

Course: Economics of Innovation

Topic: Knowledge-intensive business services in the innovation processes

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Three themes

- Defining clusters and cluster policy
 - Communities of practice and multi-scalar policy
- Clusters and higher education
 - Using clusters to resolve priorities and policy difficulties
- Creative industry clusters
 - Stretching the concept

What do we mean by clusters and clustering?

- Varied definitions and approaches
- 'Clusters' vs the process of 'clustering'
- Clusters as self-generating groupings
- Processes of facilitating clusters
- Importance of linkages and interdependence
- External economies and un-traded interdependencies
- Real phenomena or heuristic devices?

Dimensions and characteristics

- Multisectoral
- Interaction/synergy
- Spatial concentration
- Hierarchical inter-regional linkages
- Institutions and identity
- New forms of governance – frameworks for policy analysis and development

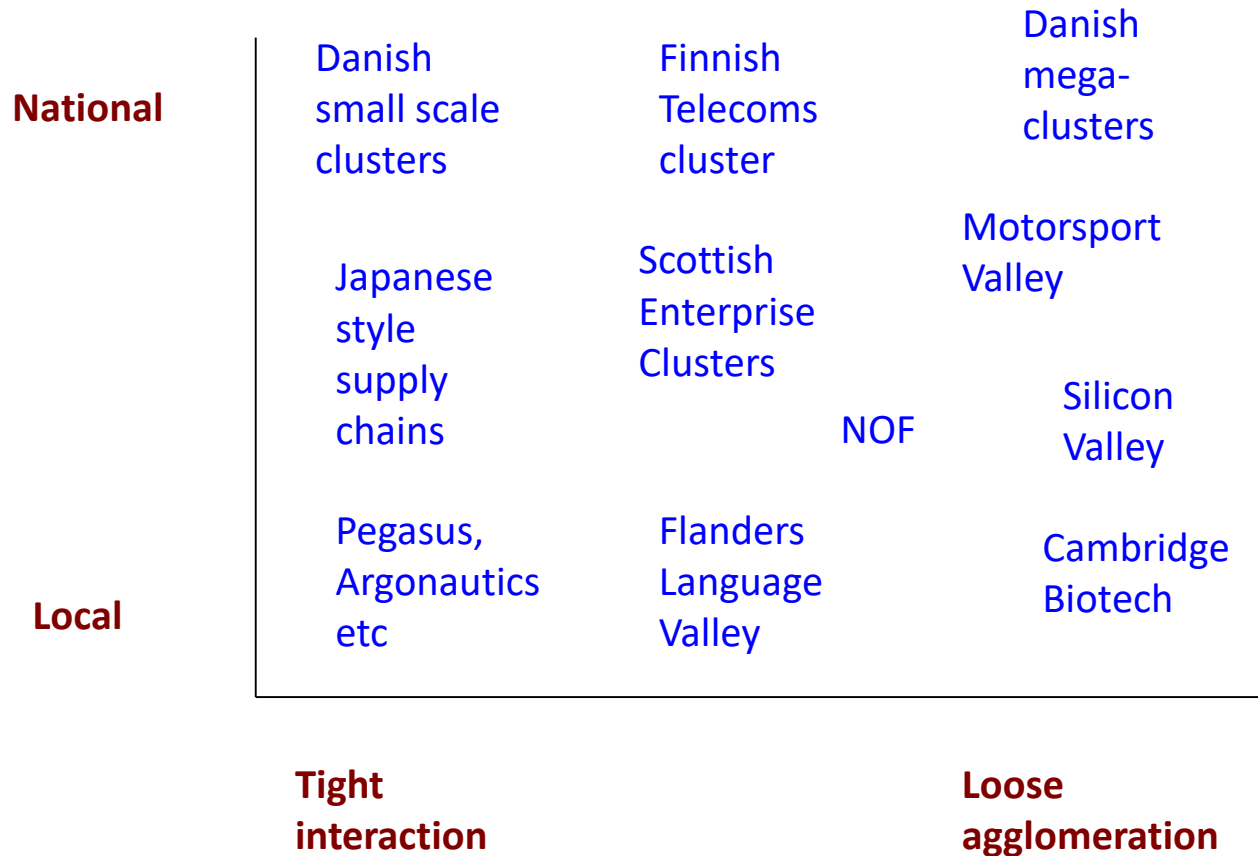
Clusters as innovation systems

- OECD Cluster focus group
 - Innovation seldom takes place in isolation but is systemic. The notion of a cluster as a 'reduced scale innovation system'
 - Clusters are networks of production of strongly interdependent firms linked to each other in a value-adding production chain.
 - Clusters mostly also encompass strategic alliances with universities, research institutes, knowledge-intensive business services, bridging institutions (brokers, consultants) and customers.

