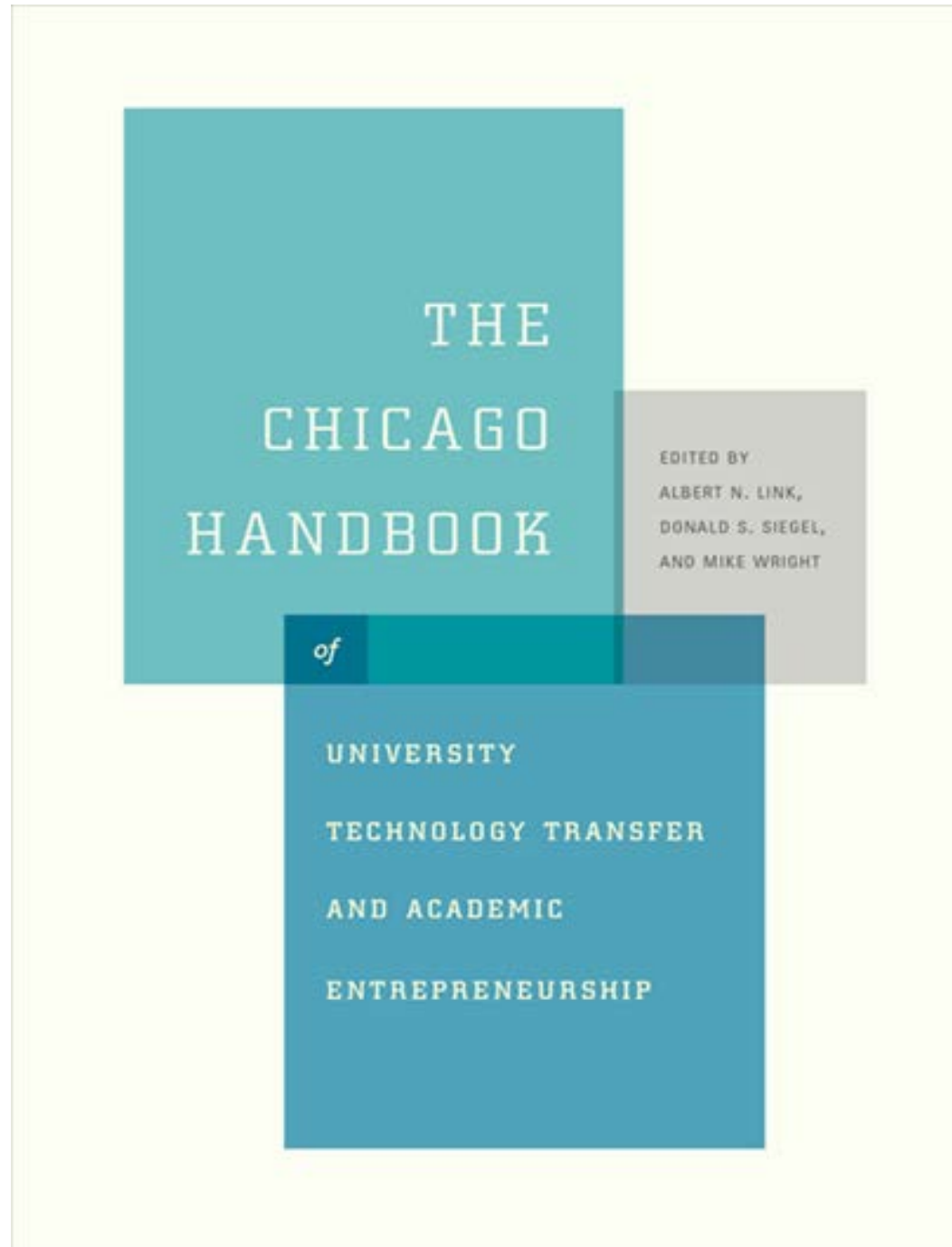
