

# ‘The Role of University–Business Collaboration in Influencing Regional Innovation’

Professor Ian Oakes  
7<sup>th</sup> December 2010



**‘The age of austerity  
is only just beginning  
for Universities’**

**‘Salaries soar for heads of British universities  
More than 80 university heads earn more than.....’**

**‘Students are a burden  
on society’**

**‘Student loan system is unaffordable’**

**‘Students dissatisfied with  
University education’**

**‘No jobs for University  
graduates’**



**'English degrees protest  
planned for eve of  
Commons vote'**

***'Students hit by scrapping education  
maintenance allowance.....'***

***'Universities alarmed by  
the 40% cuts in teaching  
budgets'***

**'Fourth student  
protest planned for  
eve of Commons vote'**

***'Browne's plans will drive whole fields  
of knowledge into decline'***

***'Graduate  
unemployment at the  
highest for 10 years'***

Such headlines largely overshadow the fact that:

- The Higher Education Sector has a significant role to play in the future prosperity of the country
- Knowledge and skills transfer between universities and businesses is now regarded as being strategically important to regional economies
- Universities are now considered to have a role to play in fostering economic growth, establishing new companies, applying new technologies and increasing professional and technical skills of the workforce.

So the fundamental questions I would like to address this morning are:

- *How can regions or sub regions (like the West Midlands), with limited economic resources to draw on, prosper in the rapidly changing global economy?*
- *What can these regions do to improve their economic prospect both short term and long term?*

## **Issues to be covered:**

- #1 – Our vulnerability to globalisation
- #2 – What can we do?
- #3 – Universities as ‘Engines of Innovation’
- #4 – The role of a Regional Innovation System
- #5 – Improving the Regional Innovation System

## **#1 – Our vulnerability to Globalisation**

- Justified sense of vulnerability to globalisation
- Regions have fewer resources to cope
- Many traditional pillars of economy acquired or displaced

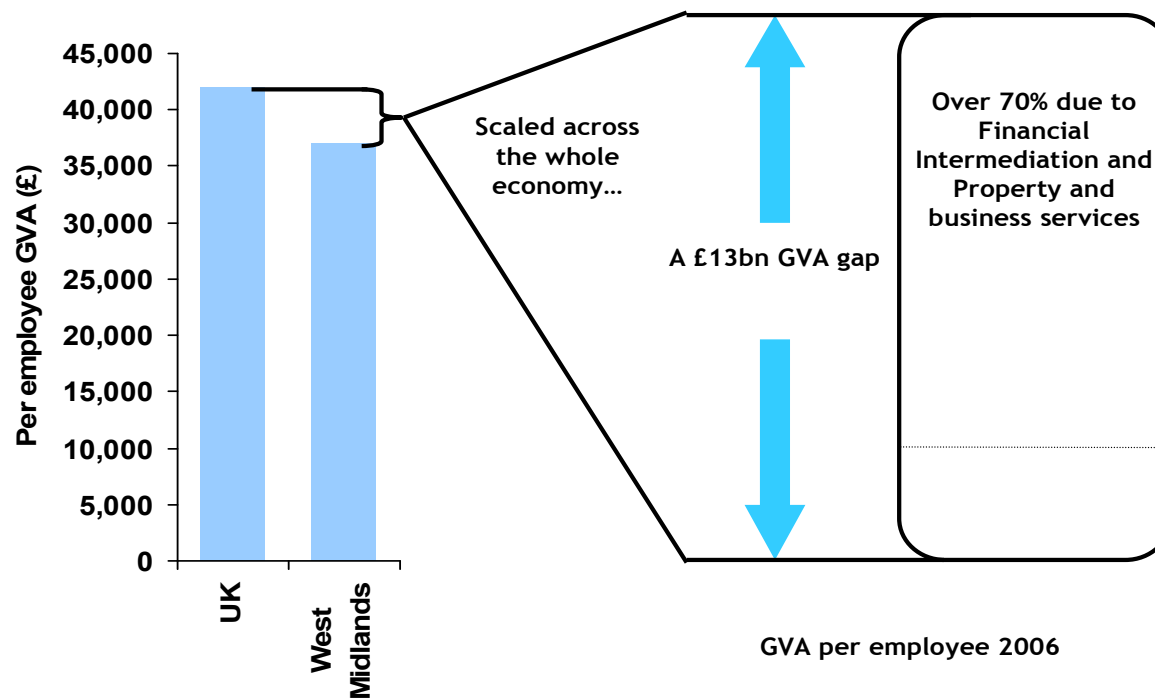
So why bother?

