The Role of Higher Education Institutions in an Open Innovation System: Myth or Reality?

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Outline

1. Introduction
2. Profile of Industry-Academic Collaboration
3. Universities within an Open Innovation Model
4. Impact of Universities within Open Innovation Model
5. Key Issues and Challenges

1. Higher Education System Undergone Profound Change

"British higher education has undergone a more profound reorientation than any other system in the industrialised world."
Halsey (1995, 302)

The government has become "more explicit, overt and determining, if erratic and vacillating, in its control of the university system"
Miller (1995, 70)

1. Two 'Souls' of Higher Education

- The **professional** 'soul' - ambivalence, disregard or outright hostility towards industrial collaboration within higher education; UK university system 'decidedly anti-industrial'

- The **producing class** 'soul' - sought to nurture and encourage research and technology exchanges between industry and higher education

1. Project Outline

- 3 UK 'regions': North West, Wales and East of England
- Project duration: 2007-09; two elements:

  1) **Firm level survey**: 6,000+ firms

  - random sample by region - stratified by economic activity and size
  - response rate just under 10%

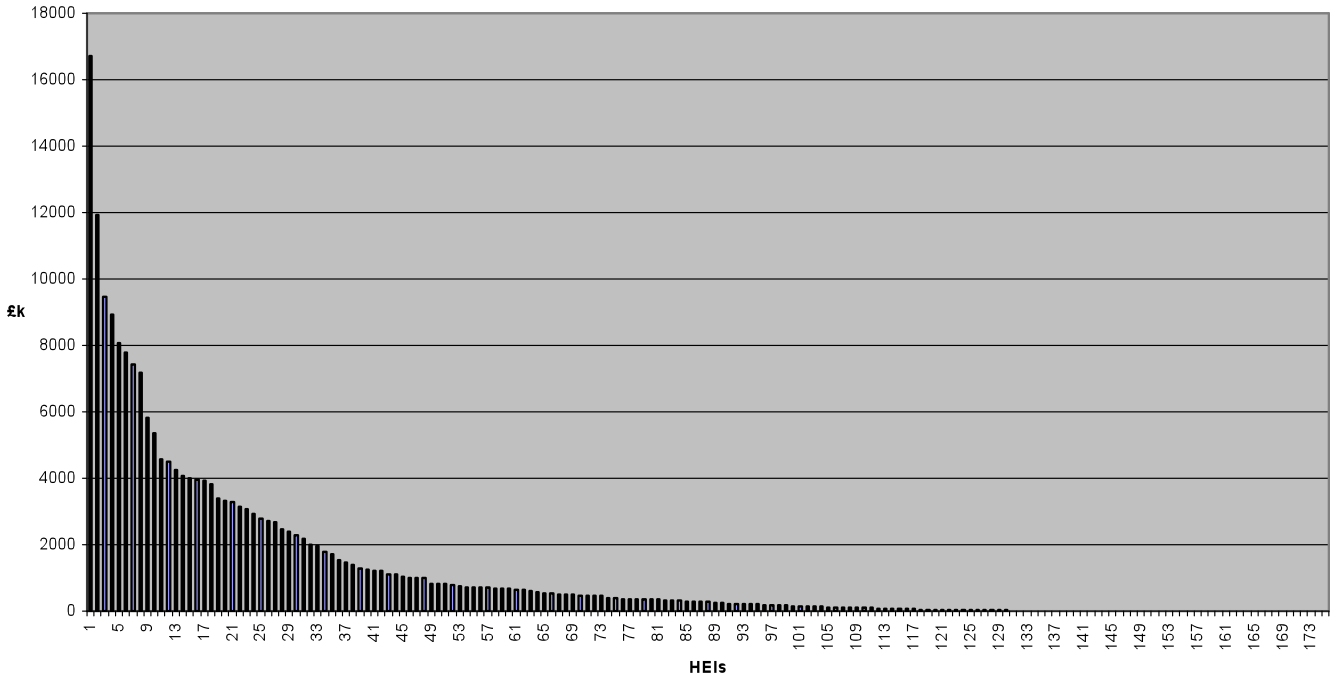
  2) **University survey**: 15+ HEIs across 3 regions (3X5)

