

*IC<sup>2</sup> Institute Global Fellows Meeting*

**Global Perspectives on Technology Transfer  
& Commercialisation**

**Some experience from the United Kingdom**

*Bob Hodgson  
Zernike (UK) Limited*



Austin, Texas  
May 2009



## ***Structure and purpose***

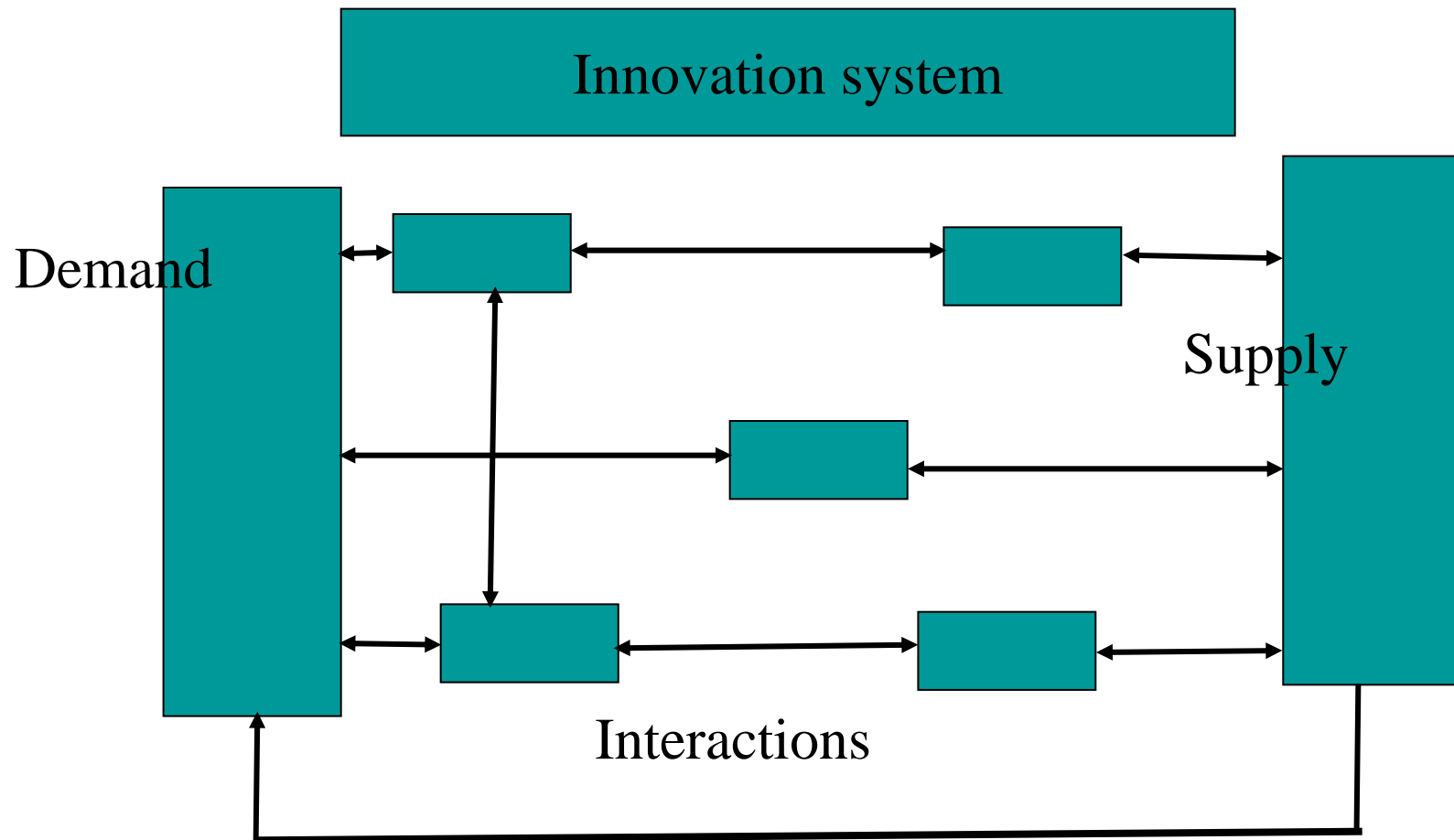
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### **Structure**