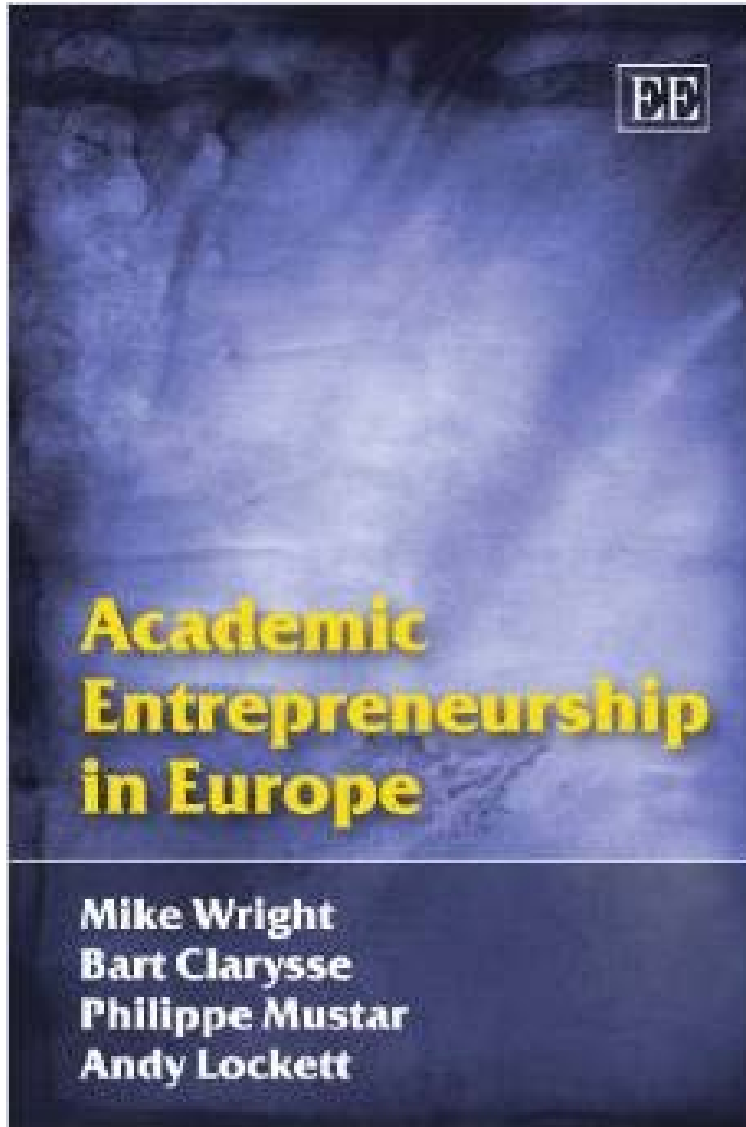