**Whichever metric you use - as a region we are not doing very well!**

## A West Midlands perspective

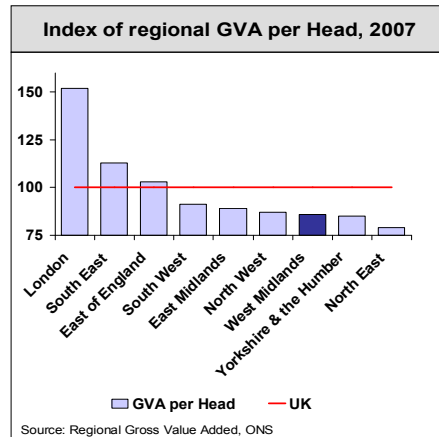
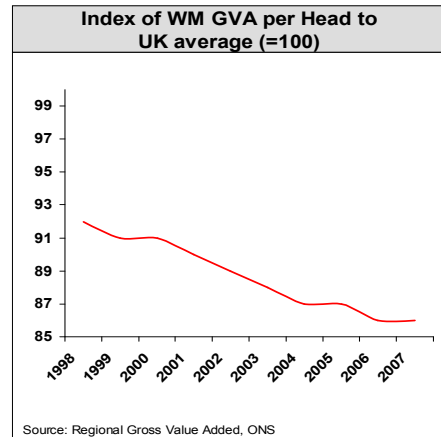
Less productive than the national average and is actually the second least competitive region in the country. The gap is growing - to around £15 billion