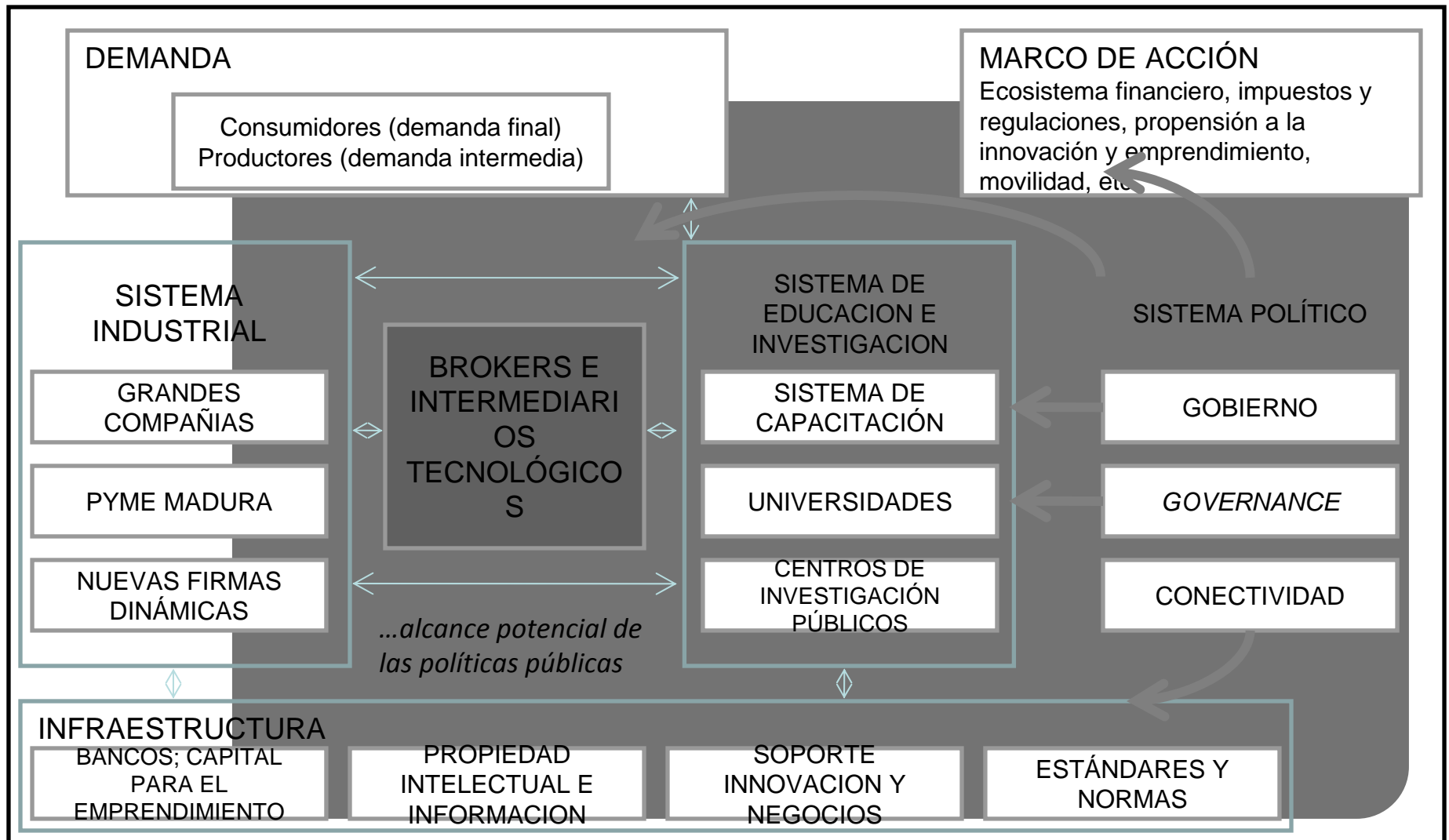
- Place topic in broad policy context
- With a focus on a university near where I live
- Draw some lessons for wider application
- Introduce some current issues