Issues in identifying clusters

- Spatial scales
 - Local
 - Regional
 - National
- Levels of interaction
- Breadth of sectoral coverage
- Focus on firms or sectors

Geographical scope and intensity of interaction



Uniqueness

- Each country or region has its own unique cluster forms
- Variation in selection and variation processes
 - Between countries/regions
 - Technologies
 - Policy systems
- No 'ideal' cluster or form – no best practice
- Cluster 'innovation styles'

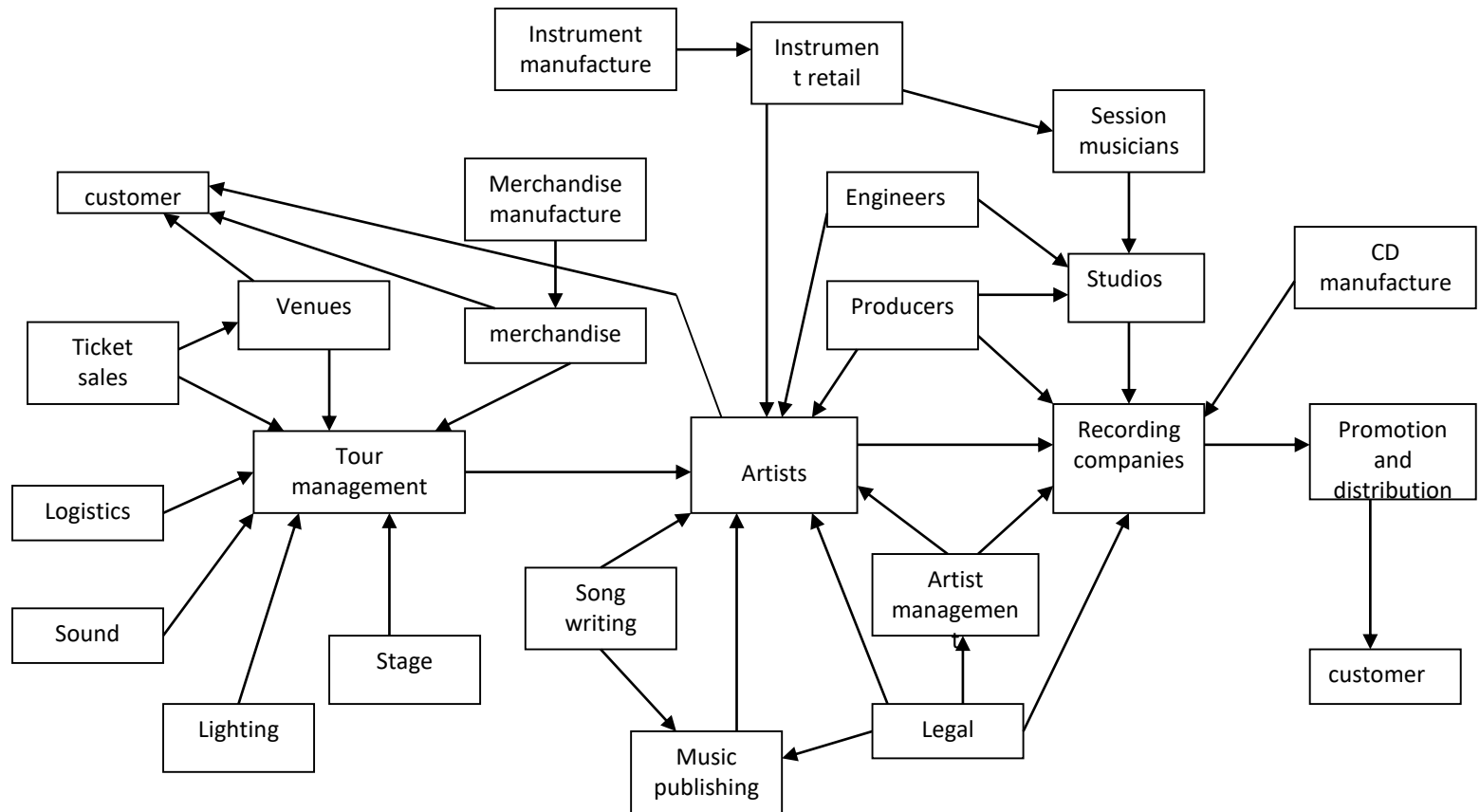
An alternative approach

- Cluster as **knowledge community**
- Node of knowledge generation and dissemination
- Focus on **agglomeration of skilled people** rather than firms
- Dominant designs, genres and movements
- Competition **and co-operation**
- Conventions and institutions
- Shared assets