Academic Entrepreneurship in the Coming Decade: *Value Creation Opportunities of the Emerging Landscape*

Mike Wright



Presentation, Porto, October 2015



Academic Entrepreneurship & TTO Successes....

The logo for Proximagen features the word "PROXIMAGEN" in a blue, sans-serif font. The letter "X" is stylized with a blue figure of a person jumping or running above it.


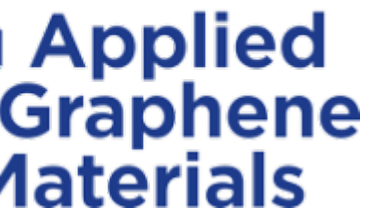
The logo for Genentech consists of the word "Genentech" in a blue, sans-serif font.

The logo for Circassia features a blue geometric pattern of interconnected diamonds or squares, resembling a lattice or crystal structure.
The word "Circassia" is written in a blue, sans-serif font to the right of the geometric pattern.



The word "Renovo" is written in a pink, sans-serif font below the logo symbol.

The logo for Zyoxel features the word "ZYOXEL" in a bold, blue, sans-serif font. To the right of the text is a cluster of blue dots of varying sizes, arranged in a roughly rectangular shape.
The tagline "HUMAN TISSUE TESTING TECHNOLOGIES" is written in a smaller, blue, sans-serif font below the main text.

The logo for Applied Graphene Materials features a blue geometric pattern of interconnected hexagons, resembling a graphene lattice.
The words "Applied Graphene Materials" are written in a blue, sans-serif font to the right of the hexagonal pattern.

The logo for Plastic Logic features the words "PLASTIC LOGIC" in a blue, sans-serif font, with a horizontal line above the text.