## Typical Systems Model of Innovation



# MODELO HEURÍSTICO DE UN SISTEMA NACIONAL DE INNOVACIÓN

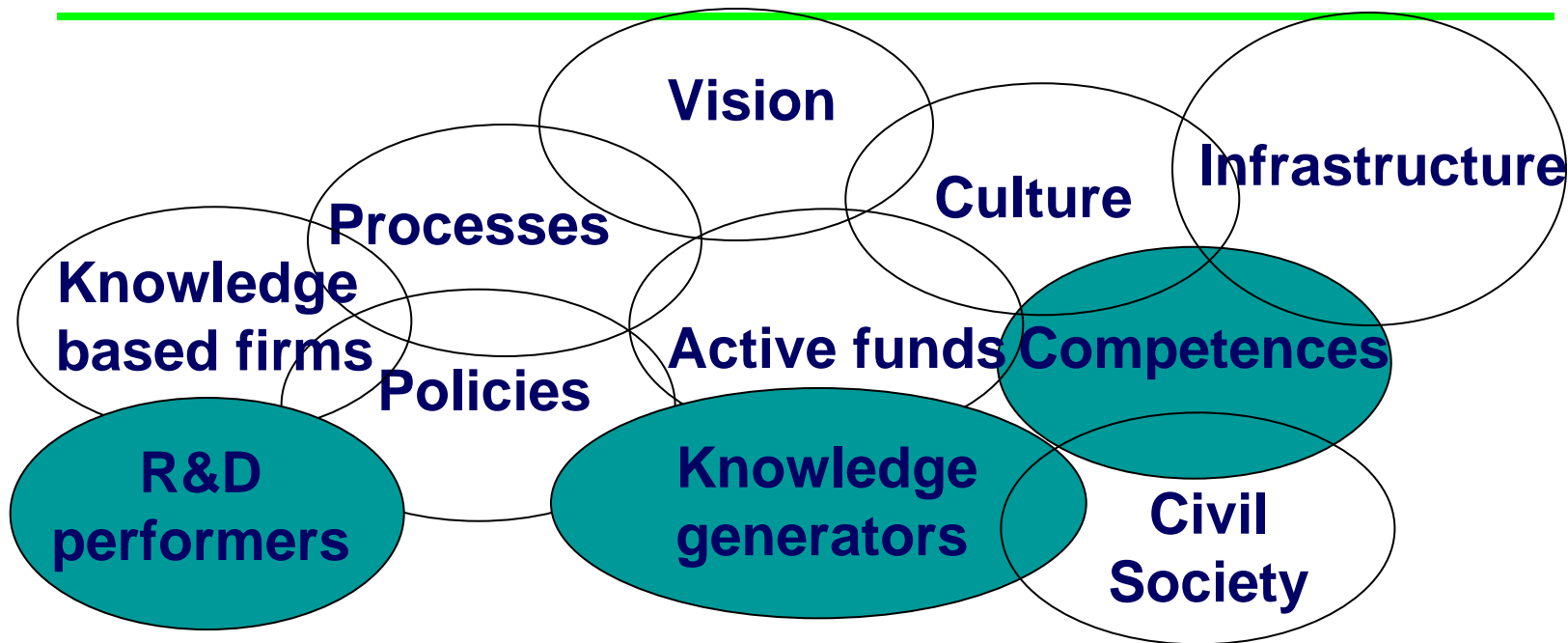


Source: Arnold and Kuhlman (2001).