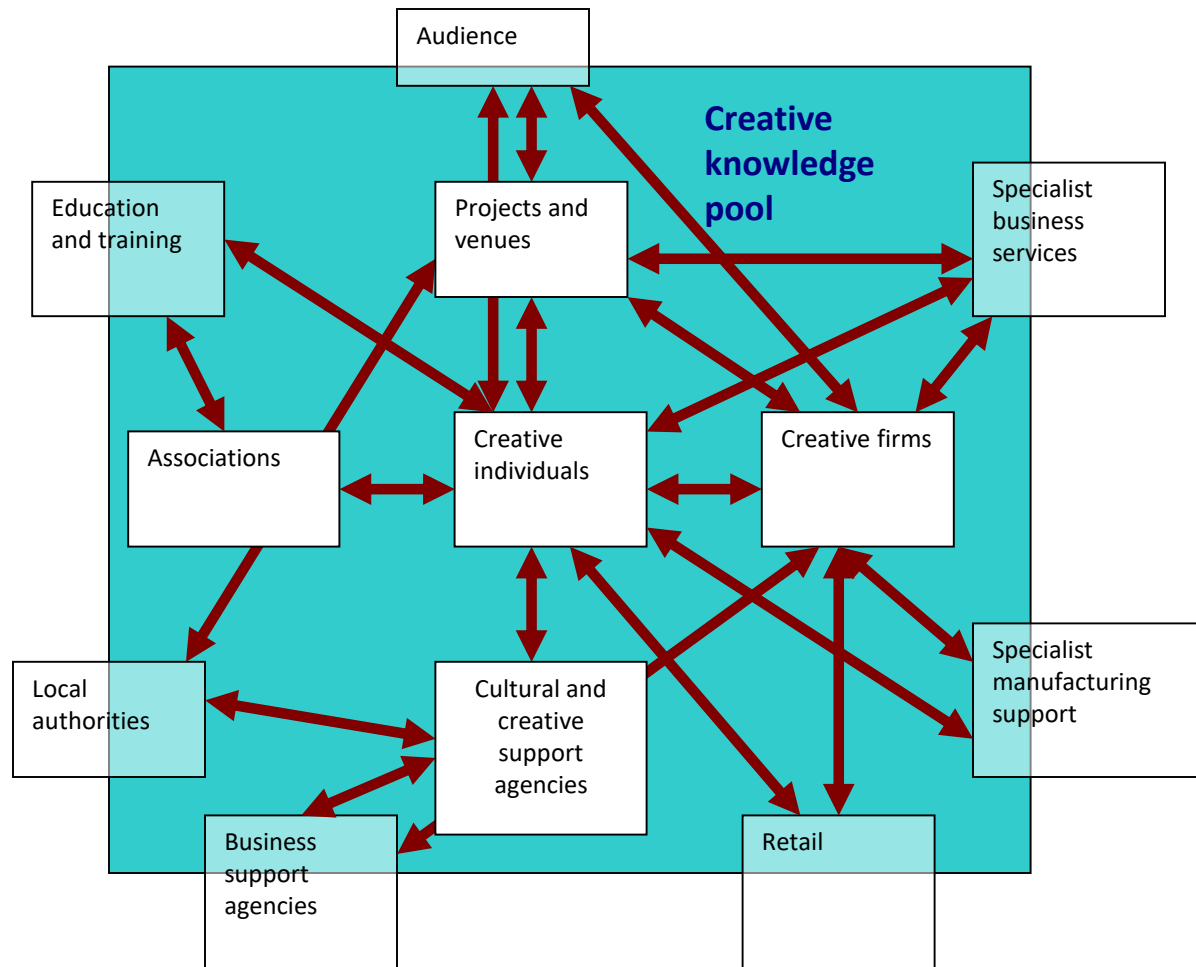
Knowledge community

- a knowledge community is ‘a group of people (principally designers, managers, and engineers in this case) often in separate organisations but united by a common set of norms, values and understandings, who help to define the knowledge and production trajectories of the economic sector to which they belong’. (Henry & Pinch, 2000, p194)