The logo for FlexEnable features a stylized orange and yellow graphic resembling a flame or a fan of curved lines.
The word "FlexEnable" is written in a bold, sans-serif font, with "Flex" in blue and "Enable" in orange. Below it, the tagline "Truly flexible electronics" is written in a smaller, blue, sans-serif font.

.....But.....

- **University environment is changing.**
- **Expectations & dimensions of impact of universities widening**
- **New forms of academic entrepreneurship emerging**



“There is nothing so stable as change”.

Bob Dylan

.....Implications

- How can Universities, TTOs, government & corporations enhance what they do to meet these challenges?
- Juncture to assess emerging academic entrepreneurship landscape



Objectives

- **Where we are**
- **Emerging Landscape**
 - Why
 - What
 - Who
 - How
- **The Coming Decade?**

Where we are

Theme	Traditional Perspective
Why	Generate direct financial returns
What	Academic Spin-offs; licensing; patents; consultancy
Who	Academic faculty and post docs
How	TTOs; science parks

Where we are

- **Spin-offs, Licensing, consulting, collaboration with industry by faculty:**
 - Highly skewed licensing revenue
 - Few spin-offs grow or achieve significant exits
- **Challenges in:**
 - Raising venture capital backing
 - Expertise of TTOs

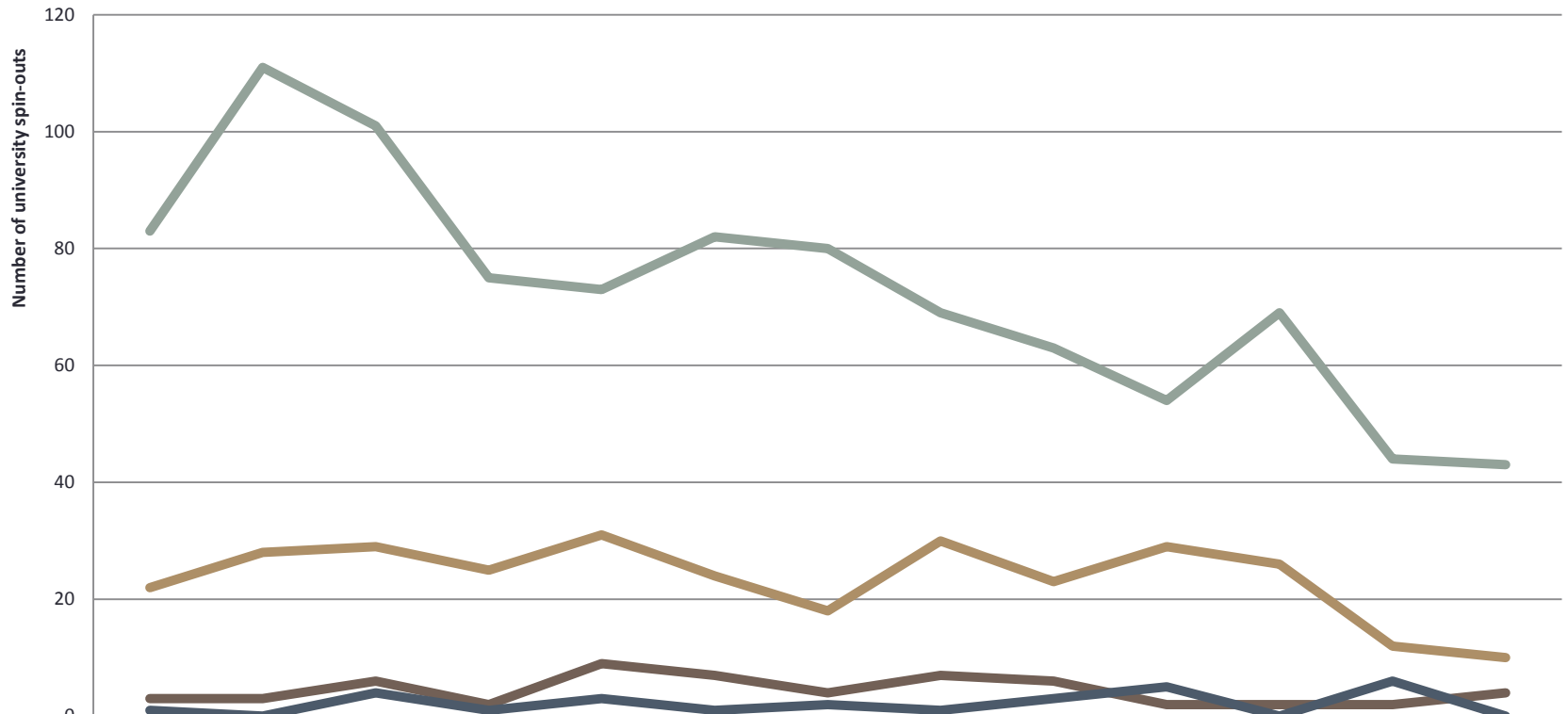
Where we are

- **Impact differs between top echelon and ‘mid-range’ universities**
 - **Mid-range:**
 - most important activities research and knowledge transfer through consulting, research contracts and research collaboration (Guerrero, Cunningham and Urbano, 2015)
 - **Top echelon:**
 - entrepreneurial spin-off activities have greatest economic impact.

Top universities reducing number of spin-offs

Focus on quality not quantity

Licensing as alternative



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
top25%	83	111	101	75	73	82	80	69	63	54	69	44	43
top25-50%	22	28	29	25	31	24	18	30	23	29	26	12	10
bottom 50-25%	3	3	6	2	9	7	4	7	6	2	2	2	4
bottom 25%	1	0	4	1	3	1	2	1	3	5	0	6	0

Where we are

- **Competitive pressure and benchmarking**
- **Increasing pressure to generate funds from private donors**
 - Alumni funding interest
 - Especially for student entrepreneurs
 - Including commercialization funds [Columbia, UCB, UCSD, Maryland, etc.]