## *Interaction between research and innovation!*

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**SHARING OVERLAPPING INTERACTING  
INTER-DEPENDENT MULTIDIRECTIONAL  
COMPOST HEAP**



## ***National policy environment***

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- Emphasis on entrepreneurship in education
- Third leg funding – elective and competitive



## ***HEIF Competitive elective funding, UK***

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### **Competitive funding for university innovations**

- White Rose Consortium
  - partnership of 3 universities
  - early stage funds
  - emphasis on biotech
  
- UNIEI
  - tackled the innovation agenda in university
  - built networks across the university
  - extended to other regional universities



## ***National policy environment***

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- Emphasis on entrepreneurship in education
- Third leg funding
- Research quality and concentration
- Regional diversity
- International orientation
- Weaknesses in application and mature industries



## ***Technology transfer: main strategies***

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### **➤ From the science base**

- Strategic partnership – joint research**
- IP licensing – managing an asset**
- NTBF creation – spin out entrepreneurship**
- Knowledge transfer – people connections**

### **➤ From other sources**

- International search**
- Inventors**
- Applied industrial development agencies**
- Extension services**



## ***University of Cambridge – Ivory Tower?***

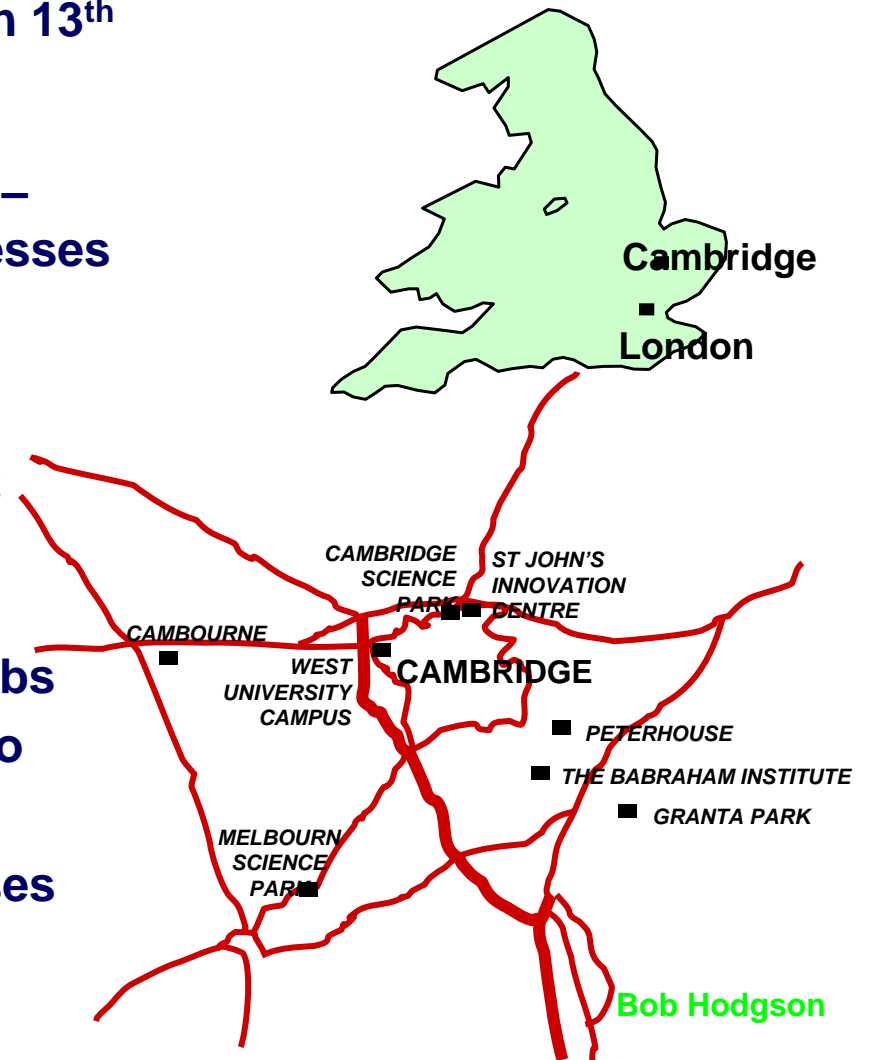


- A research based university
- Excellence in culture
- Business school
- Collegiate networks
- Successful and adaptive – yes
- Slim and agile – perhaps not!

