



# Spinning-out Enterprises from Universities: Opportunities and Challenges

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Presentation at EXIST Conference, Berlin, 30<sup>th</sup> September, 2008



## The Policy Context

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- Policymakers have seen spin-outs as potential opportunities for future growth
- Universities see spin-outs as important potential opportunities for revenues
- Various initiatives to provide financial support and create incubators to coach start-ups
- Growth in spin-out numbers



## University spin-outs internationally *Too many or too few opportunities?*

Country	Period	No. Spinouts
US	1980-2003	4543
Canada	1962-2003	1100
France	1984-2005	1230
Netherlands	1980-1990s	300
Australia	1984-1999	97
UK	1981-2003	1650
Belgium	1980-2005	320
Sweden	Up to 1990s	3-5000
Germany	1997-9; 2001	470-4000 p.a.; 900-8000



## ...In reality converting opportunities problematical

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- Spin-outs generally do not grow (5-7 employees, on average, after 7 years)
- Face challenges in creating significant third stream of financing
- Few make it to trade sale, even fewer to IPO
- Other alternative opportunities

# Academic Entrepreneurship – Example of the UK

	1997-00	2001	2002	2003	2004	2005	2006
Spin-outs	380	248	213	197	161	148	187
Patents	n.a.	250	198	377	463	711	576
Licensing agreement	n.a.	728	615	758	2,256	2,099	2,699
IPOs of Spin-outs	n.a.	n.a.	1	1	10	10	4
IPO Value (£m)	n.a.	n.a.	n.a.	214	604	204	246



# 10 Challenges.....

## How To Meet Them?

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- Based on our studies across Europe:
  - Supporting heterogeneity of Spin-outs
  - Establishing suitable incubator arrangements
  - Progressing spin-outs through development phases
  - Developing spin-out legitimacy in market
  - Forming teams of entrepreneurs
  - Developing university strategies
  - Developing incubators and TTOs
  - Remuneration and incentives
  - Funding availability
  - Developing innovation policy instruments



# Challenge 1: Supporting Heterogeneity of Spinouts (1)

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- Spin-outs not homogeneous
  - 10% clear *exit* strategy
  - 20% *profit* strategy
  - 70% *prospectors*, looking for a business model
- Spin-outs which pursue an exit strategy should:
  - Have Unique Technology Platform
  - Spin-off from a Leading Research Department with sufficient critical mass
  - Be able to attract Venture Capital within 18 months after start-up
  - Be able to attract a high level manager from industry
  - Outcome
    - 60% fail (technological reasons, mismanagement)
    - 34% successful (multiple of different investment rounds > 2); tradesale (usually 9-11 years after start-up);
    - 6% become sustainable growth companies.



# Challenge 1: Supporting Heterogeneity of Spinouts (2)

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- Spin-outs which pursue a profit strategy:
  - Start without external capital
  - Have a bootstrapping strategy in terms of expenses
  - Target a specific niche opportunity with a clear market need
  - Might change to exit strategy after having become a sustainable business
  
- Spin-outs which are prospectors:
  - Need public funding rather than VC money during preseed period
  - Face need to choose an application and related business plan asap
  - At risk of being ‘living dead’: Need mechanism to terminate