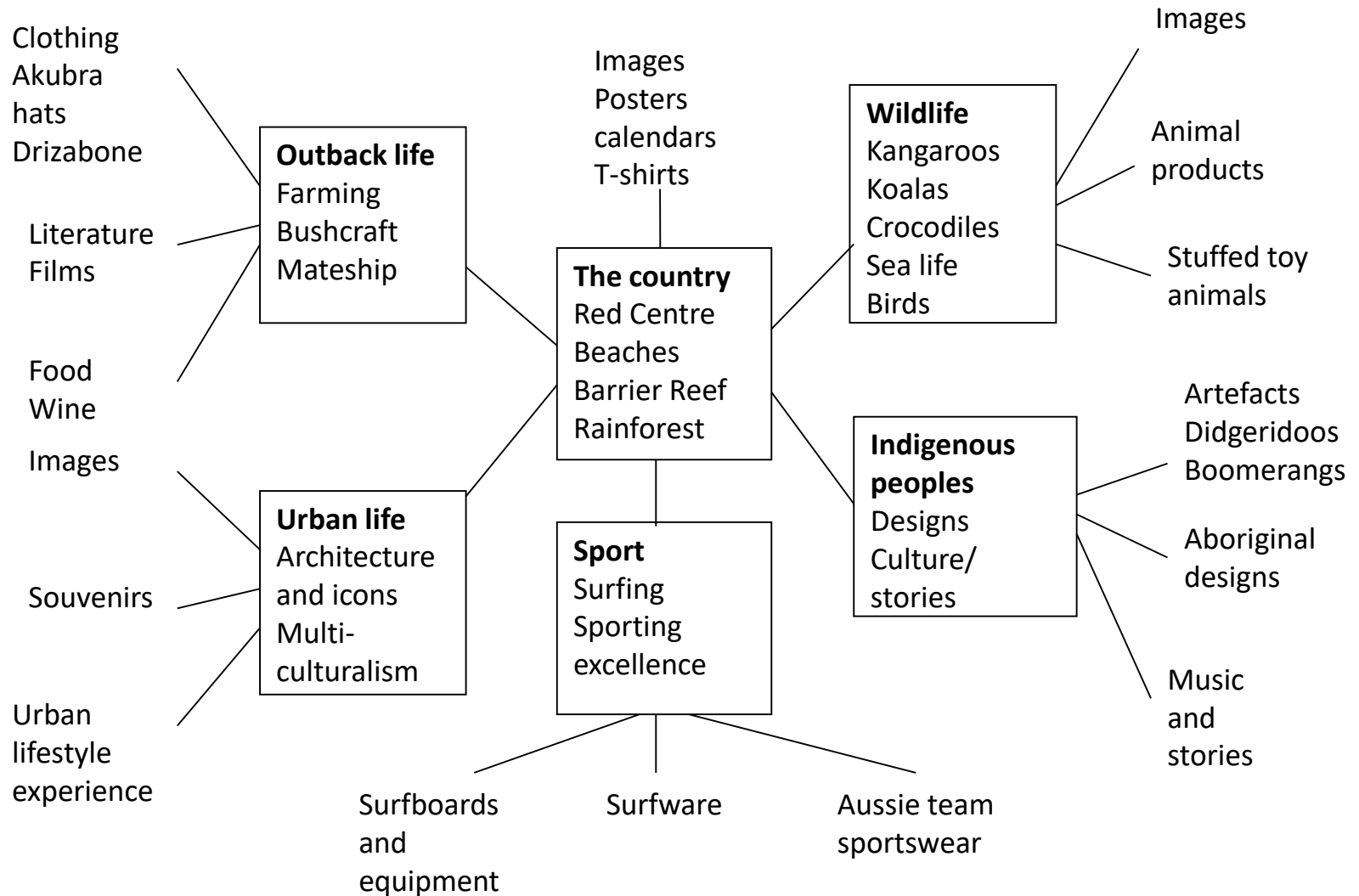
Music cluster/production network



Creative industries cluster?



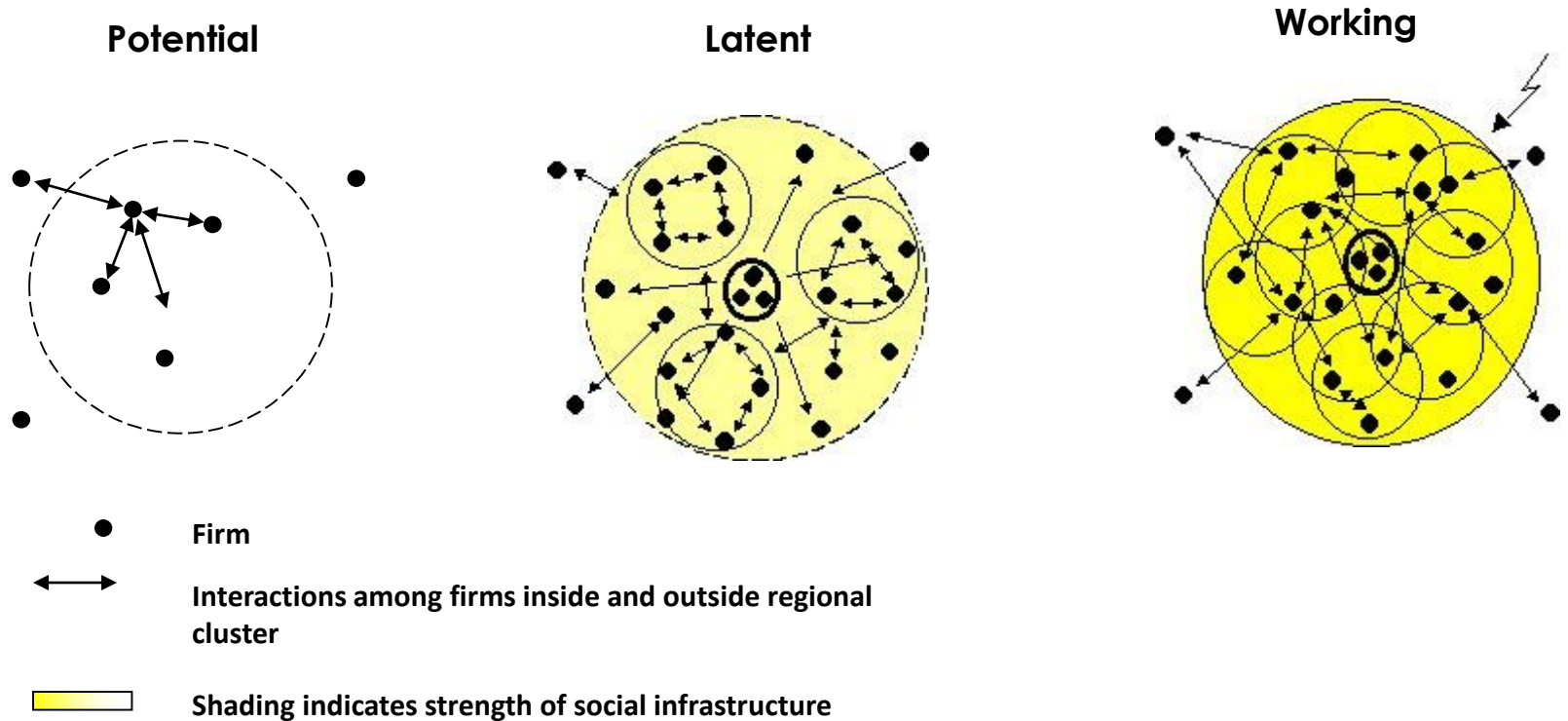
Australia, the Brand - a tourism cluster



Scales of policy action

- Cluster policies taken up a core element of industrial and innovation policies, but not always labelled as such
- National cluster policies
 - Foresight, Mega-clusters, Cluster as policy tool
- Regional clusters
 - Regional Development Agencies, RIS/RITTS initiatives
 - Turning sectoral strategies into clusters?
- Local clusters/micro clusters
 - Local authority initiatives
 - Building on company networking