## Example region – Cambridge, England



- Elite research University started in 13<sup>th</sup> century in town of 250,000
- Lots of engineering and sciences – including applied research businesses
- Alumni remain - 4700 PhDs
- Strong resistance to development
- Business
  - 1,300 firms, creating 35,000 jobs
  - high tech sectors – CAD to Bio
  - 80 start-ups per annum
  - businesses creating businesses
  - specialist service periphery



# Cambridge University roll call

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**Microsoft**



**Glaxo**



**Unilever**

**SmithKline  
Beecham**

**SEIKO**



**HITACHI**



**Aventis > Hoechst**

**Marconi**

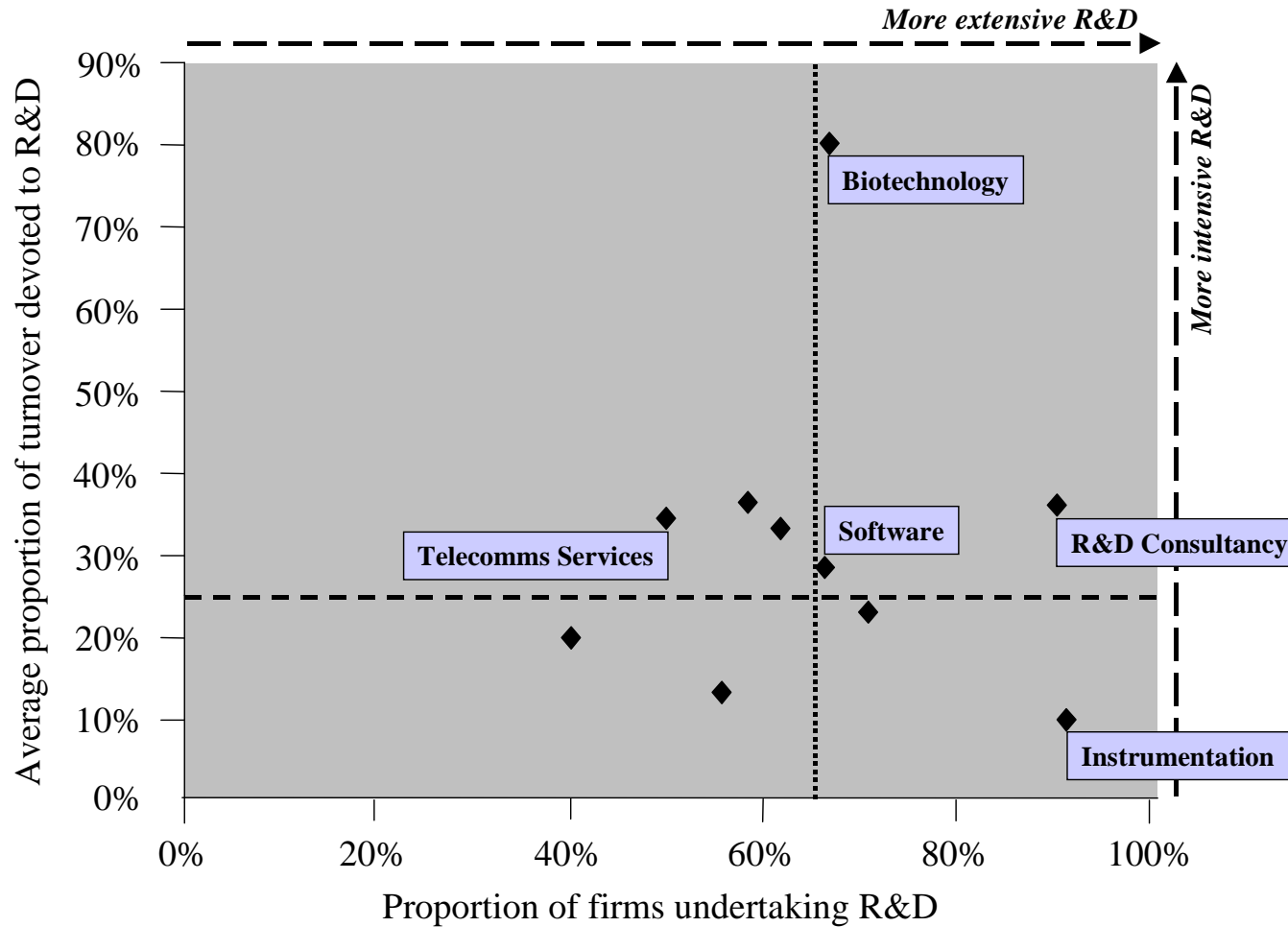


## ***IP rights and commercialisation***

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- Protecting the Right