2. Profile of Industry-Academic Collaboration

University interaction with firms:

1. In all countries dominated by a few universities

2. Industry Research Funding Distribution across Universities

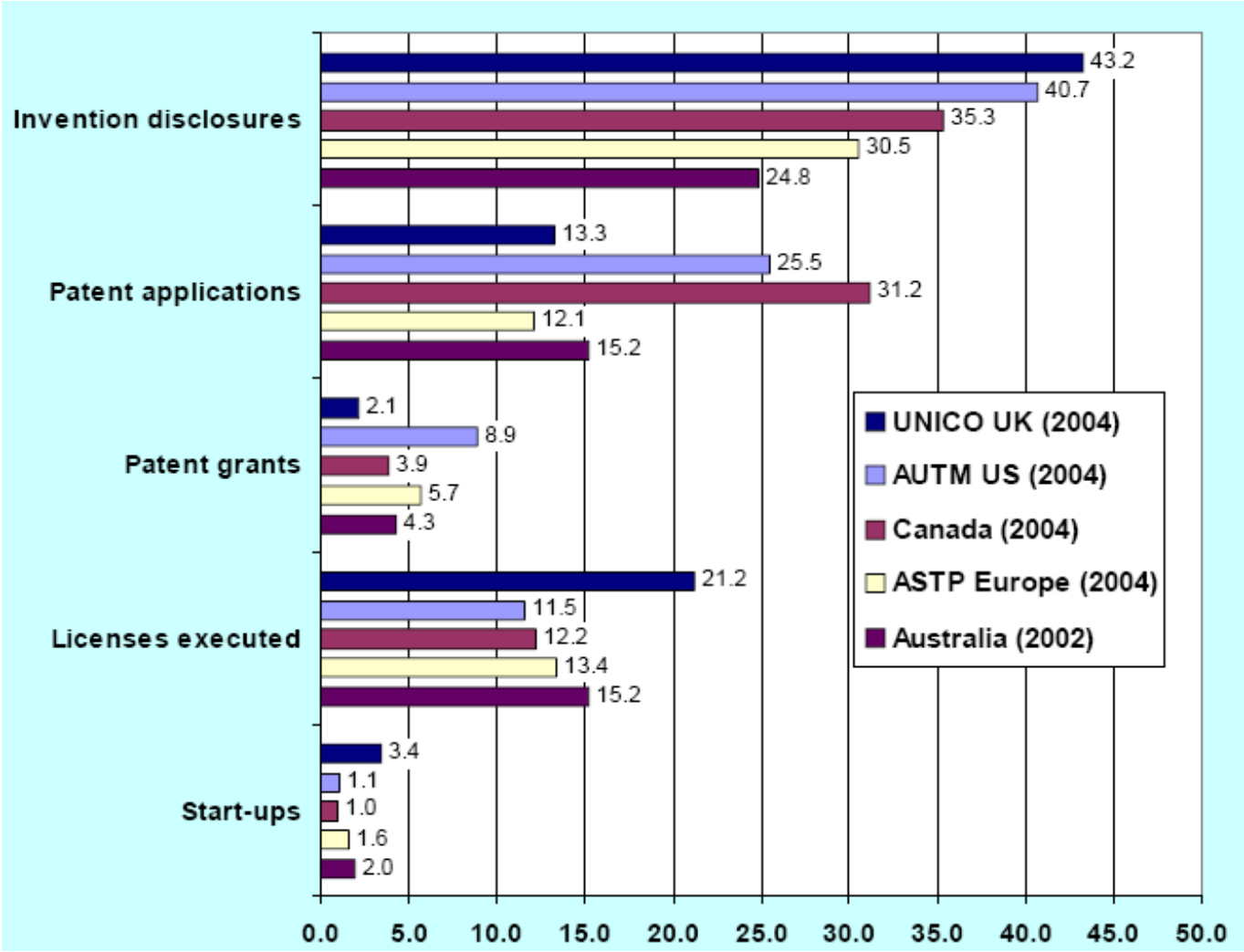


2. Profile of Industry-Academic Collaboration

University interaction with firms:

1. In all countries dominated by a few universities…
2. UK and European universities actually perform generally well compared with US universities….