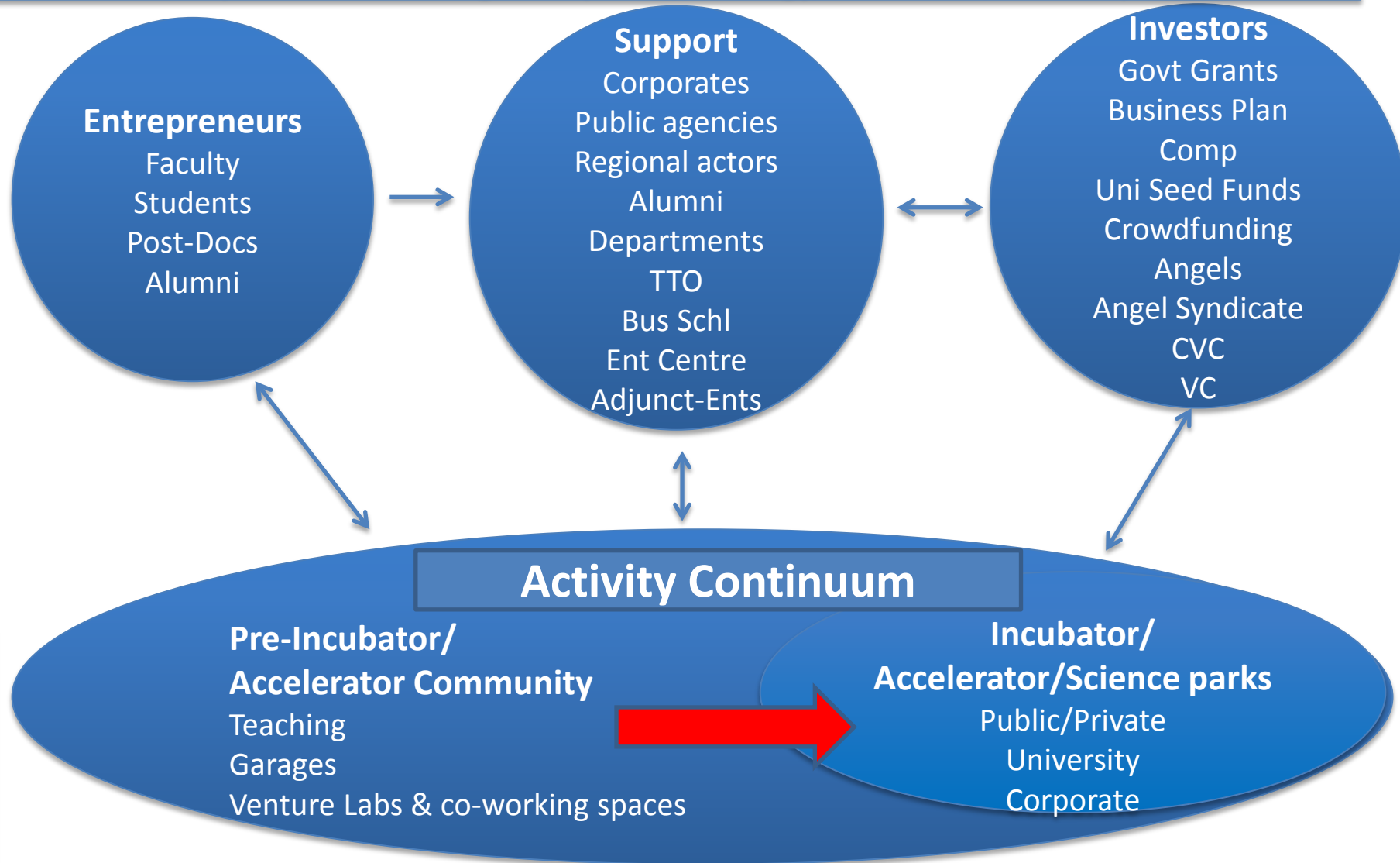
Where we are

- **Traditional Focus: *research- third mission commercialization nexus***
 - But extending beyond formal to add informal IP
 - Vast increase in internal & external stakeholders and role of TTO as facilitator
- **Changing emphasis:**
 - Emergence of *teaching/education- third mission nexus informed by research*
 - Evolve new model embracing greater variety of academic entrepreneurship and stakeholders

Complex Emerging Landscape

University Scope

(Research Ranking, Disciplines; Strategy, Resources; Courses)



Emerging Landscape - Why

- ***Stakeholders demanding wider social and economic benefits, resulting in:***
- **Strategic approach**
 - Contingent on research base of university
- **Multiple modes of commercialization and resourcing decisions**
 - ***Direct***
 - Spin-offs, licensing, consulting, etc.
 - ***Indirect***
 - Incubators/accelerators
 - Entrepreneurship programmes

Emerging Landscape - Why

- ***Stakeholders demanding wider social and economic benefits, resulting in:***

Variety of emphasis

- between departments
- between international and local universities in a region
- Between regional support policies
- **Collaboration between universities**
 - Complementarities
 - Critical mass



UNIVERSITY OF
BIRMINGHAM



The University of
Nottingham

UNITED KINGDOM • CHINA • MALAYSIA

Emerging Landscape - Why

- ***Stakeholders demanding wider social and economic benefits, resulting in:***
- **(Re)formulating IP and patent strategies**
 - Ownership and private vs social benefits
 - Academic ownership without support creates challenges
 - Open source
- **Multiple measures of evaluation**
 - Direct
 - indirect



open source

Emerging Landscape - What

- **Direct *AND* indirect academic entrepreneurship**

- Alumni start-ups and spin-offs
- Increased diversity of start-ups
- Greater integration of technology & knowledge transfer into curriculum
- Spin-offs from subsequent employers by graduates perform better than direct spin-offs



- **Formal *AND* informal IP**

- Commercial and social ventures



Emerging Landscape - What

- **Example:**



- Johns Hopkins University
- Carey Business School requires MBA students to take a Discovery to Market course.
- Involves partnership with the Hopkins Tech Transfer Office to conduct a market analysis and commercialization plan for a university-based innovation

Emerging Landscape - What



- **Example:**

- **Imperial College CreateLab**

- Innovation community and pre-accelerator involving collaboration between Imperial College students, faculty and the UK's leading technology investors Imperial Innovations.
- Last 2 years over 3000 students involved
- Student teams raised over £2.8m in funding.