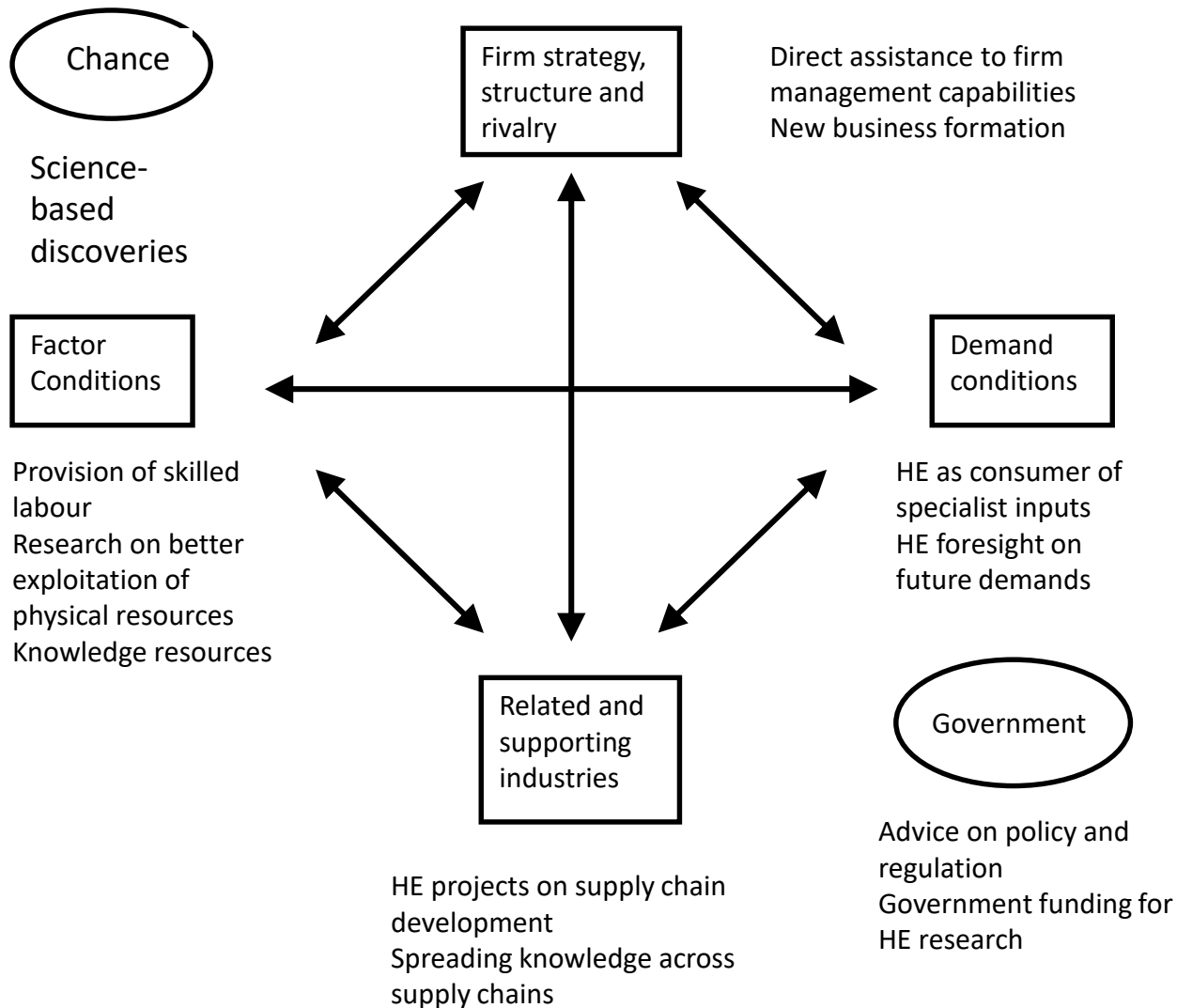
Cluster development - micro/meso interaction



UK policy on clusters and universities

'The role of our universities in the economy is crucial. They are powerful drivers of innovation and change in science and technology, the arts, humanities, design and other creative disciplines. They produce people with knowledge and skills; they generate new knowledge and import it from diverse sources; and they apply knowledge in a range of environments. They are also the seedbed for new industries, products and services and are at the hub of business networks and industrial clusters of the knowledge economy.' (DTI/DfEE, 2001)

Universities and clusters



University commercialisation strategies

- Dilemmas of diversity of knowledge
- Need for specialisation in commercialisation
- Combining responsiveness and opportunity-seeking with focus and business development
- Specialist centres and cluster discourses as means to resolve dilemma