### The challenge - a £13bn output gap

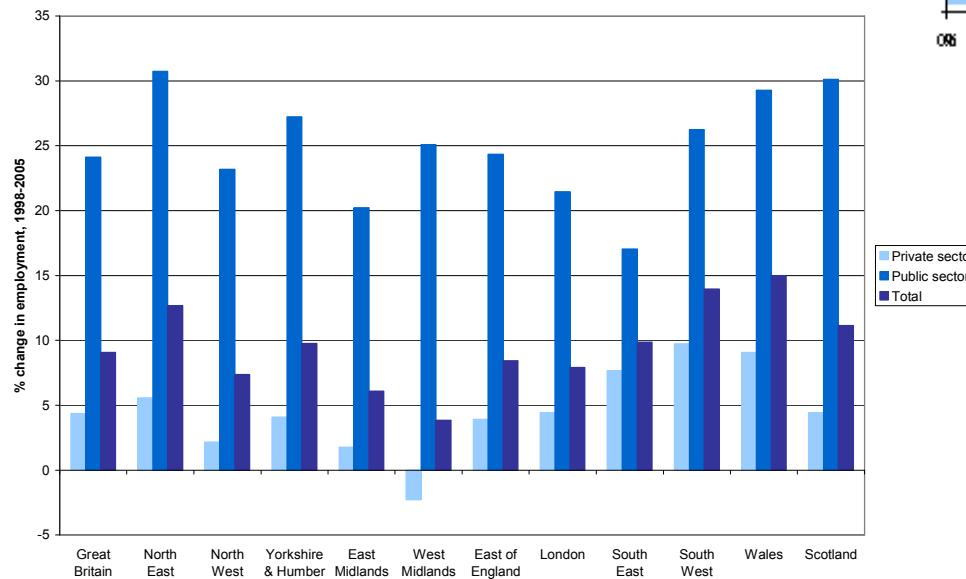




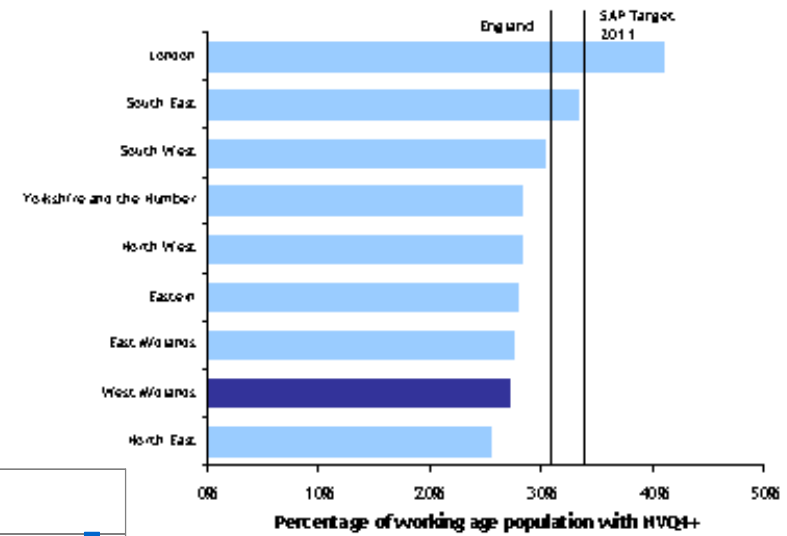
## GVA per Head



West Midlands Regional Observatory 2009

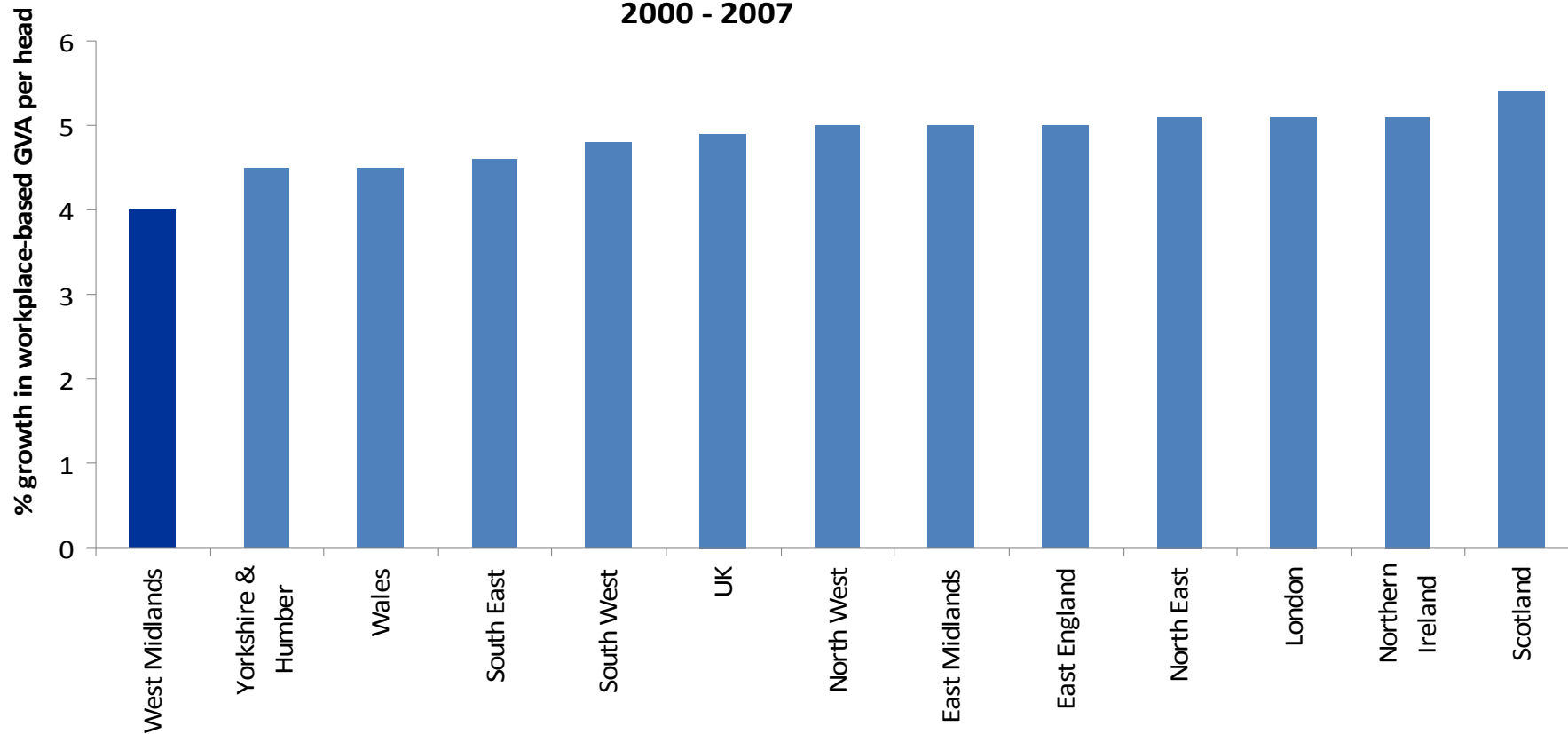


## 28. Percentage of working age population with NVQ Level 4+, 2008



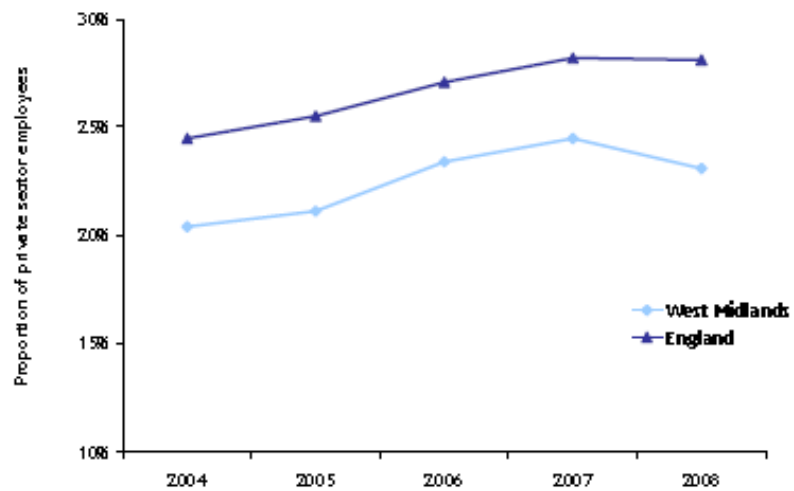
West Midlands Regional Observatory 2009

**Average Annual Growth in Workplace-Based GVA per head of Population  
2000 - 2007**





### Proportion of private sector employees with NVQ Level 4+



Source: LFS 2008

West Midlands Regional Observatory 2009

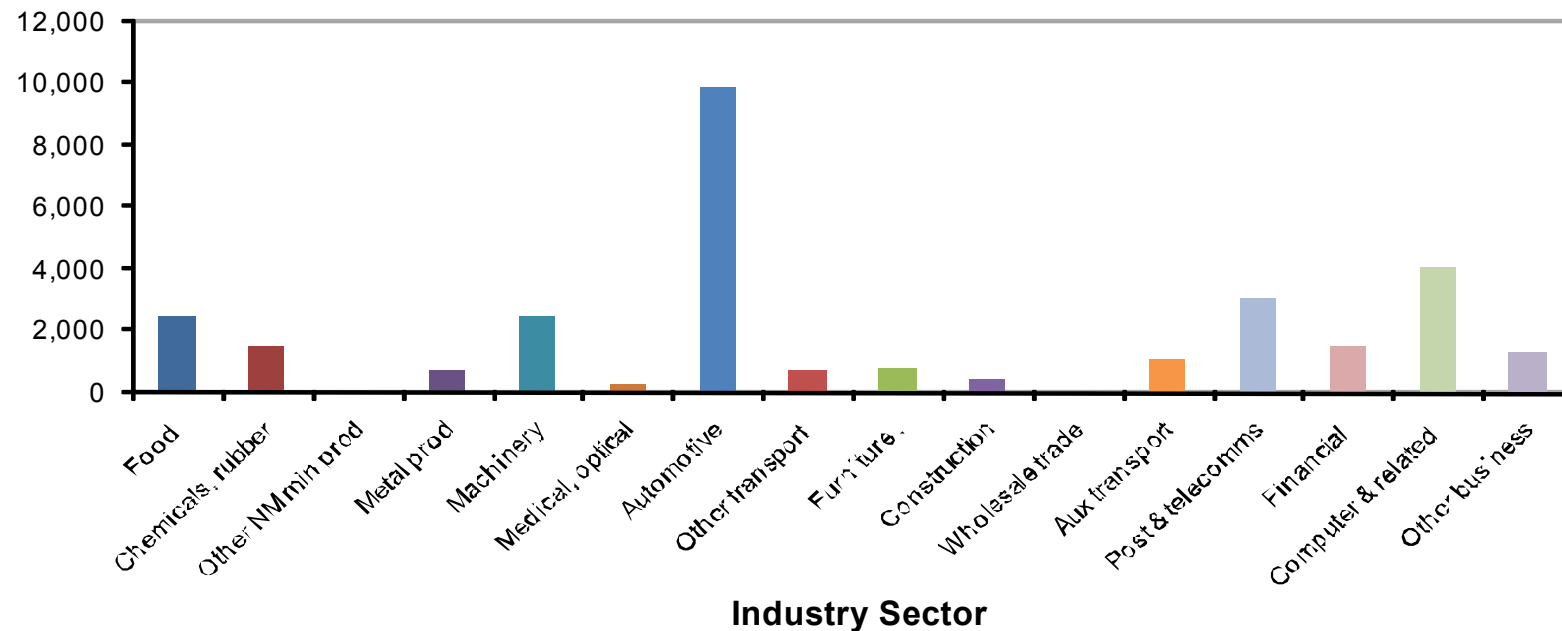
### Graduate attraction: regional incomers, 2006



Source: Prospects

West Midlands Regional Observatory 2009

**Number of Jobs by Sector 1999/0 - 2008/9**



**The local economy's strengths comprise mature industries which raises the question of whether we have sufficiently focused on diversifying the economy?**

## the West Midlands *...in numbers*

- £13 billion output gap
- Approximately 120,000 deficit in higher level skills
- 90,000 deficit in higher skills in Private Sector
- VAT registrations / 10,000 adult population = 36 (43 Eng. av.)
- Expenditure on R&D as % of GVA = 1.06% (1.45% Eng. av.)
- >10,000 shortfall in Leadership & Management skills

# Summary

- Long-term structural decline
- 60,000 Private sector job losses in 10 years
- Reliance on low value-added sectors
- Skills shortages.... Not enough graduates
- Regionally, only 11,000 net new jobs predicted by 2015 – 850,000 already ‘workless’
