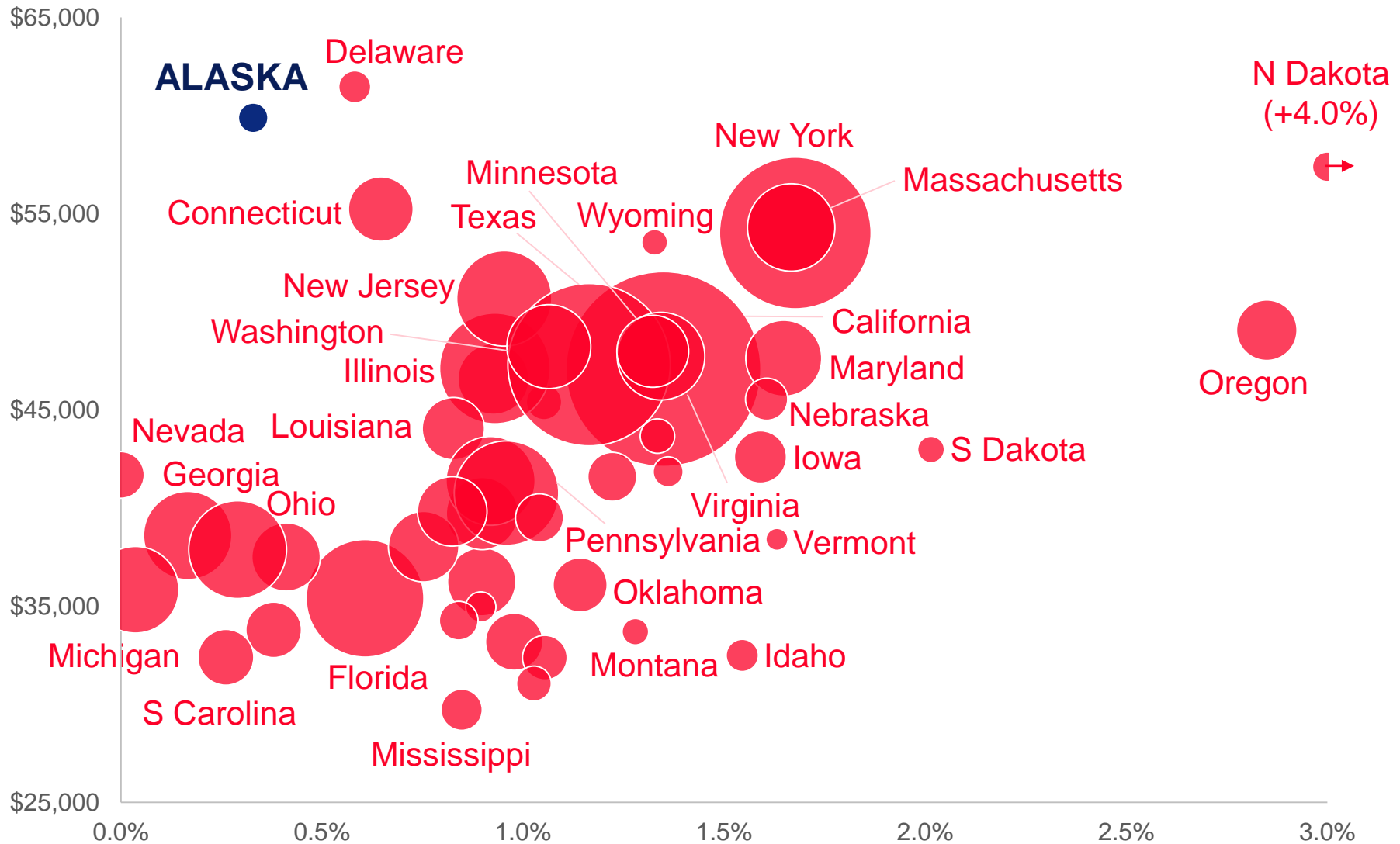
**Academia**

# Back-Up

# Prosperity Dynamics Across US States

## 1998-2013

GDP per Capita,  
2013



Bubble size = total GDP

GDP per Capita Growth, 1998 - 2013



# The Role of Government in Cluster Initiatives

## Government should

- Support *all* existing and emerging clusters
- Participate
- Enable data collection and dissemination at the cluster level
- Be ready to implement recommendations

