



The
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Programme on
Regional Innovation

Open innovation in the UK

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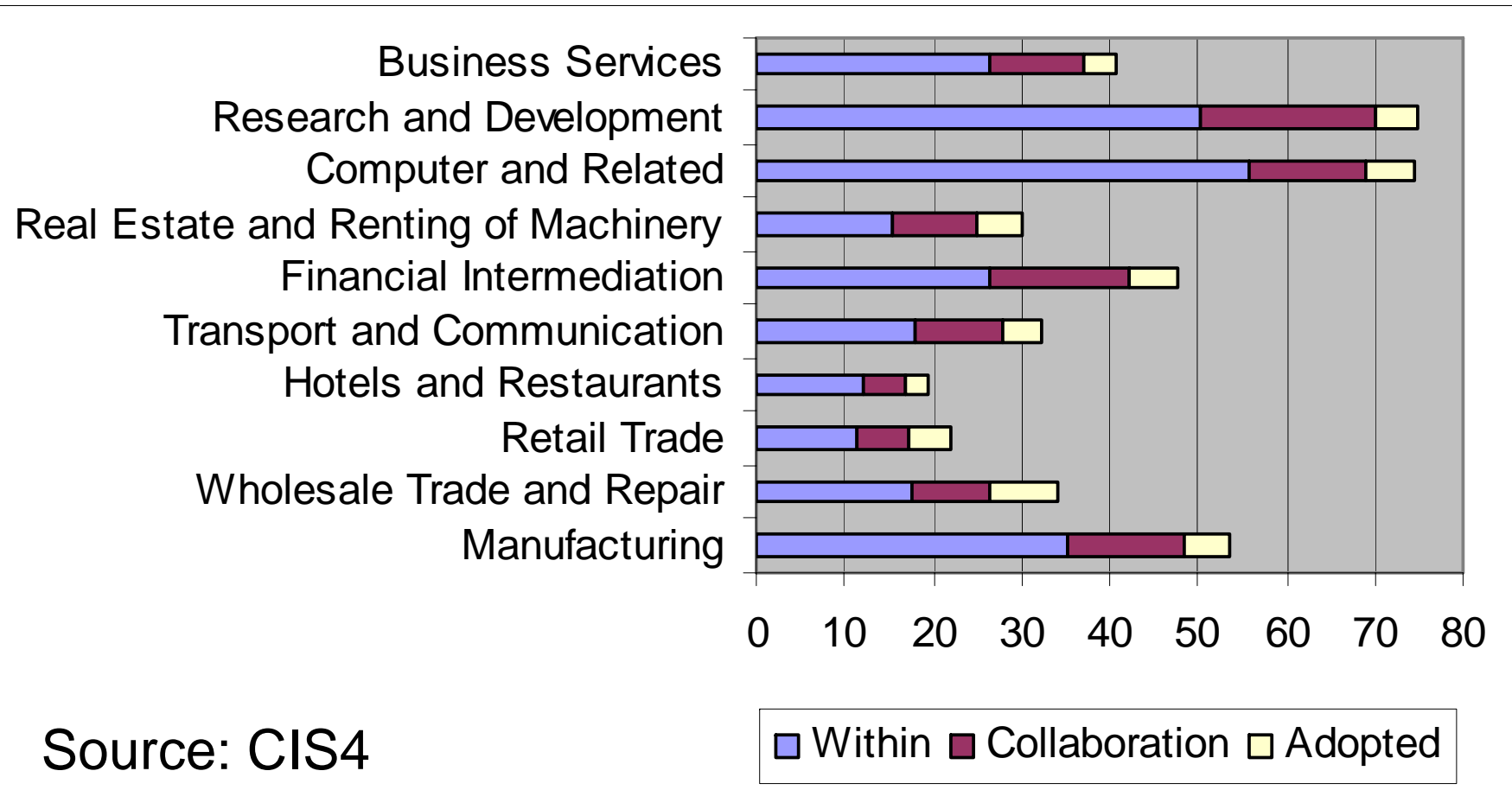
Open Innovation in the UK

- Who are the open innovators in the UK?
- What are the characteristics of open innovators?
- The importance of collaboration
- How to make collaboration with universities work

Who are the open innovators in the UK?

- Closed Innovation - firms rely on internal resources and the controlled internal business environment
- Open Innovation - a process where firms use both internal and external sources of ideas and deploy multiple business models to improve corporate performance
- Adoptive Innovation - utilise innovations developed elsewhere

Innovation Strategies by Sector (% of firms): Closed (within the firm), Open (in collaboration), Passive (adopted)