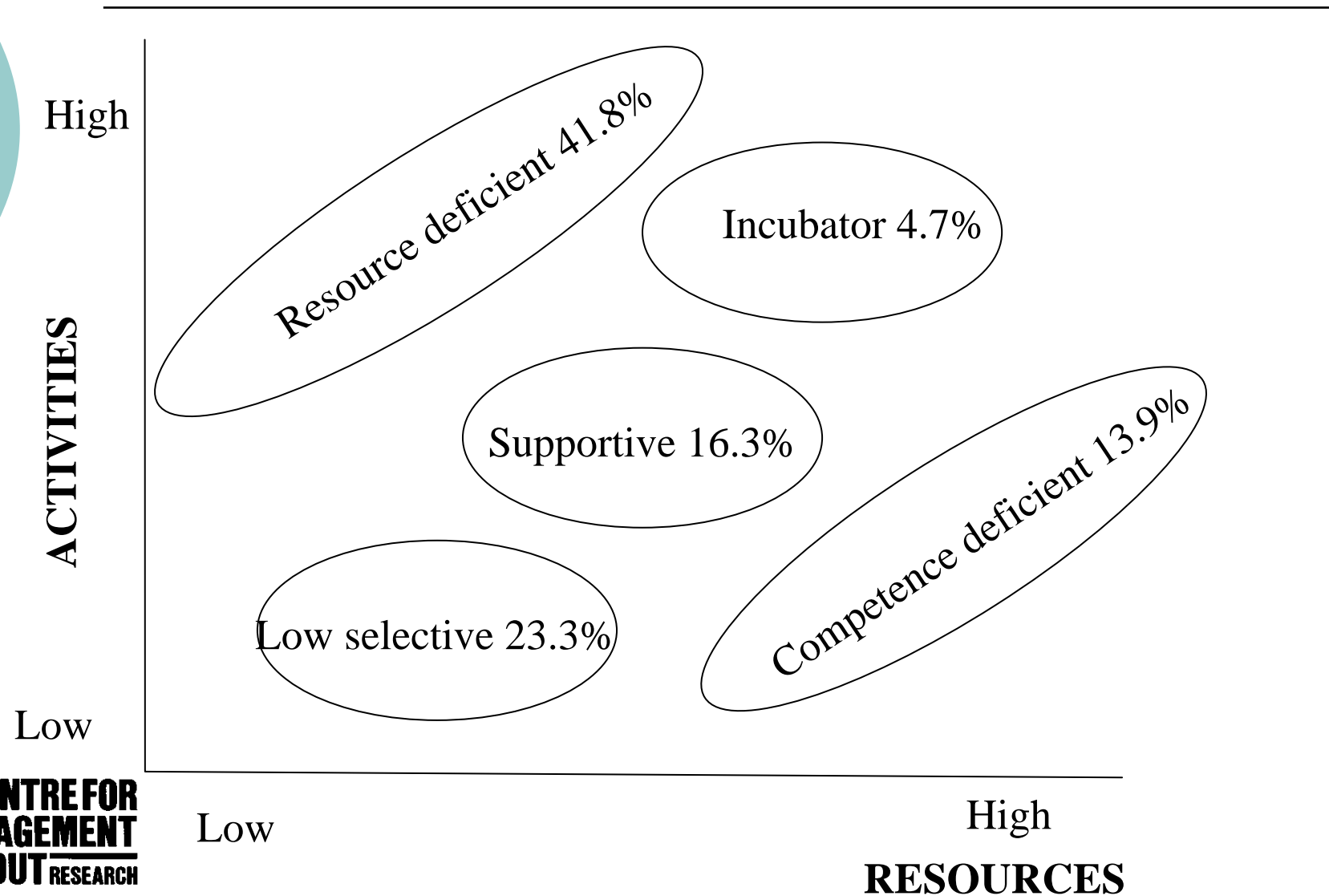
# Challenge 2: Establishing Suitable Incubator Arrangements

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- **Incubator organisation has direct impact on kind of spin-outs created.**
- Three models of support:
  - **1. Low selective Model (e.g. U. Twente)**
    - Stimulation of Entrepreneurial Initiatives among Researchers and Students
    - Based on Autonomy and Low cost incubation facilities
    - No direct IP transfer
    - Returns to University = contract research and PR
  - **2. Incubation Model (e.g. IMEC)**
    - Focus only on spin-outs with an exit strategy
    - Returns through equity participation including formal IP transfer
    - Highly selective model including long incubation before spin-off decision is made
    - Spin-offs as alternative to licensing and contract research
  - **3. Supportive Model (e.g. KULeuven)**
    - Prospector type Spin-outs (no clear business model)
    - Incubation in the market place through spin-off with university related seed funds
    - Focus on business plan support and pre-start up assistance
    - IP transfer and formal contracts = key