  - laws and practice – essential but not sufficient
  - publish but protect – timing and management
  
- Whose is it anyway?
  - legal default – owned by employer
  - practical reality – shared in academia and with investor
  
- Creating the Wealth
  - accidents and scale – active commercial management essential
  - licence or new business – different demands

# Differential research intensity





## ***Key lesson***

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### **WHAT MAKES THE DIFFERENCE?**

#### **Four crucial ingredients**

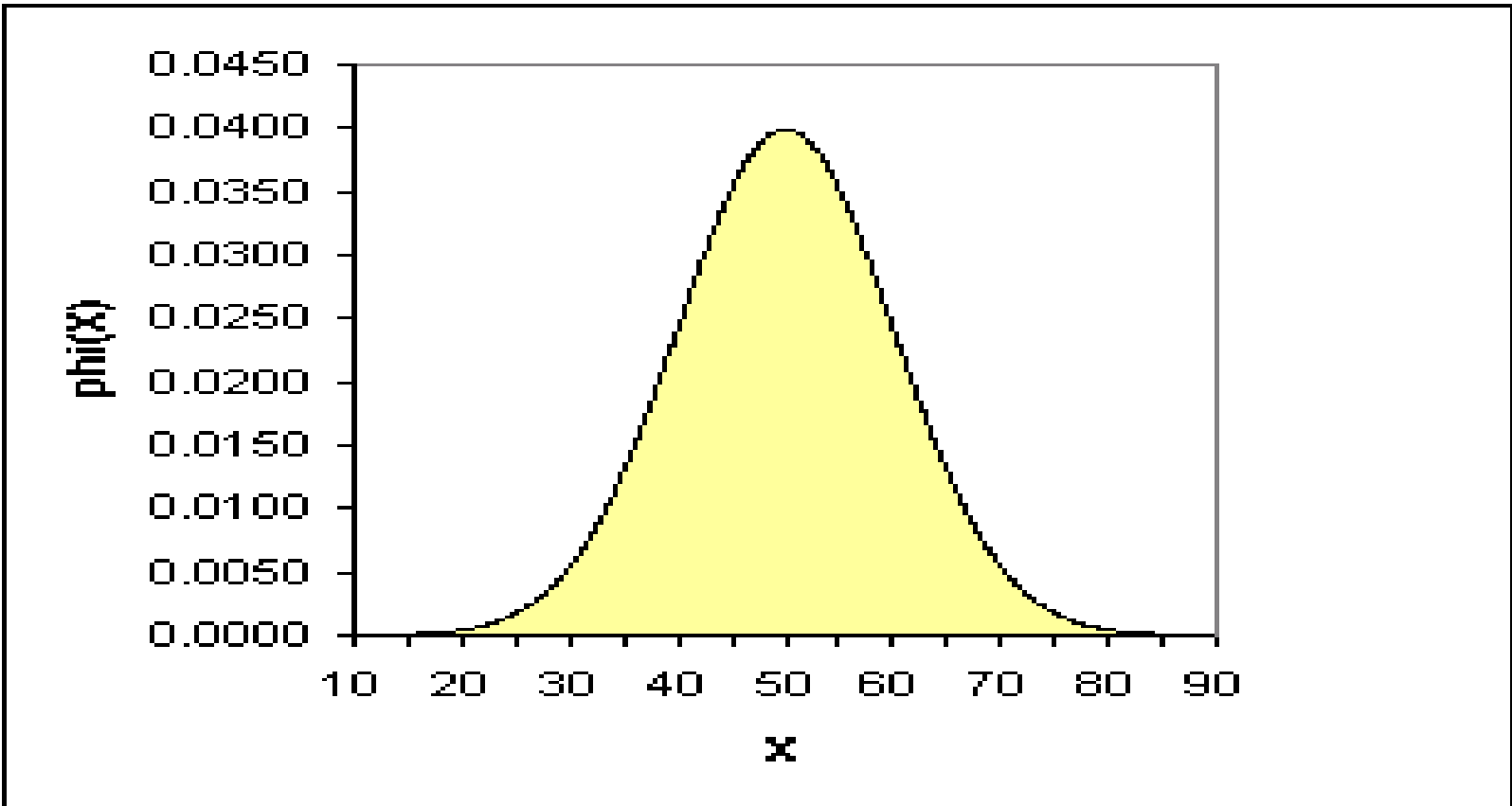
- **Vision** - having a clear shared vision of future
- **Language** - being able to talk to each other
- **Incentive** - funding to lubricate and rewards
- **History** - no substitute for doing it