Scale of university engagement with clusters

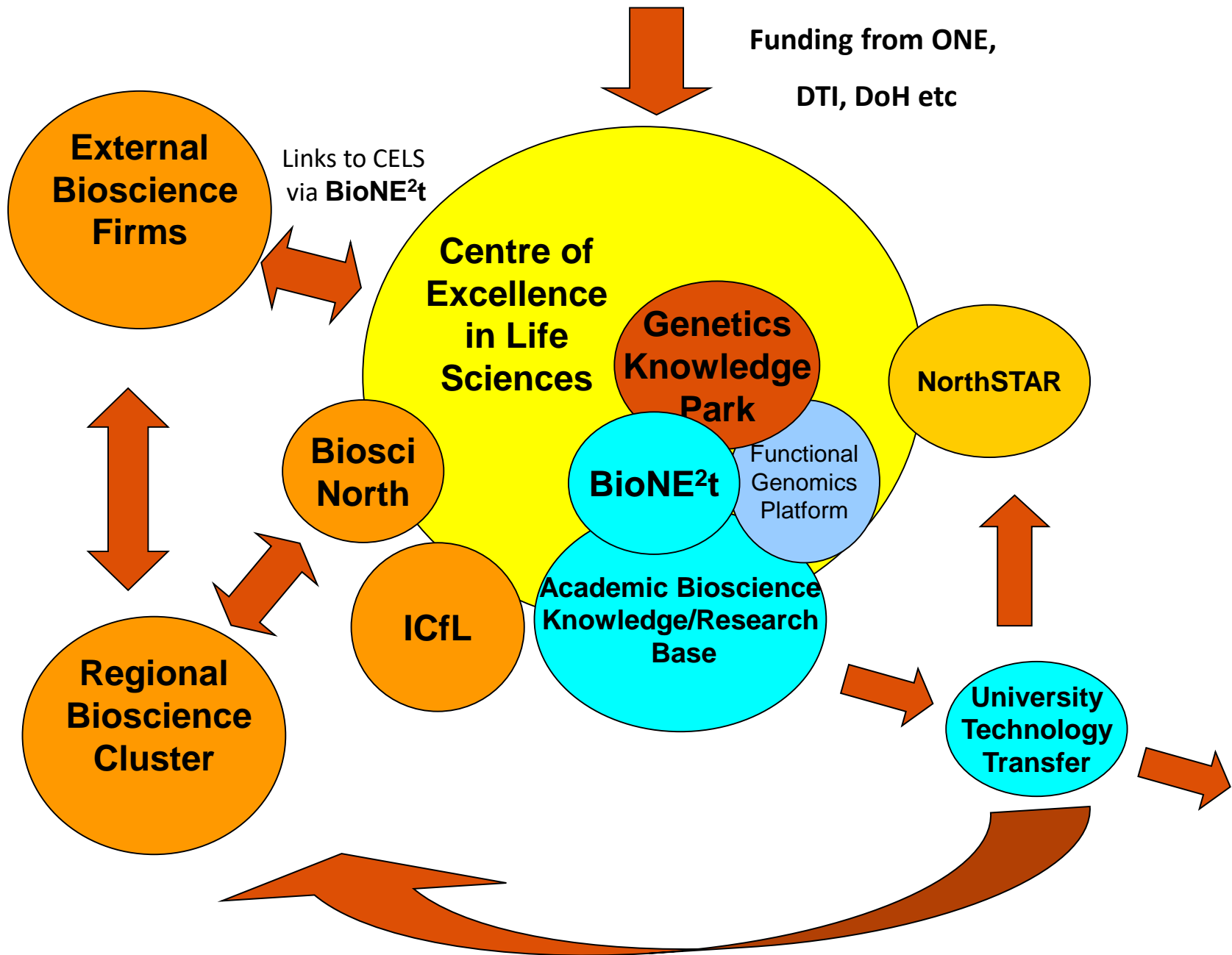
- National – national research programmes and centres of excellence
- Regional – RDA initiatives with dedicated cluster programmes
- Local/micro-clusters – small scale initiatives with local funding or university-initiated
- Internal to the university – structures for industrial liaison or research organisation

North East England cases

- National – central government initiatives, university innovation centre for nanotechnology
- Regional – ONE clusters and centres of excellence
- Local/micro-clusters – local initiatives, Digital Media Network
- Internal to the university – Newcastle HEROBaC programme and restructuring