# Various Support Models for Spin-Outs

*Based on Interviews in 50 Universities in 7 European Countries*



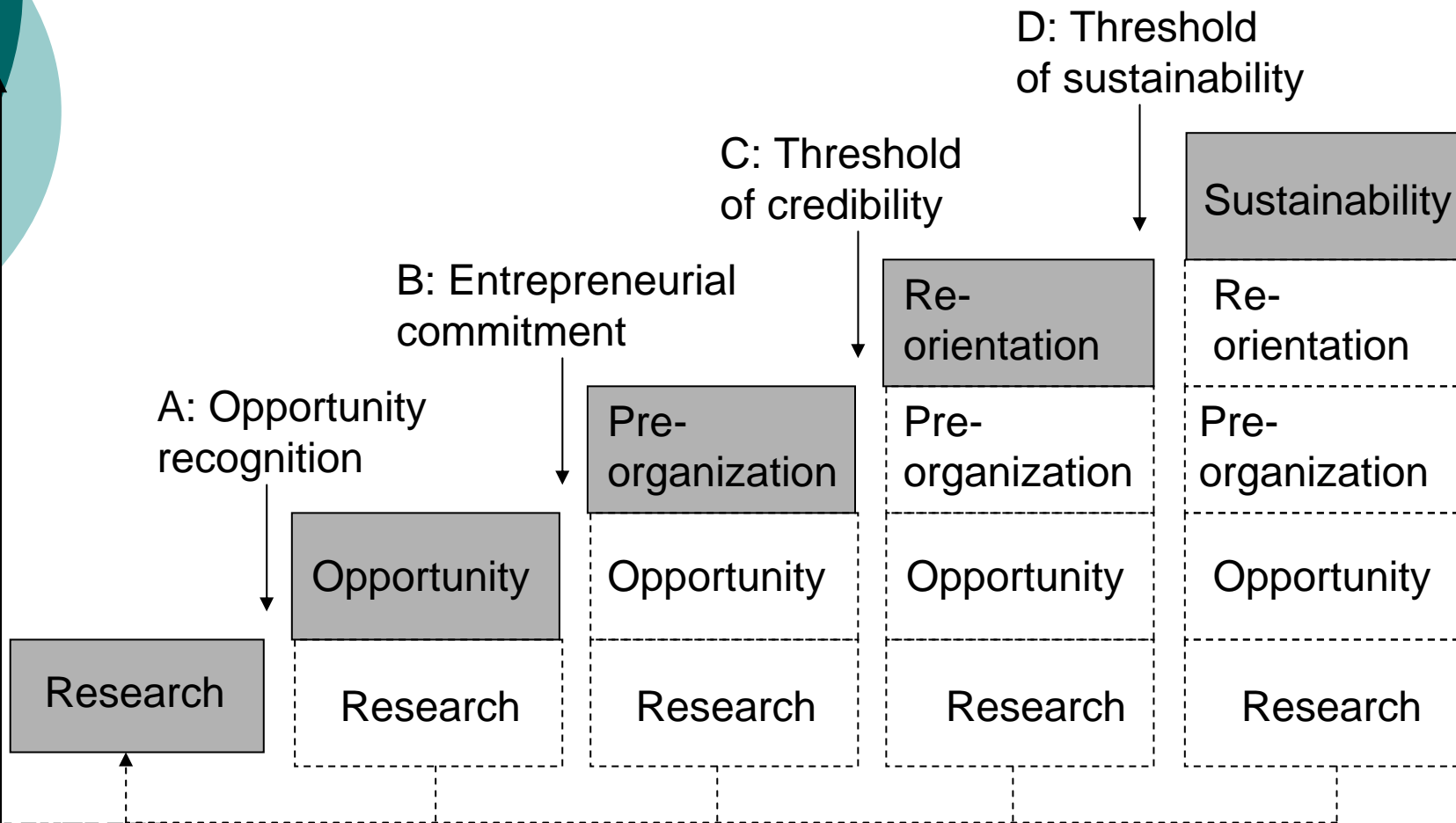


## Challenge 3: Progressing Spin-outs through Development Phases

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- Process of spin-out development is iterative over phases of venture's growth.
- Support should take into account the different **critical junctures** which spin-outs have to overcome to become sustainable companies
- Four different phases, delineated by clear thresholds which the spin-out should overcome

# Spinout Development Process





## Challenge 4: Developing Spin-out Legitimacy in Market (1)

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- How do spin-outs develop legitimacy in the market?
- New firms suffer from liability of newness/ “uncertainty”
- New firms need to adopt strategies that send signals to increase legitimacy and reduce uncertainty, i.e. to create market acceptance
- “One-size-fits-all” strategy inappropriate