2. International Comparisons



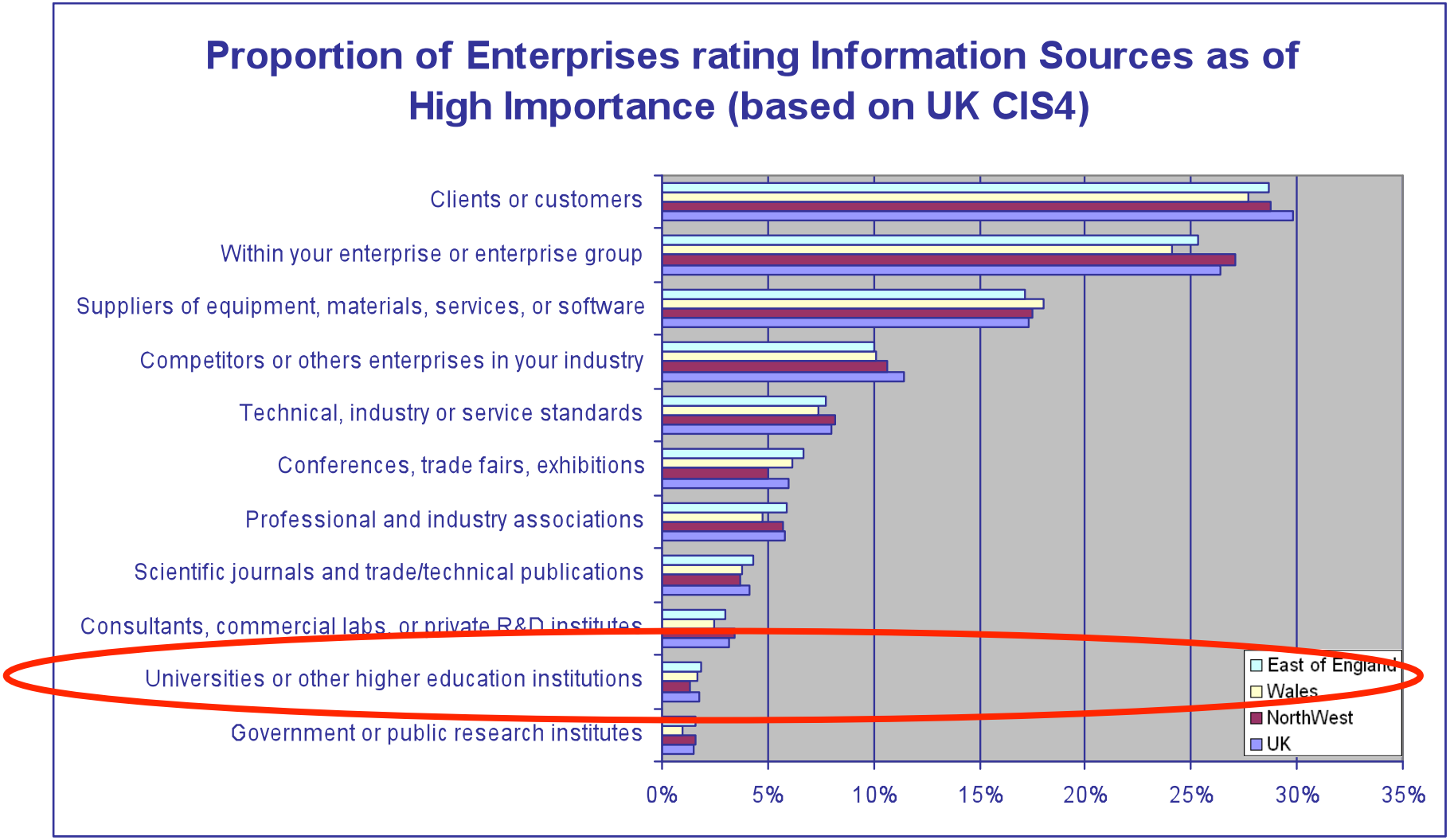
Number per 100 million US PPP $ research expenditures