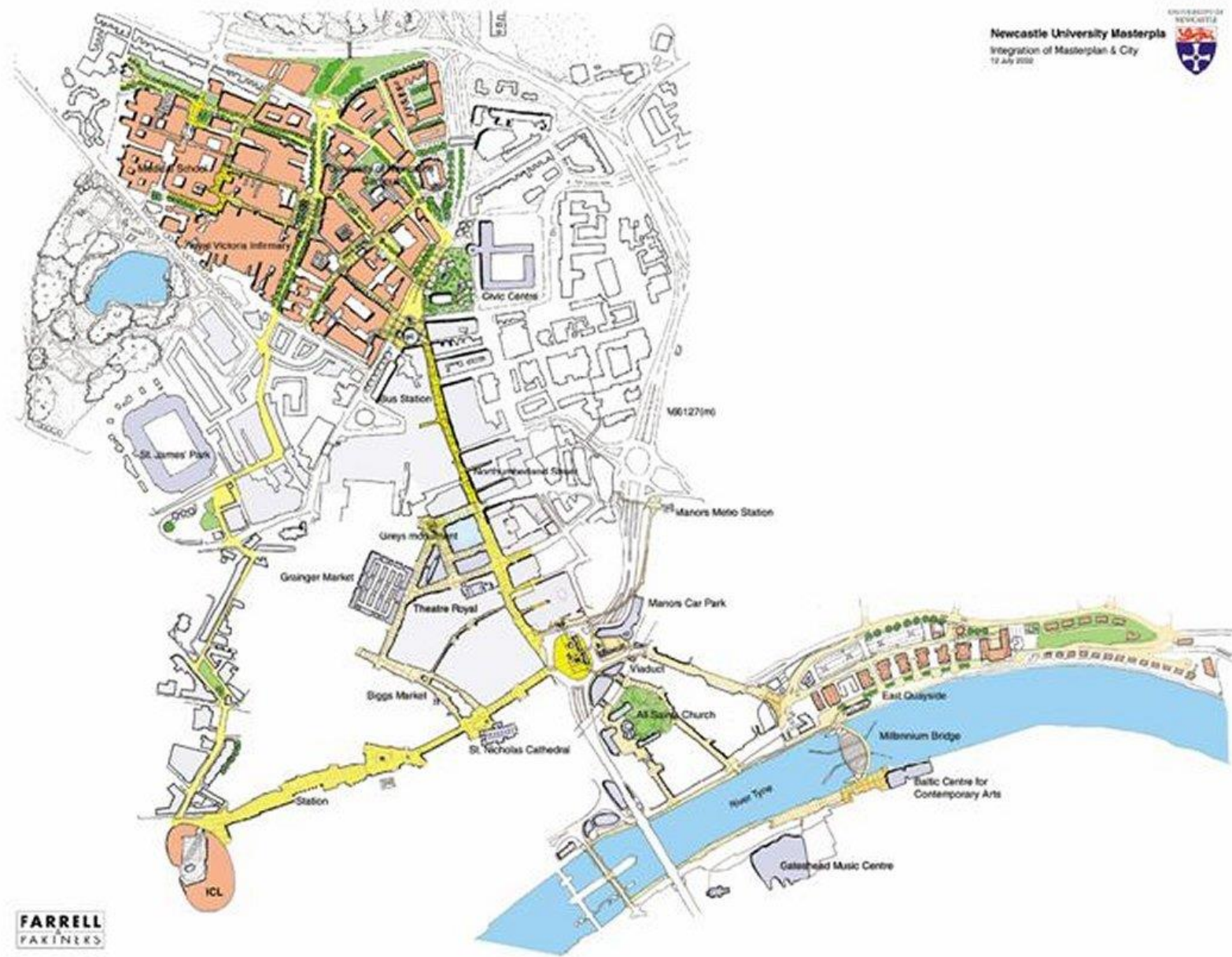
ONE - Strategy for Success

- Science and Industry Council
- 5 centres of excellence
 - New and renewable energies
 - Life sciences
 - Process industries
 - Digital media
 - Nanotechnology, microsystems and photonics
- NorthSTAR



International Centre for





Significance

- Universities being enrolled by regional agencies on cluster initiatives at unprecedented scale. Universities also shaping agenda
- Universities assembling portfolios of funds for networked support programmes
- Regional agencies convinced of importance of universities to clusters. Move to a regionally-coordinated system, but aimed at international excellence
- The regional agenda is not necessarily linked with 'sub-national quality – see US universities

Comparisons with Australia

- State level intervention and growing interest at Commonwealth level
- Queensland 'Smart State' strategy
- Prioritisation of growth 'sectors'
- Biotechnology and ICT, but also advanced mining, 'new era' foods
- Local level interest in micro-clusters
- Universities seeing reduction in proportion of core funding

Queensland support for biotechnology

- Bioindustries Taskforce
- Establishment of the Institute for Molecular Bioscience (IMB) at the University of Queensland, and attracting key researchers
- Establishment of a Centre for Biomolecular Science and Drug Discovery and research commercialisation centre at Griffith University
- Bachelor of Biotechnology Innovation degree at QUT
- Centre for Immunology and Cancer Research at Princess Alexandra Hospital
- BioStart initiative to encourage and support start-ups
- BioLink networking program
- Supporting missions to major biotechnology conferences
- International biopartnering initiatives
- Government-wide mechanism to identify the key priorities for R&D spending

Culture and creative industries in Brisbane

- Growing cultural and creative sector
- Physical development on riverside
 - South Bank
- Adjacent university developments
 - QUT, Griffith
- QUT Creative Industries strategy

Creative Industry Precinct



Creative industries

- Precinct with teaching facilities, wired exhibition space, black box performance space, art house cinema, enterprise centre, CIRAC, studios for design and animation, performance and music, visual arts, sets and props
- Office and workshop space for firms
- Linked with City Council emerging industries strategy
- Wider state film and tourism developments
- Au\$ 5 bn industry

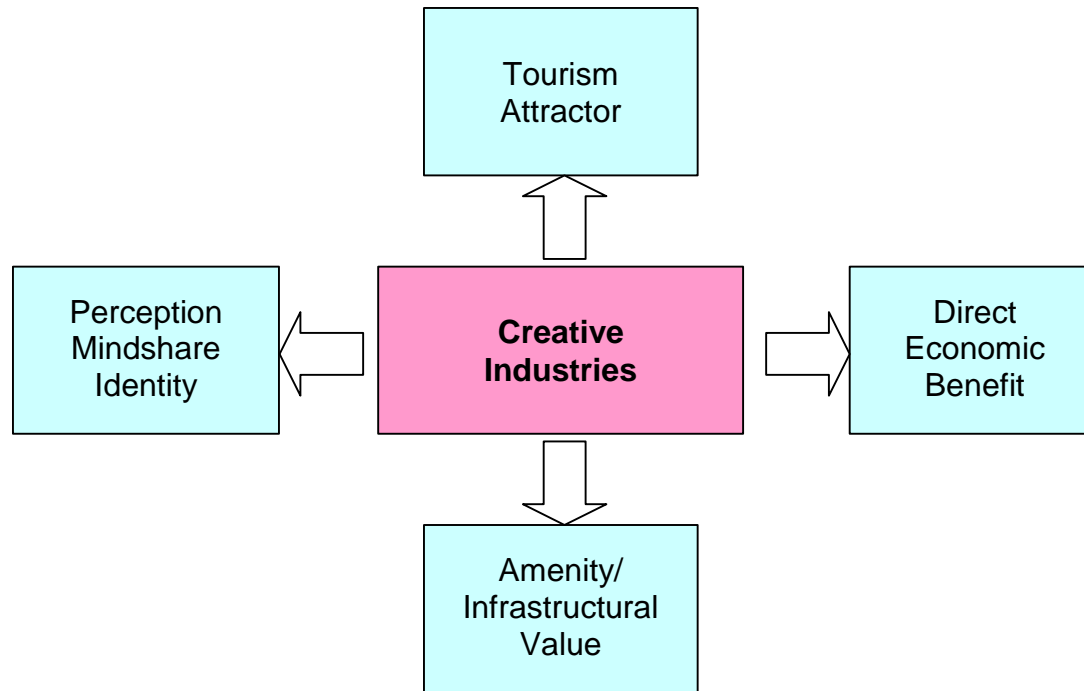
Conclusions on universities, regions and clusters