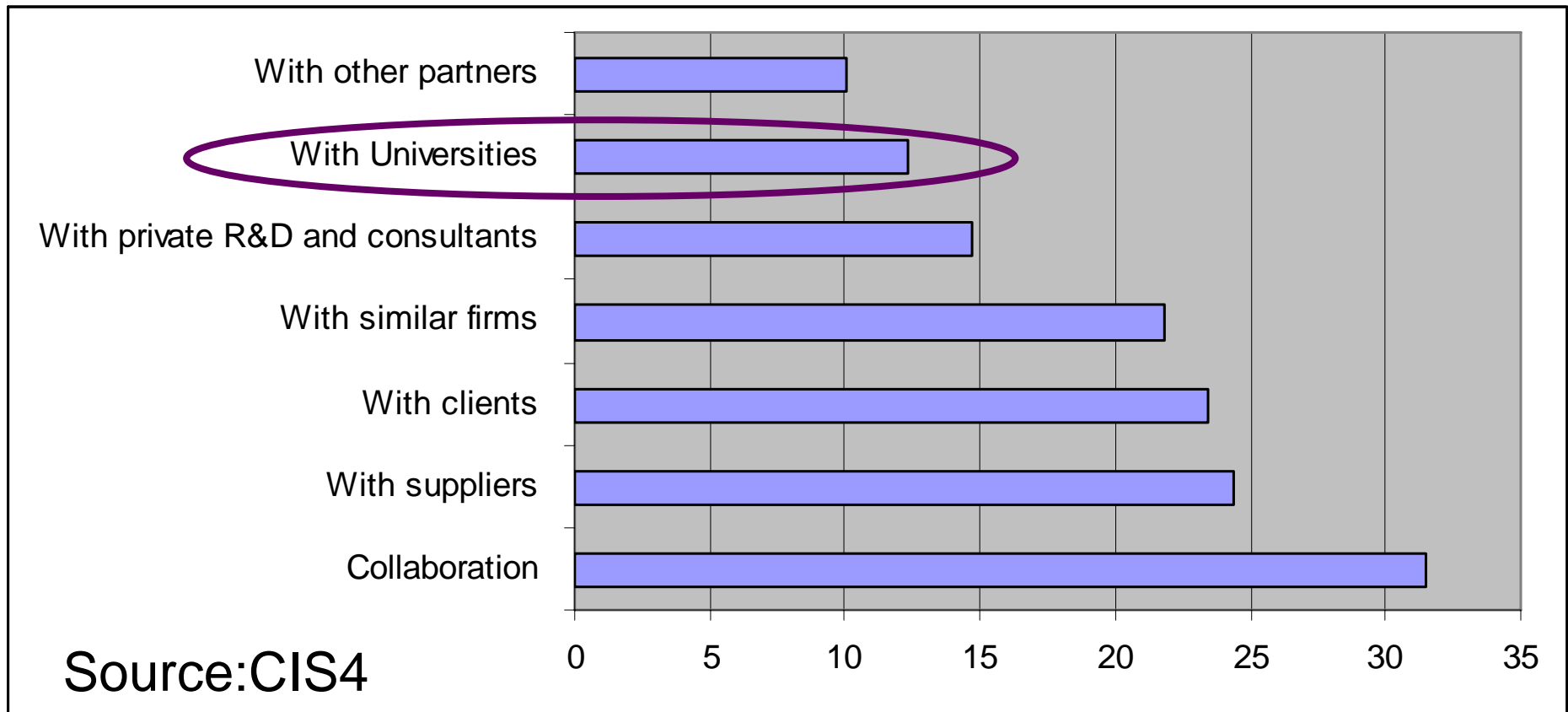
Characteristics of Closed Innovators

- Strong reliance on internal R&D employees (science and engineering) and R&D expenditure
- Benefit from the R&D tax credit
- Local and national collaborations moderately significant
- Importance of serving international markets
- 'Knowledge' is a major constraint

Characteristics of Open Innovators

- Greater reliance on non-science graduates
- Do not rely on internal R&D
- Do not benefit from the R&D tax credit
- Invest in new management techniques
- Local and national collaborations very significant
 - but the effect is larger for national collaborations
- Importance of serving international markets
- ‘Knowledge’ is not a constraint

Collaborative Partners: Innovating Firms (%)



The Evolution of University – Business Knowledge Exchange

- The 'laissez faire' model
 - Importance of chance, luck and serendipity
- The standard model
 - Focus on a narrow range of technology **transfer** mechanisms
- The wider model
 - Focus on a wide range of interactions
 - **Exchange** rather than transfer

The Laissez Faire Model

- Universities focussed on two missions – research and education
- Example: the ‘Cambridge Phenomenon’ developed when the University took little active interest in business engagement. In the past:
 - University largely ignored IP issues
 - Adopted a liberal attitude to what academics did
 - Industrial liaison merely acted as ‘window’ on what the university did – little exchange or dialogue

The Standard Narrow Model

- Narrow focus on Technology Transfer
- Mechanisms: Patents, Licenses, Spin-outs
- Limitations
 - Model is incomplete
 - Potential financial returns were frequently over-estimated
 - Metrics distorting behaviour (Goodhart's Law: any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes)



The Wider Model: Multiple Knowledge Exchange Mechanisms

- Educating people
- Increasing the stock of 'codified' knowledge
- Problem solving
- Public space functions (Universities do not move)
- Focus on exchange and interactions