- Now Public Sector job losses to come  
(c70,000 ? )

### **Key Point#1**

*The West Midlands economy is less productive than the national average and is actually the second least competitive in the country. The gap is growing - to around £15 billion.*

## #2 – What can we do?

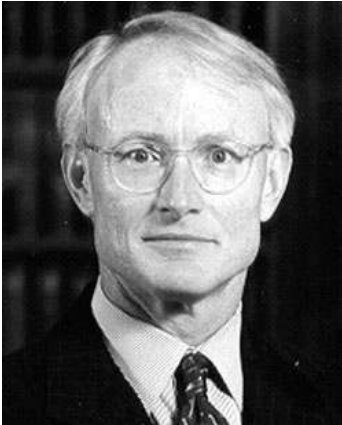
### Strengthen local capabilities for INNOVATION

The strictest and most conventional sense of ‘**innovation**’ may be understood as:

*‘the process by which firms master and put into practice products and processes that are new to them’. (Nelson & Rosenberg 1993).*

**‘capabilities for innovation’** - the ability to conceive, develop and produce new products and services, to develop new processes and to improve those already in use.





In his book '*Competitive Advantage*' Porter described the linkages between firms and innovation support infrastructure amongst firms. and stressed that.....

*'for advanced economies with high labour costs, producing standard products with standard processes will not be sustainable'.*

*'advantage comes from the ability to create and then commercialise new products and processes – shifting the technology frontier as fast as rivals can catch up'.*

Adapting to new market and technological opportunities through innovation is the key to sustainable growth and prosperity at a local regional level.

Successful firms harness innovation to gain competitive advantage – that is, producing new products that deliver higher value to customers and priced accordingly.