Emerging Landscape - Who

- **Academics**

- Appropriate incentives
- Explicit recognition in promotion, tenure, remuneration & rewards
 - 16 US universities
- Included in UK Research Excellence Framework



- **TTO Personnel**

- Backgrounds
 - Legal
 - Entrepreneurship

Emerging Landscape - Who

- ***New multiple agency issues to address***
- **TTO**
 - Interests of academics vs universities
- **Academics**
 - Universities, VCs and corporations
- **Student entrepreneurs**
 - Universities, academics
- **Universities and Society**
 - Profits versus wider societal benefits
 - Socially responsible licensing programmes
 - [e.g., UC Berkeley]



Emerging Landscape - How

- **Variety of entrepreneurial ecosystem**

- Industrial locality
- Nature of university

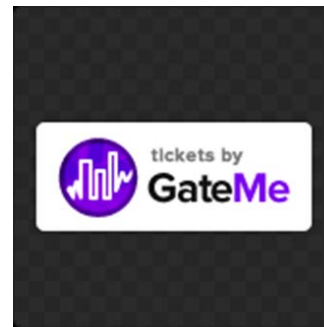
- **New players**

- ***Accelerators***

- Depth of university links varies across cities
- Entrepreneurial route for students
- Need for greater integration

- **Imperial Launch Pad**

- Event to connect student entrepreneurs with accelerators and incubators



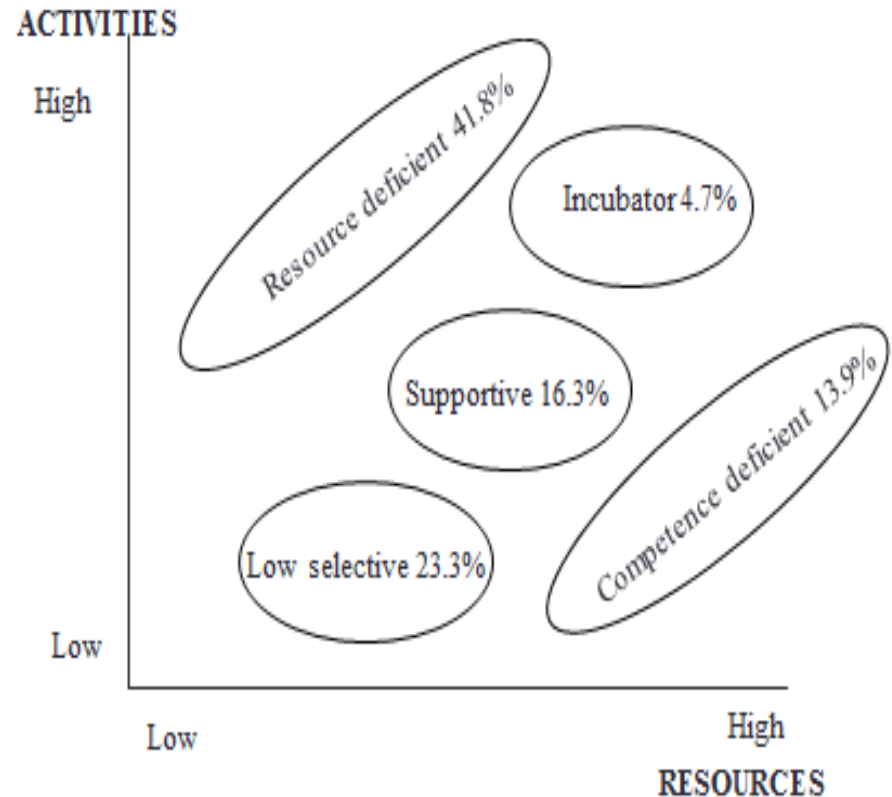
Emerging Landscape - How

- **University governance**



- Enhance university boards/councils with skills to develop and oversee academic entrepreneurship strategies & resources needed
- Better match between strategies, activities and resources

