



# Moving Up the Food Chain:

## Creating a Biotech Ecosystem

The Changing Face of the Pharmaceutical Industry  
November 6, 2009—County Cork

# County Cork and Illinois

- Homes to “second cities”
- History of reinventing themselves
- Need to move up the food chain



# Goal is to Create High Value Firms

- Individual prosperity depends predominantly on having high-quality jobs
- If there are few high quality jobs, there won't be sufficient tax revenue to fund state services, including education of our children



# High Value = “Innovation”

## Definition:

The marketing of new products and services based on new knowledge and the ability to apply that knowledge



# Why is Innovation Important?

- Economists estimate that for the last 50 years, half the US's growth in GDP/capita was attributable to scientific and engineering applications



# Cost of Stunted Innovation

- Dilemma: Illinois' diversification—by industry type—matches that of the US generally, 532,000 more people would be working in the state had Illinois grown at the national job growth rate since January 1990.
- Why? Illinois products tend to be lower value commodities and not innovative.

- Regional Economics Applications Laboratory



# Illinois: Many Strengths

## Positives:

- Until recently, and for decades, Illinois invested heavily in research infrastructure
- Illinois captured high-tech spinouts from firms like Abbott and Baxter
- Illinois leveraged location and quality of life advantages of Chicago to attract expansions and new facilities



# Illinois: Positives, cont'd

- Companies like ADM and Tate & Lyle are at the forefront of “greening” industrial products
- Fertile soils + proximity to DuPont and Monsanto make Illinois a leader in biotech crops
- University of Illinois a leader in agricultural research
- Innovative firms like John Deere now addressing new technology markets: harvesting of biomass for fuel and industrial ingredients



# Illinois: Strengths, cont'd

- Northwestern University & University of Illinois are leaders in nanotechnology
- Much of the state is proximate to one of two major urban centers—Chicago and St. Louis



# So What's the Problem?

- Illinois “has some clear weaknesses. Particularly noticeable is ...the dependence on established companies, rather than emerging companies, for its economic vitality... Illinois universities are in the top 10 states in all major fields with regard to research and development expenditures, with particular strength in math and computer science. This has not translated into entrepreneurial activity that is driving a revitalized economy

- National Center for Higher Education

Management Systems



# The Problem, Stated Bluntly:

My state does a sub-par job of  
creating, growing, and retaining  
startups



# Yesterday's Success = Today's Enemy

- “Success is a lousy teacher. It seduces smart people into thinking they can't lose.” (Bill Gates)



# Why Build a Technology Startup Community?

## Start-up Companies:

- Generate 60-80% of all new jobs in the U.S.
- Grow ~3x faster than the economy

## Venture Capital Investments in the US:

- Only 0.2% of GDP
- Responsible for 9.0% of private sector employment
- Generate revenue equating to 16.6% of GDP



# Why Build a Technology Startup Community?...cont'd

## Jobs Created Elsewhere in the Economy:

- Each high technology job creates 3.2 other jobs
- Each biotechnology job creates 4.7-6.4 other jobs



# Why Build a Technology Startup Community?...cont'd

## R & D Productivity:

- Small companies generate new solutions at a much faster rate than big company R&D
- Accounts for “big pharma” growing by acquisition rather than internal research



# Why Build a Technology Startup Community?...cont'd

## Success feeds success:

- Presence of many small companies makes recruiting people and other small firms easier
- Startup community growth allows providers of essential services to scale efforts



# Why Build a Technology Startup Community?...cont'd

## Easier way to engage big companies:

- Major firms typically don't relocate the startups they buy, knowing people don't want to move
- Result: big company presence in the community