## Government may

- Initiate/  
Convene
- Co-Finance

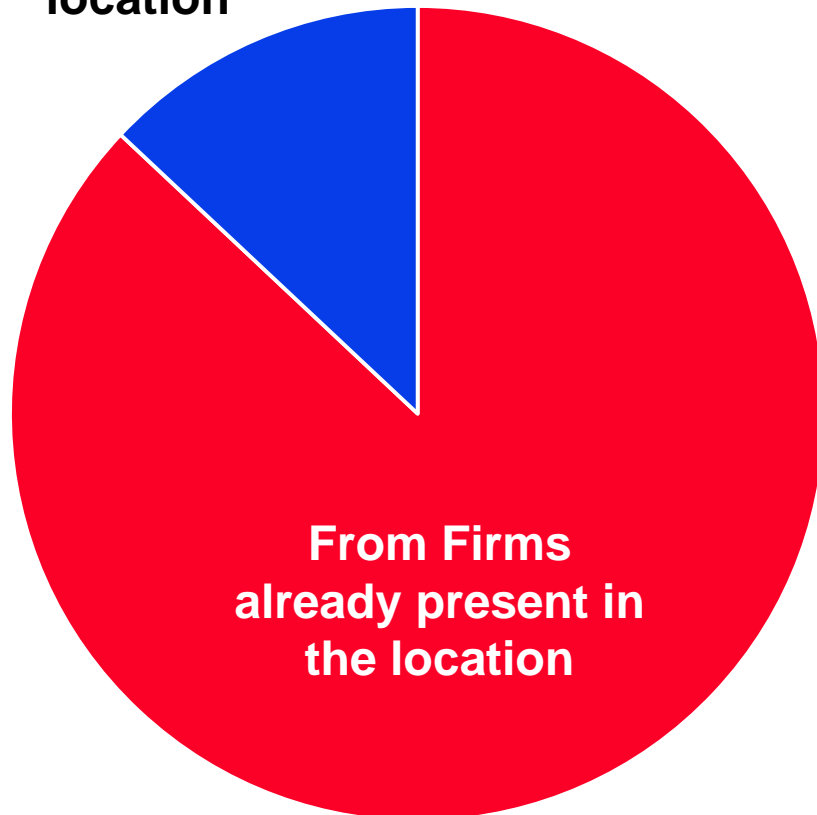
## Government should not

- Pick favored clusters
- Pick favored companies
- Subsidize or distort competition
- Define cluster action priorities

# Net Job Creation by Firm Type

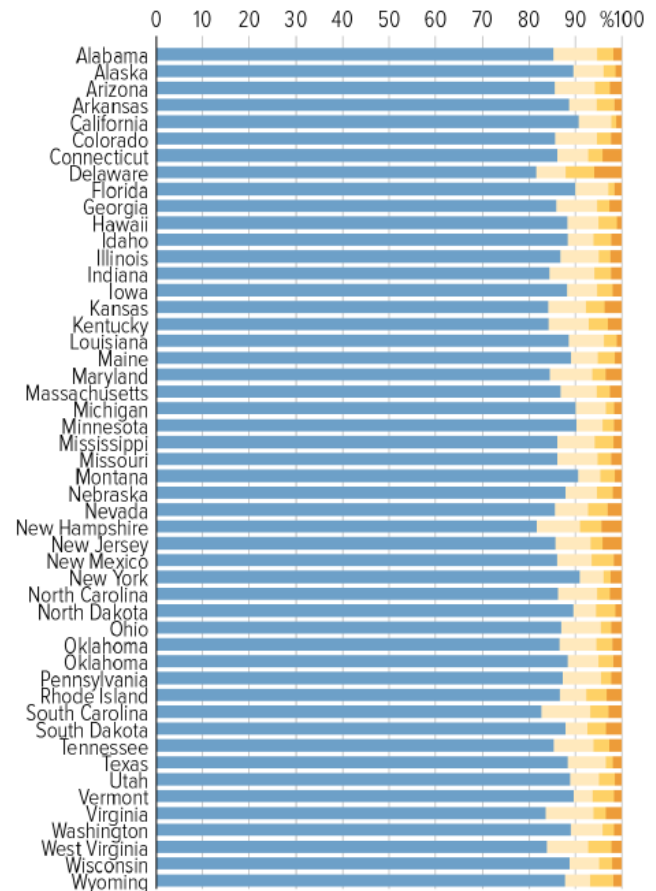
## 1995 - 2013

**From Firms  
coming to the  
location**



Shares of gross private sector job gains, 1995-2013

- Home-grown jobs: start-ups and expanding in-state businesses
- New branches of businesses headquartered out-of-state with prior in-state locations
- First in-state branch of businesses headquartered out-of-state
- Move-in jobs: jobs relocated into state from another state



Source: National Establishment Time-Series (NETS) database (Walls & Associates) provided under contract by the Business Dynamics Research Consortium: a project of the University of Wisconsin - Extension Division for Business and Entrepreneurship.