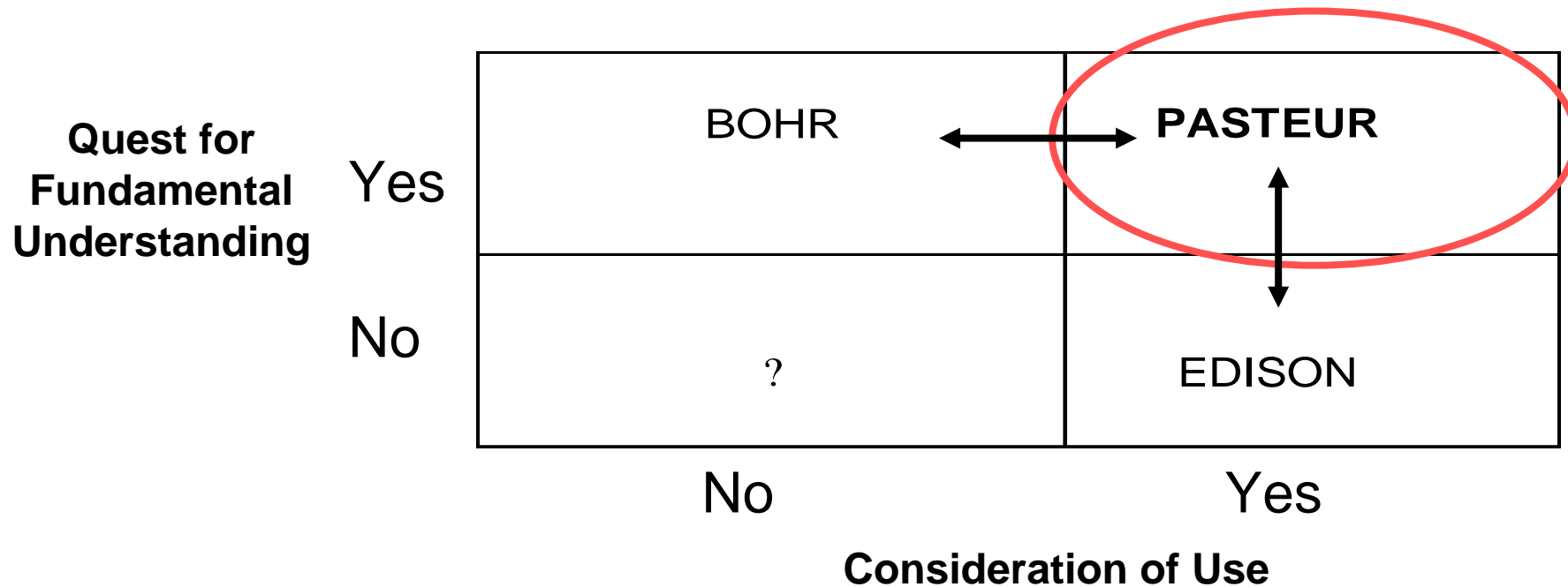
University-Business Interactions

- Results from US UK Innovation Benchmarking Survey (Cosh, Hughes and Lester, 2005)
- Businesses engaged with universities using a wide range of interactions
 - Informal contacts were the most frequent
 - Conventional modes of university output (such as graduates and publications) amongst the most frequently cited
 - Licensing and patenting amongst the least frequently cited

University-Business Interactions: Constraints and Hurdles

- Misaligned incentives
- Time frames
- Institutional differences
 - Vertically organised businesses
 - Horizontally flat universities
- Cultural differences
- ‘Language’ differences
- Lack of skills and competences at the collaboration interface (the ‘boundary spanning’ function)
- Funding (especially where the social rate of return is high but the private rate of return is low or widely spread)

Aligning Incentives – Knowledge Exchange in which space?



Source: D. Stokes (1997) Pasteur's Quadrant
Washington Brookings Institution

Encouraging Open Innovation

- Development of appropriate management practices to facilitate 'absorptive capacity'
- Develop outward looking 'bridging' networks
- Innovation policy: importance move beyond the narrow measures of innovation
- University-business knowledge exchange: the importance of multiple mechanisms and diversity

The Importance of Diversity

We should, however, guard against a situation where all our universities aim for the same goals. What is required is a diversity of excellence, with research universities focusing on curiosity driven research, teaching and knowledge transfer, and business-facing universities focusing on the equally important economic mission of professional teaching, user-driven research, and problem solving with local and regional companies. *Sainsbury (2007): The Race to the Top: A Review of Government's Science and Innovation Policies, p.44*

Further Information:

- Centre for Business Research
www.cbr.cam.ac.uk
- Programme on Regional Innovation
www.regionalinnovation.org.uk

Data Sources:

Fourth UK Community Innovation Survey (CIS4)

References:

Cosh, Hughes and Lester (2005) UK PLC Just How Innovative Are We? Cambridge MIT Institute

Sainsbury (2007): The Race to the Top: A Review of Government's Science and Innovation Policies

Stokes (1997) Pasteur's Quadrant, Washington Brookings Institution