## ***Managing the culture change***

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- Academics are normal – but need managing
  - Respecting the outliers and moving the mean
  
- Providing the environment
  - My door is open – why don't they come?
  - Formal protocol
  - Ferrets and guerrillas
  - Research team leadership
    - built into core purpose
    - linked to reward and status
    - sustained into future programmes





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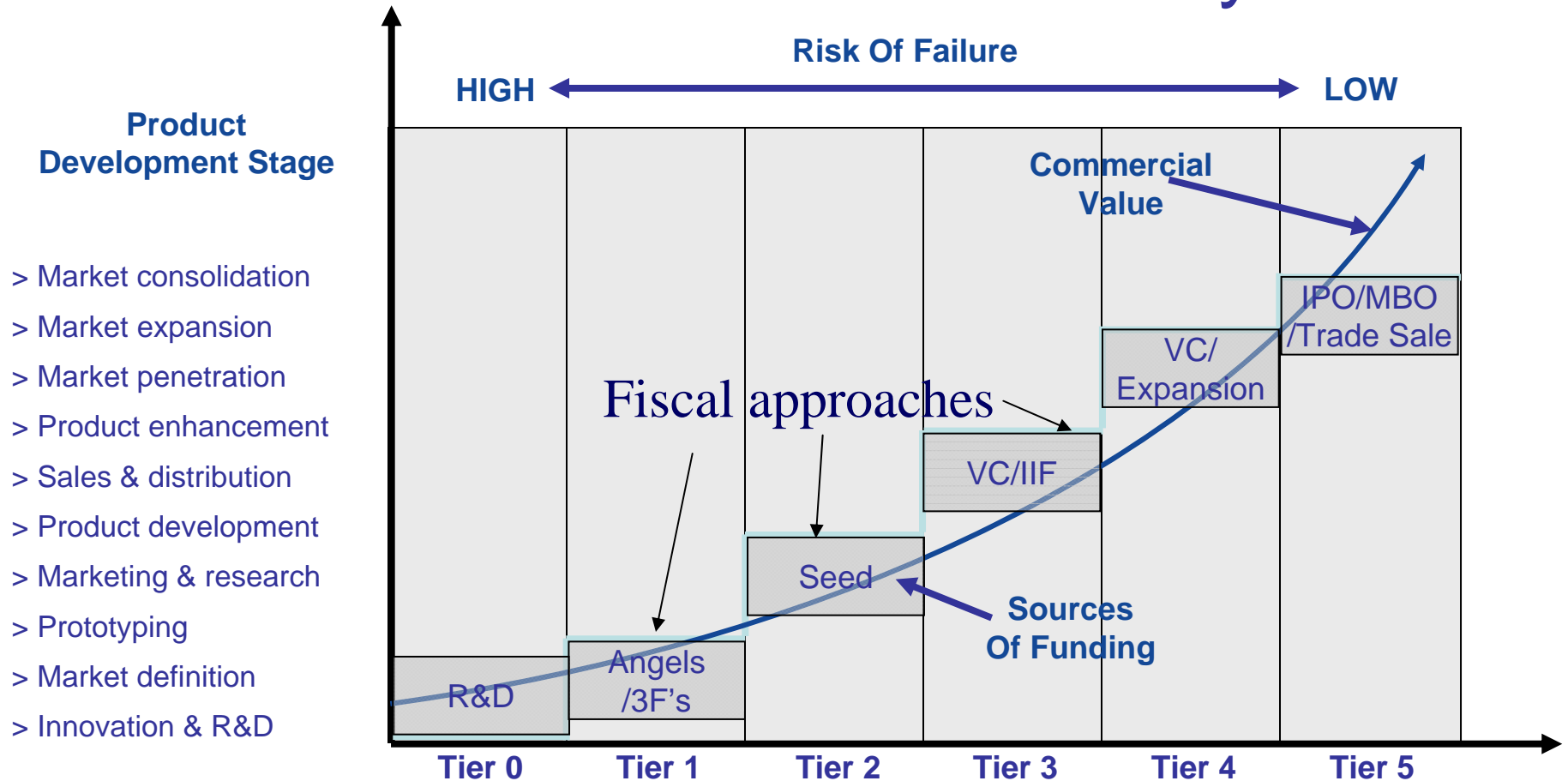
## Critical success factors