### **Key Point#1**

*The West Midlands economy is less productive than the national average and is actually the second least competitive in the country. The gap is growing - to around £15 billion.*

### **Key Point#2**

*The linkages between knowledge, innovation and competitiveness are increasingly well recognised.*

## #3 – Universities as ‘Engines of Innovation’

Government policy has considered science and innovation to be crucial to economic development and that innovation is specifically responsible for improving competitiveness.

 HM Government

**New Industry,  
New Jobs**



When focussing on innovation and an educated workforce as the means to long term prosperity, attention naturally turns to the contribution of local universities.

High profile examples of successful regional economies in which the university contribution is easily identified - such as Silicon Valley with CISCO, Yahoo and Google and the region around Cambridge with the St John's Innovation Centre.

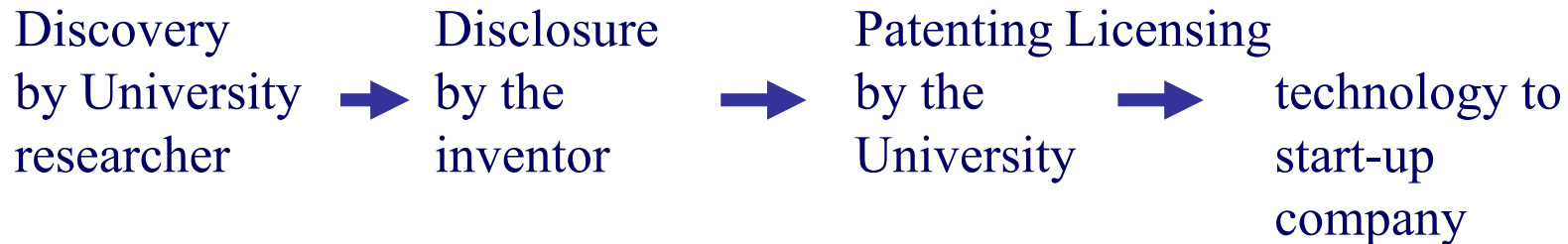


The Google logo, consisting of the word "Google" in its characteristic multi-colored font.



The Yahoo! logo, featuring the word "YAHOO!" in purple with an exclamation mark and a registered trademark symbol, with "UK & IRELAND" written below it in purple capital letters.

A standard view of a University's economic role:

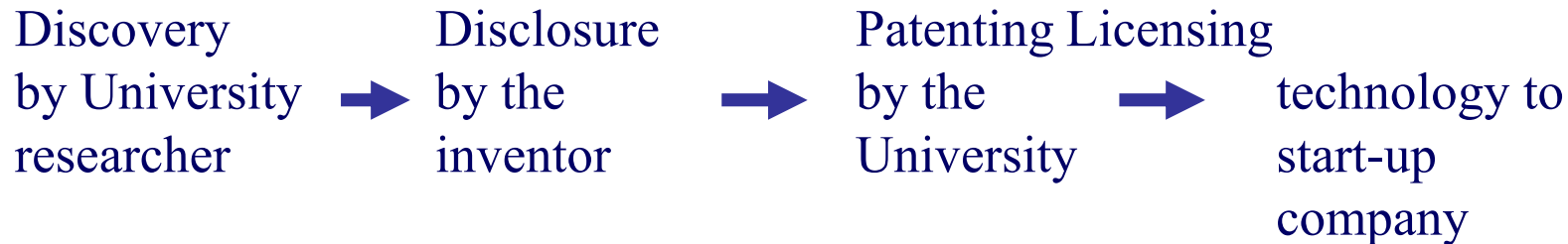


New business formation around university science and technology is very small – 2-3% of total rate of new business starts.