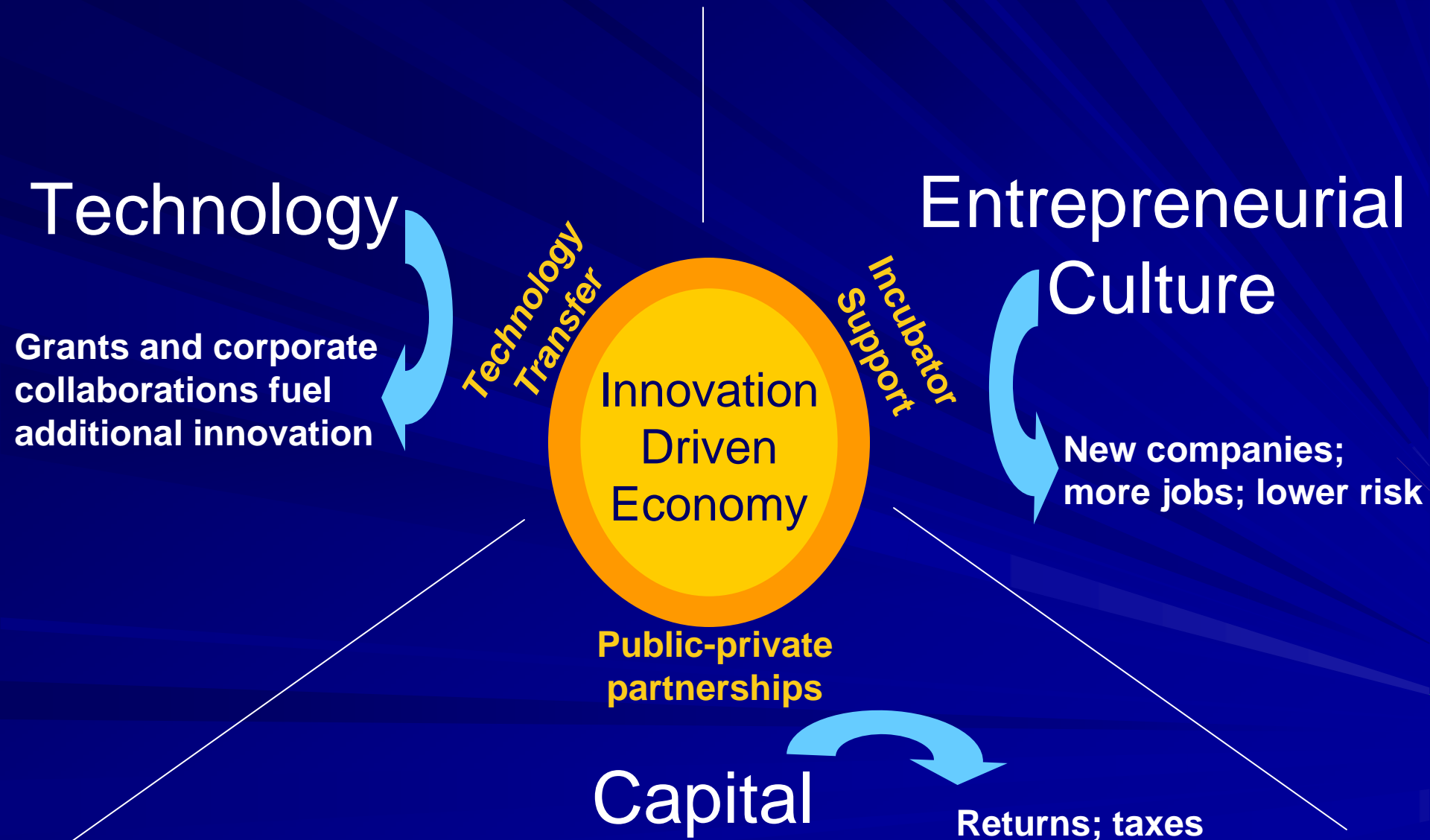
# Why Build a Technology Startup Community?...cont'd

## Provides a less risky, diversified economic development strategy:

- When a big company leaves:  $\pm 2500$  jobs gone overnight (ex: Pfizer consolidation)
- Big company expansions / relocations happen very seldom



# Building an Ecosystem for Startups



# Startup Havens: The *evolved*

- Two examples in US: the Bay Area in CA and Cambridge, MA
- Prowess in biotech grew out of folks w/success in the VC model for computers/communications
- Now have self-replenishing strata of successful entrepreneurs who “know the ropes”
  - Don’t need paychecks, can work for equity
  - A safer bet for VC’s



# Startup Havens: *Deliberately Engineered*

- U.S. examples: San Diego, Ohio, Wisconsin
- Idea is to replicate conditions in Boston and San Francisco by other means
- Typical: community sweat equity coupled with supportive government programs