Cultural differences matter

Require understanding  
patience, persistence  
and  
long term effort to modify

# The Commercialisation Cycle



## Business Development Tiers

### Tiers 0/1 - Pre-incubation

- Direction
- Collaboration
- Guidance
- Resources etc
- Pre-Seed funding

### Tier 2 - Incubation

- Mentoring
- Seed funding
- Contacts
- Consulting
- Clients

### Tier 3 - Post-incubation

- Funding
- Structuring
- Relationships etc

### Tiers 4/5 - Commercial Maturity

## ***Challenges: filling the gap***

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### **Challenge of venture funding for new tech businesses**

- Information asymmetries and gaps
- Additional commercial risks
- Additional technology risks
- Proportionately higher transaction costs

## ***Challenges in commercialisation: hypothesis 1***

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We have great S&T and ideas for new businesses

BUT

There is no money to take them forward

SO

Lets build a venture capital industry

## ***Challenges in commercialisation: hypothesis 2***

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We have lots of money which is prepared to invest in  
new businesses

BUT

There are not enough good ideas coming forward from  
the knowledge base

SO

Lets change the orientation of the science base

## ***Challenges in commercialisation: hypothesis 3***

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We have great S&T and lots of investment money

BUT

The two communities have opposite perspectives and  
cannot talk to each other

SO

Lets build a shared vision and learn a common  
language

## Critical success factors

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Keep communicating  
Even when they seem not to listen

## ***Some initiatives needing guidance***

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### **Returning to the three hypotheses**

- Chile – build research base and skills in commercialisation
- Argentina – building legitimacy and the deal flow facility
- Turkey – ensuring the wetware alongside the incentives
- UK – challenging satisfaction and building connectivity

# Critical success factors



being super can be the problem  
and the solution



***Thank You***

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**BOB HODGSON  
ZERNIKE (UK) Ltd  
The Grove  
High Street  
Sawston  
Cambridge  
UK  
CB2 4HJ**

**0(044)1223 526980**

**bhodgson@zernikeuk.com**