# Skills, Wages, and Alaska's Workforce

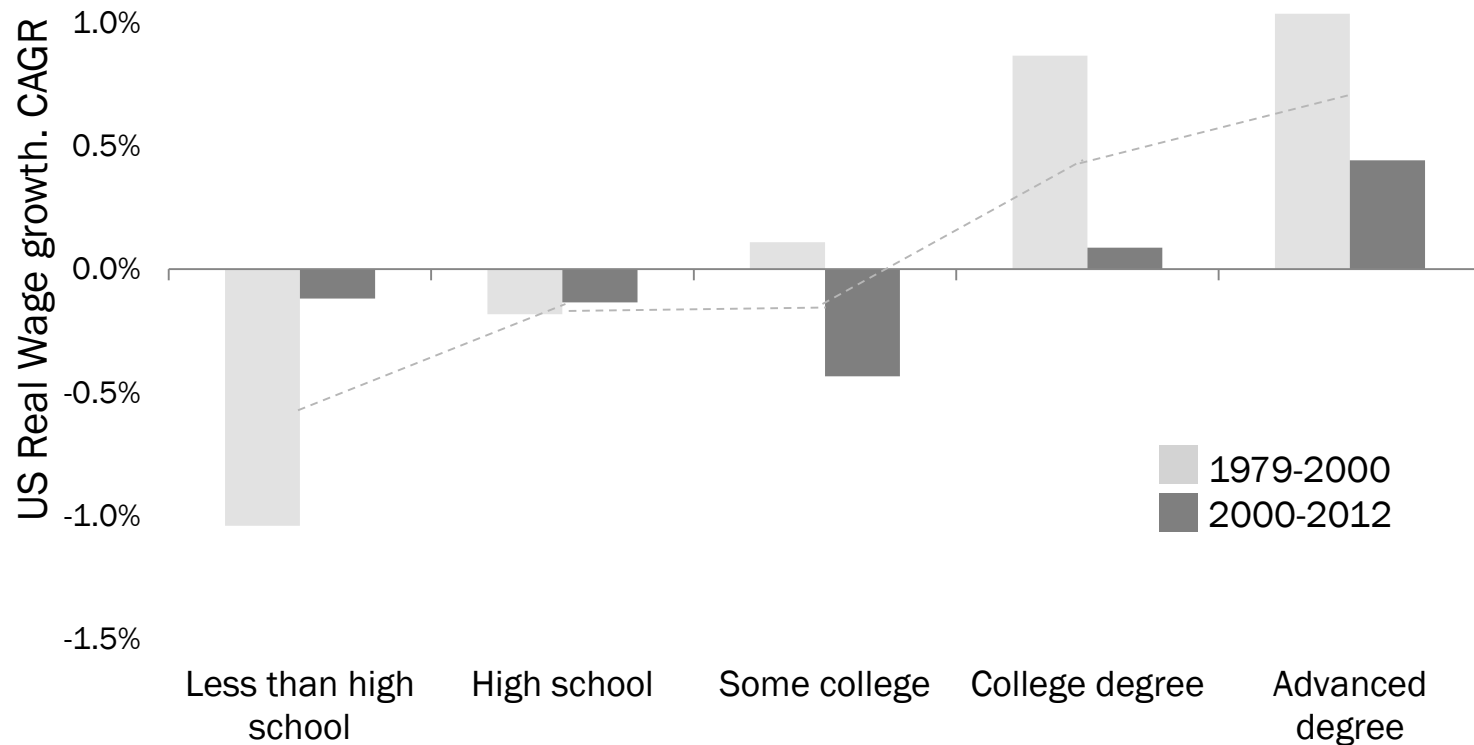
## Alaska's Workforce: Skills

Alaska's Rank among US States: 43

Rank 29

Rank 38

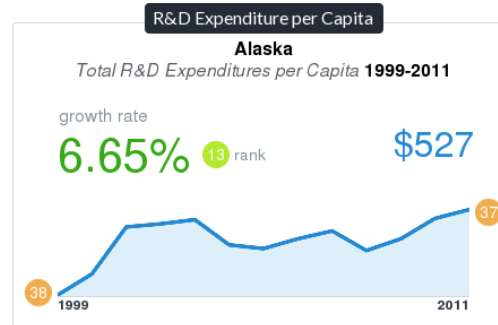
Rank 24



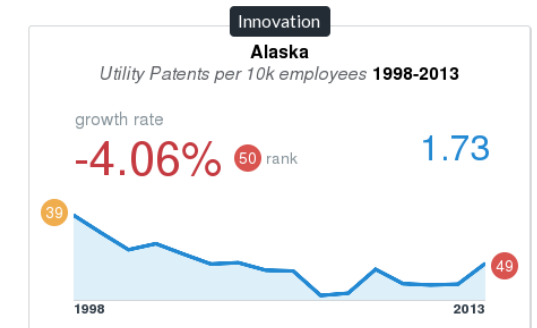
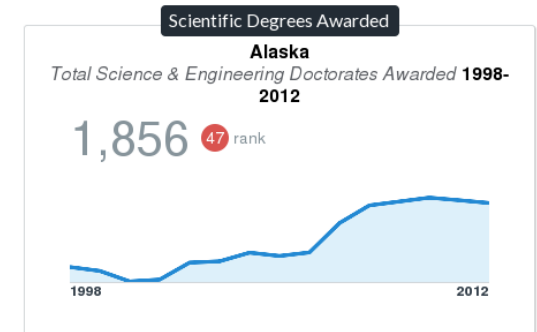
# Alaska's Innovation System



Attraction of  
Federal R&D Funding



Total R&D Spending



Science Degrees  
Patenting Intensity