## Challenge 4: Developing Spin-out Legitimacy in Market (2)

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- Market and Technology uncertainty requires different strategies -> different legitimacy building
  - Product strategy: no active legitimacy building
    - ⇒ Avoid detection and reaction from incumbents
  - Technology strategy: focus on technology legitimacy building
    - ⇒ Reduce technological uncertainty & convince scientific community
  - Co-optive [both] strategy: focus on scientific & commercial community



## Challenge 5: Forming Teams of Entrepreneurs

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- Spin-out teams lack commercial experience
- Commercial Team Experience is best Indicator of Growth within 7 years after start-up
- Challenge: how do academics meet business-oriented people?
  - Successful teams consist of members with strong instrumental and non-instrumental ties
  - Result : successful teams are formed by people who have joint experience *before* the business opportunity is spotted
- Some are habitual academic entrepreneurs with own networks, others are nascent and need different support



# Challenge 6: Developing University Strategies

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- University strategies
  - Need to adopt a strategic approach to knowledge transfer. Choices concerning:
    - institutional goals and priorities,
    - resource allocation,
    - technological emphasis,
    - patent strategies
    - modes of technology transfer
    - identify why and which type of spin-outs to support
- IP and patent strategies
  - TTOs need to ensure that IP is clean, well-defined and protected before trying to raise commercial interests. = Costs of recruiting sufficient expertise or paying for external advice.
- IP and patent strategy should consider which is licensed on exclusive base?
  - Should adopt a mixture of licensing, start-ups, sponsored research & other technology transfer mechanisms.
- But choices require different resources and capabilities



# Challenge 7: Developing Incubators and TTOs

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## Incubators and TTOs

- Heterogeneity of spin-outs requires differentiated approach to creation and development
  - > develop a fit between resources at TTO level & espoused strategy
- Focus on gaining better insights into potential business models
- Bringing successful founding teams together
  - Is a sine qua non
- Should start long before a spin-off opportunity is detected



## Challenge 8: Remuneration and Incentives

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- **Remunerating and attracting TTOs**

- Need to enhance skills of TTOs.

- Problem: to attract and remunerate personnel to support the creation and business development of spin-outs and to attract venture capital

- **Incentivizing Academics**

- Need to adapt promotion and remuneration systems so that commercialization activities are valued

- Formalized periods of leave to enable academics to focus on development of a spin-out with the possibility of a return



## Challenge 9: Funding Availability

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- University Challenge Funds in the UK, or the *Fonds d'amorçage publics* in France help address initial funding gaps
  - A 2<sup>nd</sup> funding gap beyond start-up stage is evident for exit-oriented business models
  - VCs typically prefer to invest in spin-outs *after* the seed stage, once proof of concept achieved
  - To be successful, TTOs need to:
    - Understand their requirements
    - Present proposals that are investor ready
    - Have a clear decision-making process



# Challenge 10: Developing Innovation Policy Instruments (1)

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- Heterogeneity of Objectives and Opportunities
  - contribution to national competitiveness,
  - create jobs locally,
  - ensure a financial return for the university,
  - transfer public research results to industry...
- Various initiatives
  - Changes in IP ownership
  - Changes of researcher status,
  - Professionalisation of TTOs,
  - Financial support initiatives,
  - Business plan competitions, entrepreneurship training...
- Effectiveness not demonstrated & confusing signals: need for further evaluation



# Challenge 10: Developing Innovation Policy Instruments (2)

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- Develop local policies to enable the development and recruitment of individuals to act as **boundary-spanners** [e.g. Medici Scheme in UK]
- Need **to be present for longer periods** to enable development of links and networks both inside and outside the university,
- Need to enhance entrepreneurial **behavior** skills



# Concluding Comments

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- Spinning-out enterprises from universities represents many opportunities but also major challenges
- These challenges arise at different levels of analysis and are interdependent
- Spinning-out enterprises needs to be seen within the broader context of different modes of commercializing technology and knowledge from universities
- Spin-outs may not always be the appropriate choice
- To create spin-outs that create value is a long term process, requiring longer term financial support structures and strategies



# Thank You!....Questions?

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Detailed analysis available in:

Mike Wright, et al. (2007). Academic  
Entrepreneurship in Europe. Cheltenham:  
Edward Elgar