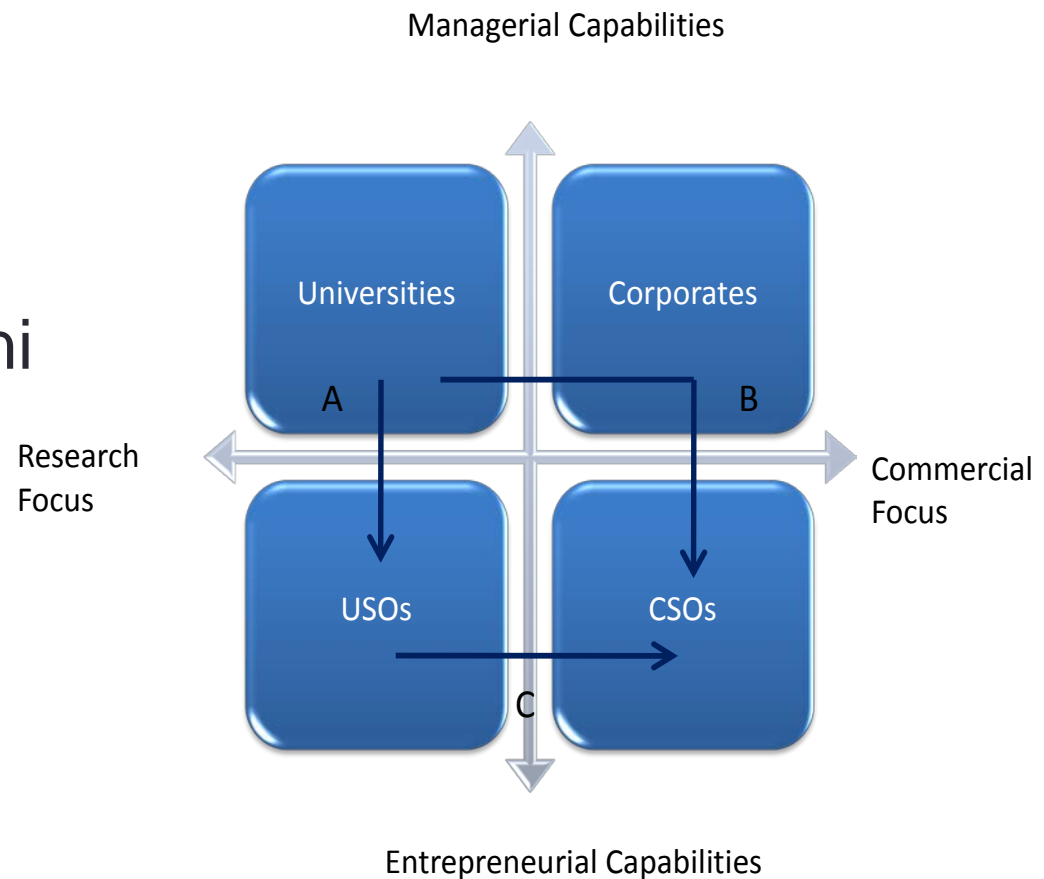
Mismatched Support Models



Emerging Landscape - How

- **Academic mobility**

- Hiring strategies to attract academic entrepreneurs
- Retention of entrepreneurial alumni in region
- Support to increase conversion rate for docs and post-docs wanting to become entrepreneurs



Academic Entrepreneurship: Summary Emerging Landscape

Theme	Emerging Landscape
Why	Provide wider economic <i>PLUS</i> social benefit to the university ecosystem
What	Traditional TTO activities <i>PLUS</i> : Student and Alumni start-ups; Entrepreneurially-equipped students; Job creation in the local region or state
Who	Academics <i>PLUS</i> Students; Alumni; on-campus industry collaborations; surrogate entrepreneurs
How	Traditional TTOs <i>PLUS</i> Accelerators; Entrepreneurship garages; student business plan competitions; collaborative networks with industry and alumni; employee mobility; public-private ‘incubators’

The Coming Decade

- **Different support models in individual universities**
 - research strength & approach to academic entrepreneurship of a particular university.
- **Reaching-out**
 - To embrace *additional* approaches to academic entrepreneurship involving informal IP, students and alumni
 - To connect with bottom-up initiatives by departments and involving curricular developments
 - Entrepreneurial impact becomes a key dimension of academics' performance

The Coming Decade

- **Creation of an integrated support continuum**
 - From pre-incubator/accelerator activities through to more traditional incubator/accelerator activities broadened out to incorporate both formal and informal IP.
- **Opportunities not a threat**
 - TTOs to play important coordinating role
 - Need for adaptation & development of critical mass
 - A multitude of commercialization routes either through the TTO or alongside the TTO is the future

Thank You!

Questions?



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