# Incubator Support

## Incubator and Expansion Facilities

- Existing facilities and shared support services lower startup costs
- 6 years ago, was big problem for Illinois



# Orchestrating Sweat Equity



## A proven model

- Based on San Diego CONNECT <sup>(TM)</sup>
  - 40 years ago San Diego was “a tired Navy town, with a zoo”
  - Today: world famous generator of startups in biotech and IT/Communications



# Orchestrating Sweat Equity



- iBIO's goal: "PROPEL will be CONNECT on steroids"
- Launched in 6/07 – 50 companies helped so far



# Orchestrating Sweat Equity



- Huge amount of volunteer time from business people
  - Legal, intellectual property, financial advisory services, FDA and regulatory and broad-based consulting
  - Coaching from experienced entrepreneurs helping new CEOs
  - Assistance in securing angel, VC and non-dilutive funding
  - Informal learning opportunities for entrepreneurs



# Build It and They Will Help

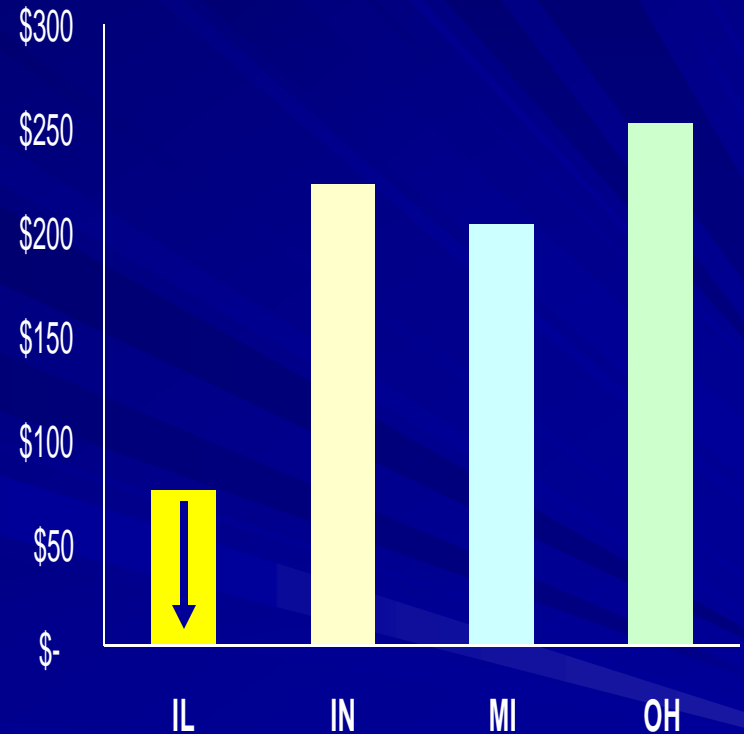
## PROPEL<sup>®</sup> has elicited teamwork

- Universities help sponsor training
- State government funded PROPEL expansion
  - Provides technical assistance from experienced MBA
  - Also supplies matching seed-level grants (max \$15K)



# Public-Private Partnerships

- Illinois lags other Midwest states- 4<sup>th</sup> in VC funding here
- Previously losing companies to the coasts, now losing to our neighbors
- Illinois must increase funding for public-private partnerships to achieve critical mass



State Programs Focused  
on Venture Capital

# The Bottom Line

*Unless the we develop an ecosystem to help startups*

We will steadily lose small technology firms and

- *Jobs*
- *Wealth*
- *Tax base*



# How to Grow the Ecosystem

- Leadership, support and involvement in all sectors
- Sweat equity programs like PROPEL®
- Public sector funding to fill the early stage capital gap
- Provide facilities for early stage companies
- Improve the effectiveness of technology transfer programs by providing private and public support



# iBIO's Working Hypothesis

- Being of high value = encouraging innovation
- Innovation requires growing and retaining startups
- Startups require an ecosystem of support
- Ecosystem development requires wholehearted collaboration of the key sectors
  - Private
  - Public
  - Research



# Many Thanks!

*Please come to Chicago  
May 3-6, 2010  
for the  
BIO International Convention!!*

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