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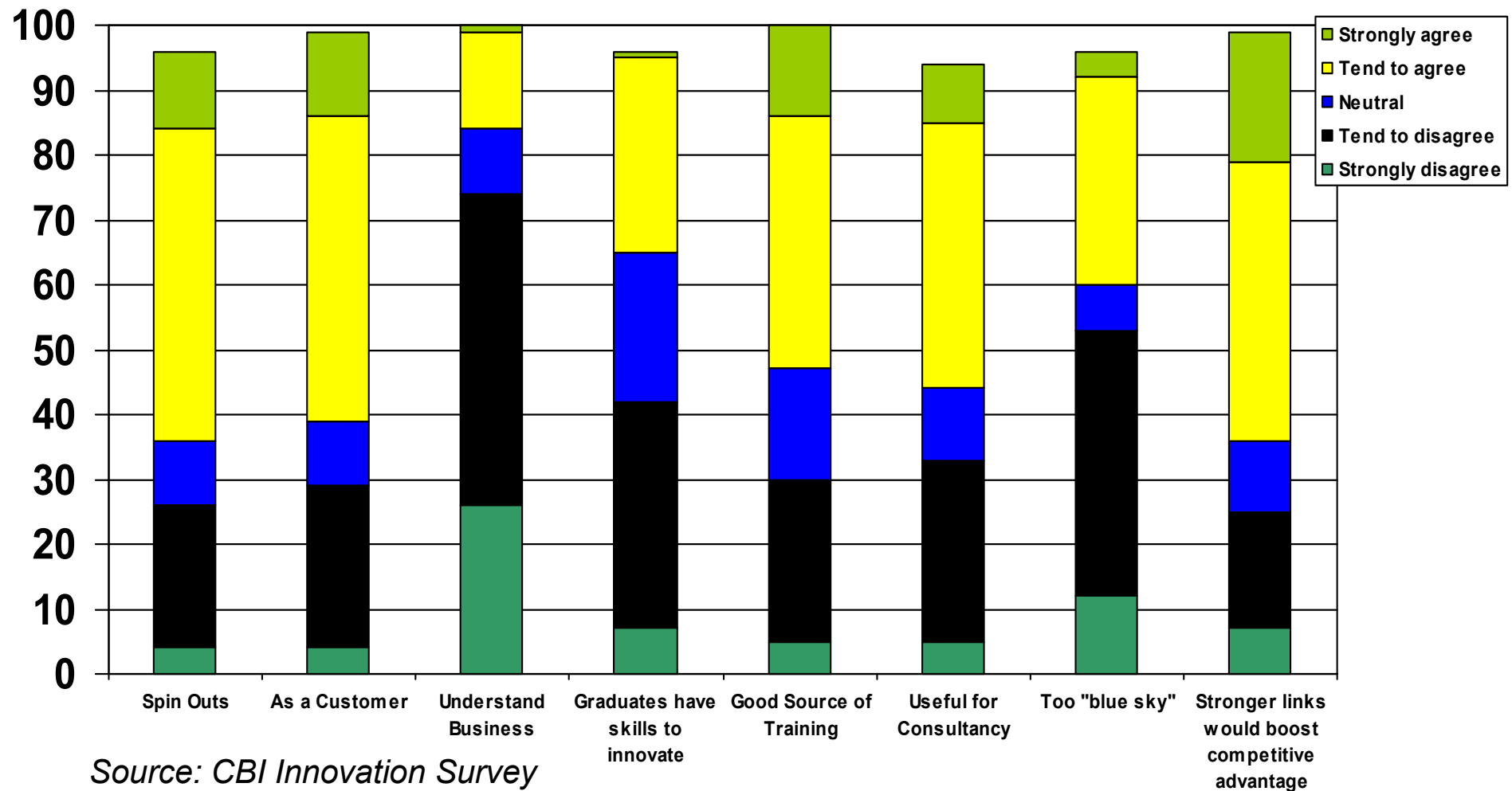
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**Patenting and licensing are not the only ways for the transfer of knowledge from universities to business**

## Perceived role of Universities by industry and business





## **HE – economic impact**

- Higher education delivers a wide range of services and outputs vital to the economic, social and cultural well being of the UK
- Major economic sector in the UK - annual output of £59bn, generating 280,000 jobs directly and a further 300,000 indirectly
- Education, training and skills to ~2.4m students/yr. Over 350,000 of these students are not domiciled in the EU, generating of £5.5bn in export earnings.

Acceptance of the relative innovation value of both ‘Blue sky’ and ‘applied research’ activity.

The government funded Knowledge Transfer Partnership (KTP) programme is considered to be successful by the government and popular with both business and academia.

This type of partnership has become very common, particularly with non-research intensive universities and can take a variety of forms ranging from licensing agreements, formal technology transfer partnerships and consultancy agreements.

‘The University today finds itself in a quite novel position in society. It faces a new role with few precedents to fall back on.....we are just now perceiving the University’s invisible products – its knowledge – may be the most powerful single element in our culture, affecting the rise and fall of professions and even social classes of regions and even nations’

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**1963**

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### **Key Point#3**

*There is an emerging research consensus that universities can play a wider role in innovation and acceptance of the relative innovation value of both 'Blue sky' and 'applied research' activity.*