2. Profile of Industry-Academic Collaboration

University interaction with firms:

1. In all countries dominated by a few universities…
2. UK and European universities actually perform well compared US universities….
3. … but universities score poorly as information sources…

Proportion of Enterprises rating Information Sources as of High Importance (based on UK CIS4)



2. Importance of HEIs: Information II

1. Customers or clients
2. Suppliers
3. In-house knowledge
4. Standards
5. Professional/industry associations
6. ….

12. Universities/HEIs

(Source: Manchester IRIN Study)

2. Profile of Industry-Academic Collaboration

University interaction with firms:

1. In all countries dominated by a few universities…
2. UK and European universities actually perform well compared US universities….
3. … but universities score poorly as information sources…
4. … and as innovation partners (CIS data)

3. Universities within an Open Innovation Model?

- Central conceptual issues about the generic open innovation model – how new and how deep for firms?
- ***How new?*** External research and innovation collaboration was the norm up until late nineteenth century
- ***How deep?*** Collaboration important especially in certain sectors e.g. FMCG and Proctor & Gamble regime, but elsewhere core intellectual knowledge kept firmly internal to retain proprietary (monopoly) rights

3. Universities within an Open Innovation Model?

However beyond these generic conceptual issues to the specifics of universities in this model:

- Basically at first glance it is not looking that good:
- ….although UK universities doing better than most HEIs in other countries…
- if we are truly moving into some kind of 'touchy feely' open innovation model…
- ….. universities basically seen as last resort….
- … worse, in the past universities seen as primarily 'cheap'

3. Universities within an Open Innovation Model?

Why rated so poorly?

- High perceived costs of locating partners and participation (c.f. universities as poor information providers)
- Divergence of objectives between the partners
- Lack of a professional approach by the institution
- Misunderstandings/lack of aims (Lambert Review 2003)
- Low priorities of academics given to the work
- Maintaining contacts with firms (staff turnover)
- Opportunity costs with scarce resources (esp. SMEs)

3. Universities within an Open Innovation Model?

- Going too far?
- Maybe….. linkage/network analysis tends to focus on dyadic (one-to-one) relationships and ignores role universities may play on more (one-to-many and many-to-many) combinatoiral linkages
- More fundamentally our evidence suggests that once contact made the impact of such collaborations can be highly significant….

4. Impact of Universities within Open Innovation Model

- ….. both in general open innovation framework via outsourcing activity

4. Impact of Universities within Open Innovation Model

Those firms NOT outsourcing any research and technical activity and generating a product innovation over last 5 years

6.67%

Those firms outsourcing some of their research and technical activity and generating a product innovation over the last 5 years

30.08%

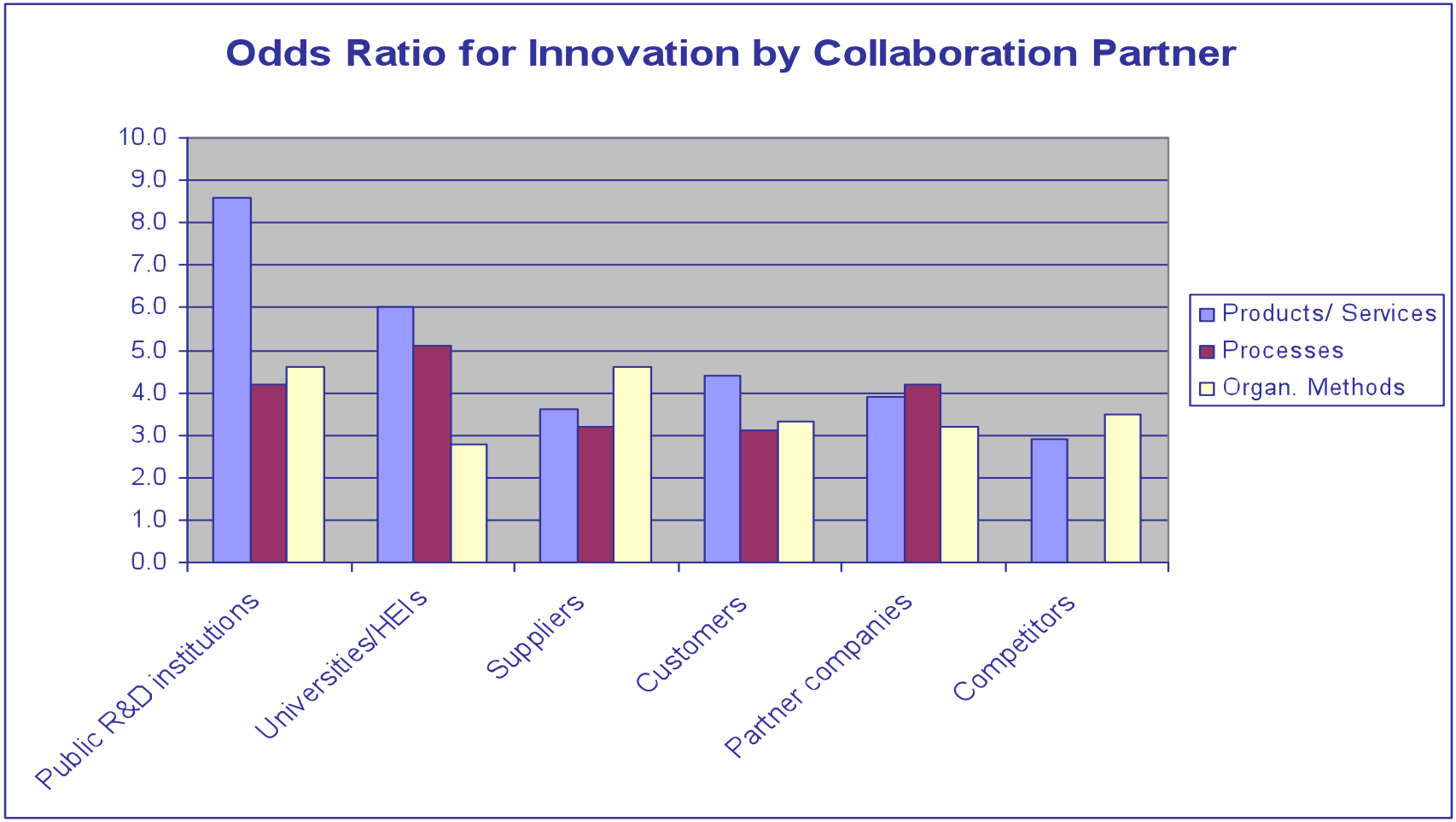
4. Impact of Universities within Open Innovation Model

Outsourcing activity:	Producing over the last 5 years a:		
	Product or service innovation	Process innovation	Organizational innovation and methods
Not outsourcing any research or technical activity	6.67%	9.45%	10.83%
Outsourcing research or technical activity	30.08%	29.81%	24.58%

4. Impact of Universities within Open Innovation Model

- …. but also more specifically in terms of universities which have an important causal impact, especially in new product/services and process innovation….
- ….. also other key partners

4. Impact of Universities within Open Innovation Model



4. Impact of Universities within Open Innovation Model

Impact of Collaboration on Innovation (Logistic Regression Analysis) *

	Products/ Services	Processes	Organ. Methods
Public R&D institutions	8.6	4.2	4.6
Universities/HEIs	6.0	5.1	2.8
Suppliers	3.6	3.2	4.6
Customers	4.4	3.1	3.3
Partner companies	3.9	4.2	3.2
Competitors	2.9		3.5