## #4 – Regional Innovation Systems

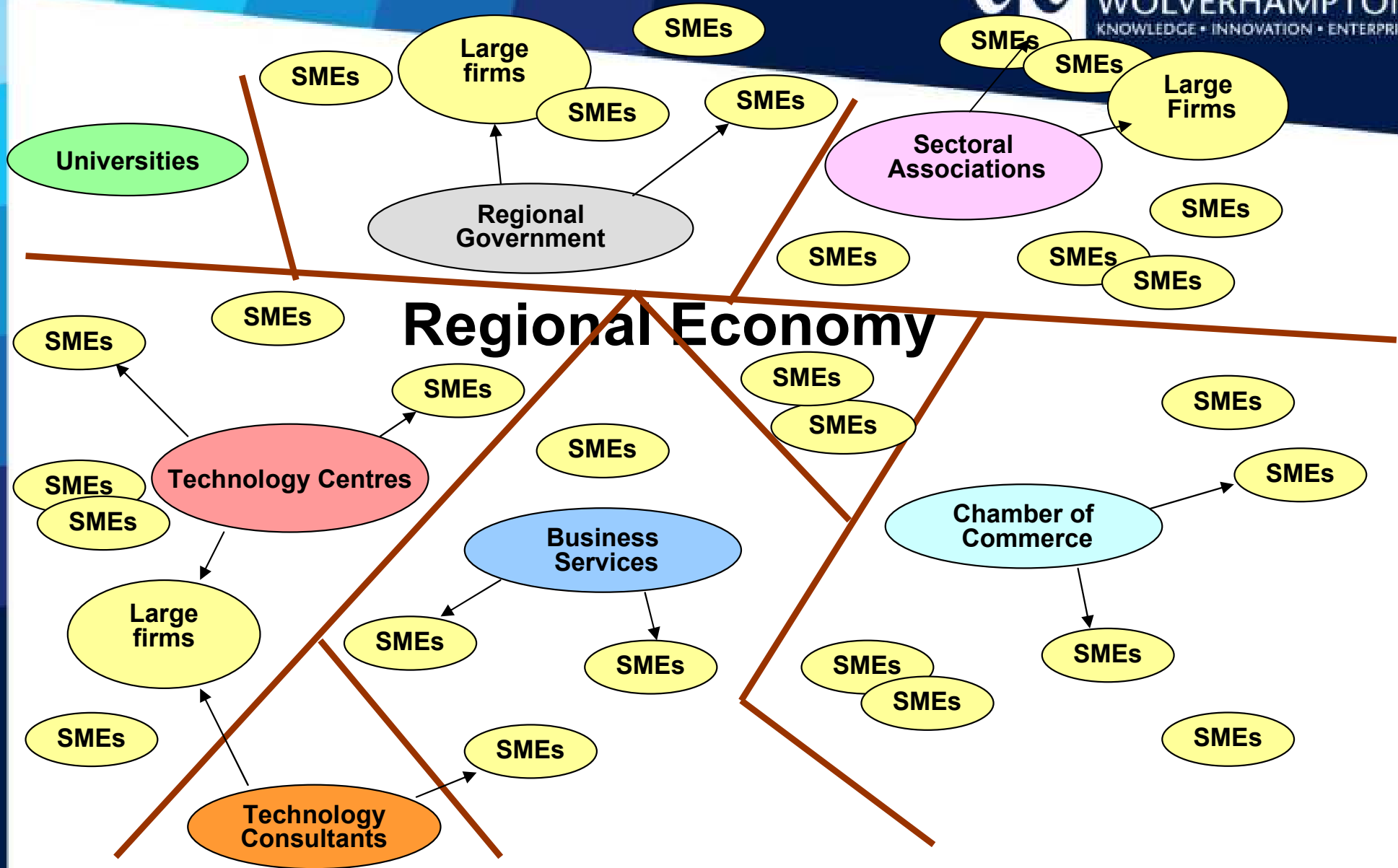
*‘A Regional Innovation System is likely to have firms with access to other firms in their sector operating formal or informal networks with knowledge centres such as Universities, with a two-way interchange on innovation and the existence of the financial infrastructure needed for firms to generate innovation’*

The factors which influence innovation systems such as:

- Learning capability
- R&D intensity
- Inter firm relationships

## Structural factors affecting Regional Innovation Systems

1.	Inability of firms to identify their needs for innovation and the technical ability to assess them
2.	Lack of technological intermediaries capable of identifying local business demand for innovation and channelling it towards sources of innovation
3.	Lack of a dynamic business services sector offering services to firms to promote the dissemination of innovation
4.	Weak co-operation between public and private sectors and the lack of an entrepreneurial culture facilitating inter-firm co-operation
5.	Specialisation in traditional industries with little inclination for innovation. Predominance of small family firms.
6.	Little participation in international research and development networks, poor communications networks and difficulties in assessing external expertise
7.	Few large multinational firms undertaking R&D with poor links to local economy
8.	Low levels of assistance for innovation and poorly adapted to local SME needs.