*: results presented as odds ratios

Note: all results shown are significant at 5%

Note: missing cell = insignificant odds ratio

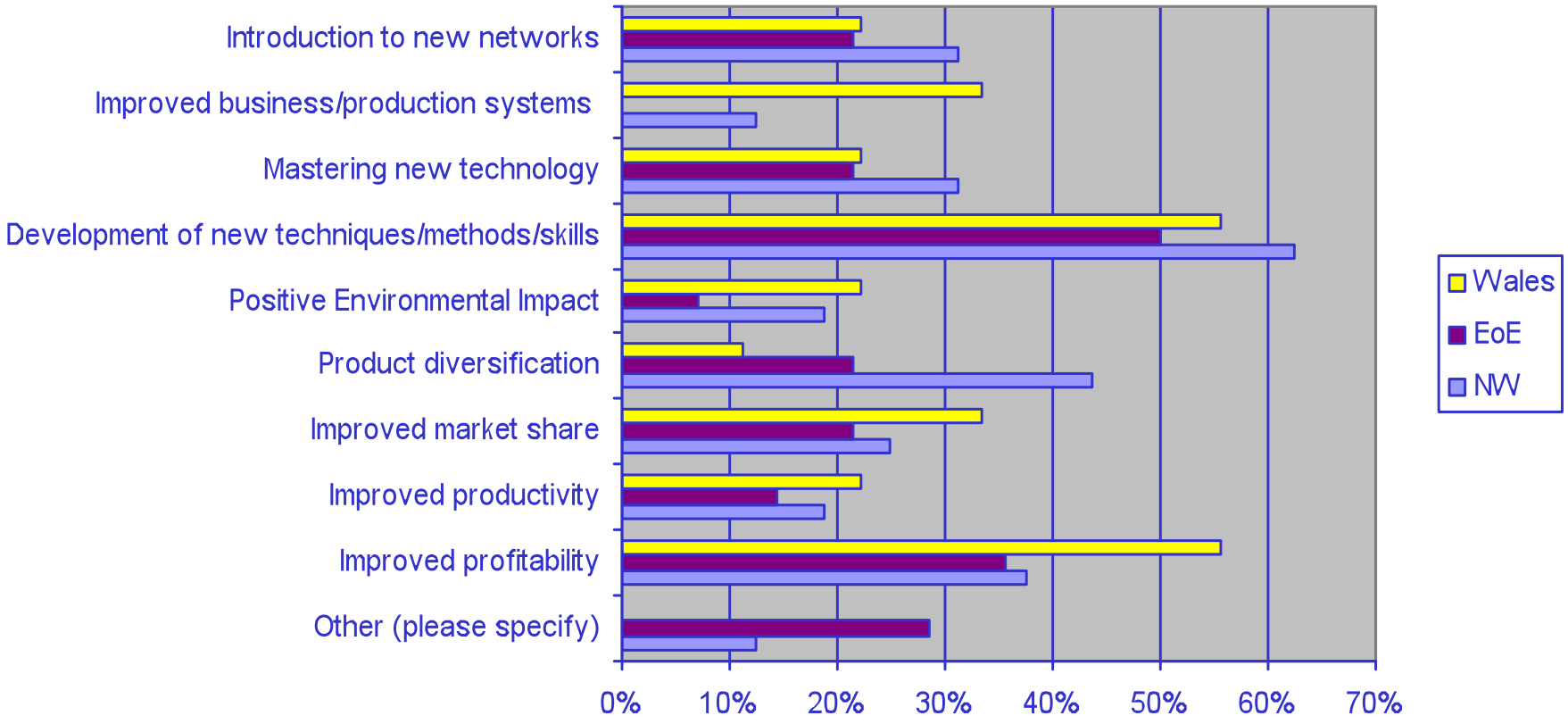
4. Impact of Universities within Open Innovation Model

- Also evident in key performance areas:

  - new techniques, methods and skills
  - profitability
  - market share
  - productivity
  - production and business systems
  - introduction to new networks

4. Impact of Universities within Open Innovation Model

Distribution of Impacts for Firms with University Collaboration



(Source: Manchester IRIN Study)

5. Key Issues and Challenges

Collaboration is good for you..

… but still major issues:

- Lack of awareness is a major problem: important policy problem
- Another major element is alignment (non-relevance); are we asking too much of universities here?
- This is especially true for **SMEs** where resources and time are limited and where demand frequently centres on highly applied, short term technical issues which universities often find difficult to address and lack interest for the academic concerned

Thank You

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