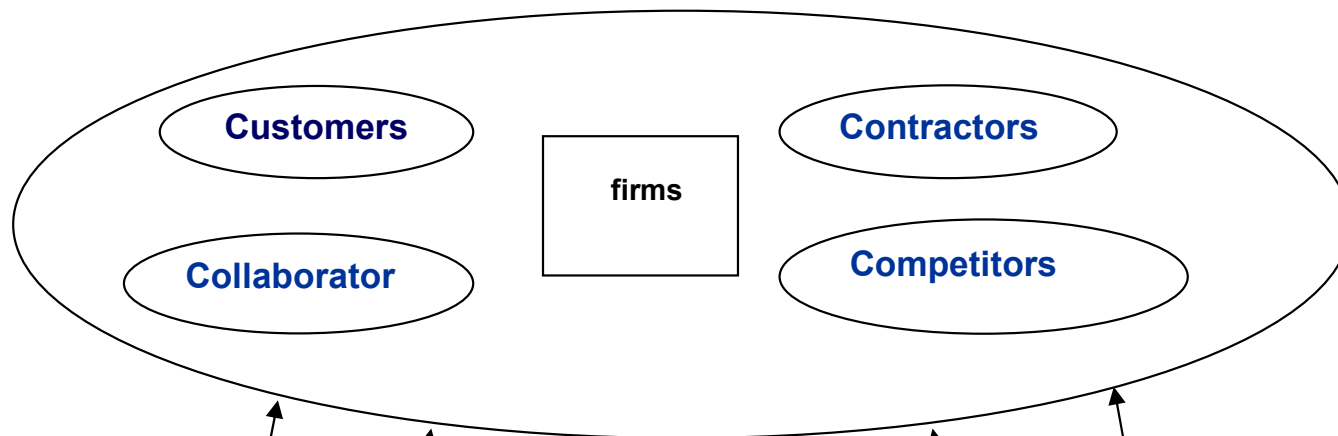


**A Fragmented Regional Innovation System**

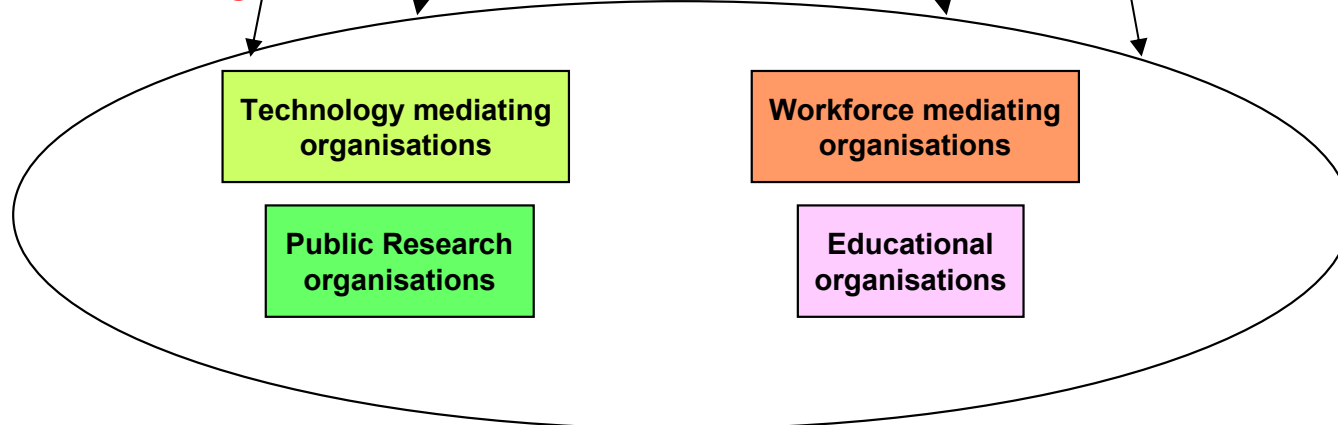


## A Regional Innovation System

**Knowledge application and exploitation sub-system**



**Knowledge, resources and human capital flows and interactions**



**Knowledge generation and diffusion sub-system**

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### **Key Point#4**

*The more innovation is needed in poorer regions to increase competitiveness of the firms, the more difficult it is to absorb public funds for the promotion of innovation in these regions.*

## #5 – Improving the Regional Innovation System

(i). Facilitation of cooperation and coherence between the different agents which are part of the regional innovation system

### **Example - Wolverhampton Business Solutions Centre**

A partnership initiative to deliver integrated business solutions by bringing together business engagement activities into a single unit.

Creating a fundamental improvement to the way business support services are delivered, drawing on expertise from across the partnership

City of Wolverhampton College

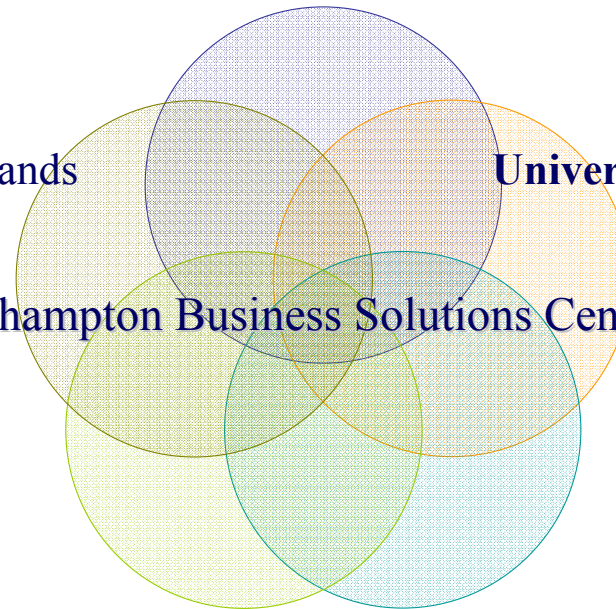
Business Link West Midlands

**University of Wolverhampton (lead)**

Wolverhampton Business Solutions Centre

Wolverhampton City Council

Black Country Chamber of Commerce



(ii). Identifying and helping to express innovation demands and needs from regional organisations especially small and medium sized enterprises

### **Example: Employer & Business Engagement Programme**

- Identify target sectors
- Capture market intelligence (*understand the innovation needs*)
- Channel to market (*promote University services*)
- Network membership (*sharing ideas*)
- Seminar/Specialist Lecture (*promote new developments*)
- Best practice visits (*learn from others*)
- Innovation Forums (*identify new products for new markets*)

(iii). Coordinate the demand (**desire and capacity to use knowledge**) with the supply (**availability of R&D, technological expertise, investment funds**) and eventually open the gates to external innovation sources and partners where necessary.

**Example: Provision of an ‘Innovation Portfolio’ comprising:**

- Innovation Vouchers
- Mini Knowledge Transfer Partnerships
- Collaborative R & D
- Knowledge Transfer Partnerships
- Innovation Networks
- Proof-of-concept funds

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**Also:**

**Unlocking the potential of the region’s Research ‘Powerhouses’ –  
Warwick and Birmingham Universities for the benefit of small  
firms**

**Thank you for listening.....**