- Overcoming problems of fragmentation of university initiatives
- Focus on future opportunities for regions and for universities to play a leading role
- Mechanisms to identify priorities – importance of universities in regional governance structures
- Shift in notion of success from attraction of firms to the capacity for regional clusters to evolve and be self-sustaining

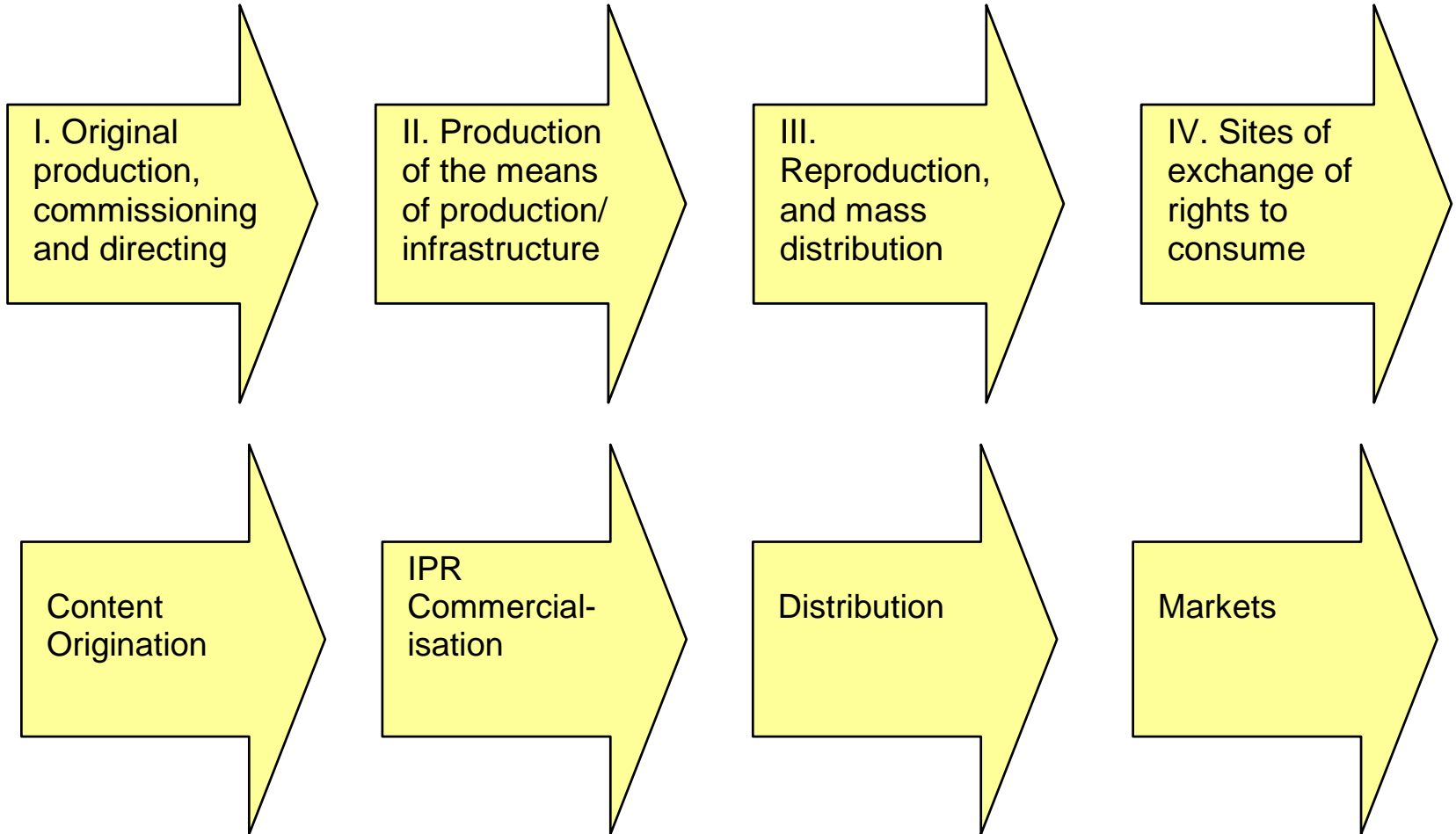
Creative Industries

Those activities which have their origin in individual creativity, skill and talent and which have the **opportunity for wealth and job creation** through the generation of **intellectual property** (DCMS, Creative Industries Mapping Document, 1998, page 3)

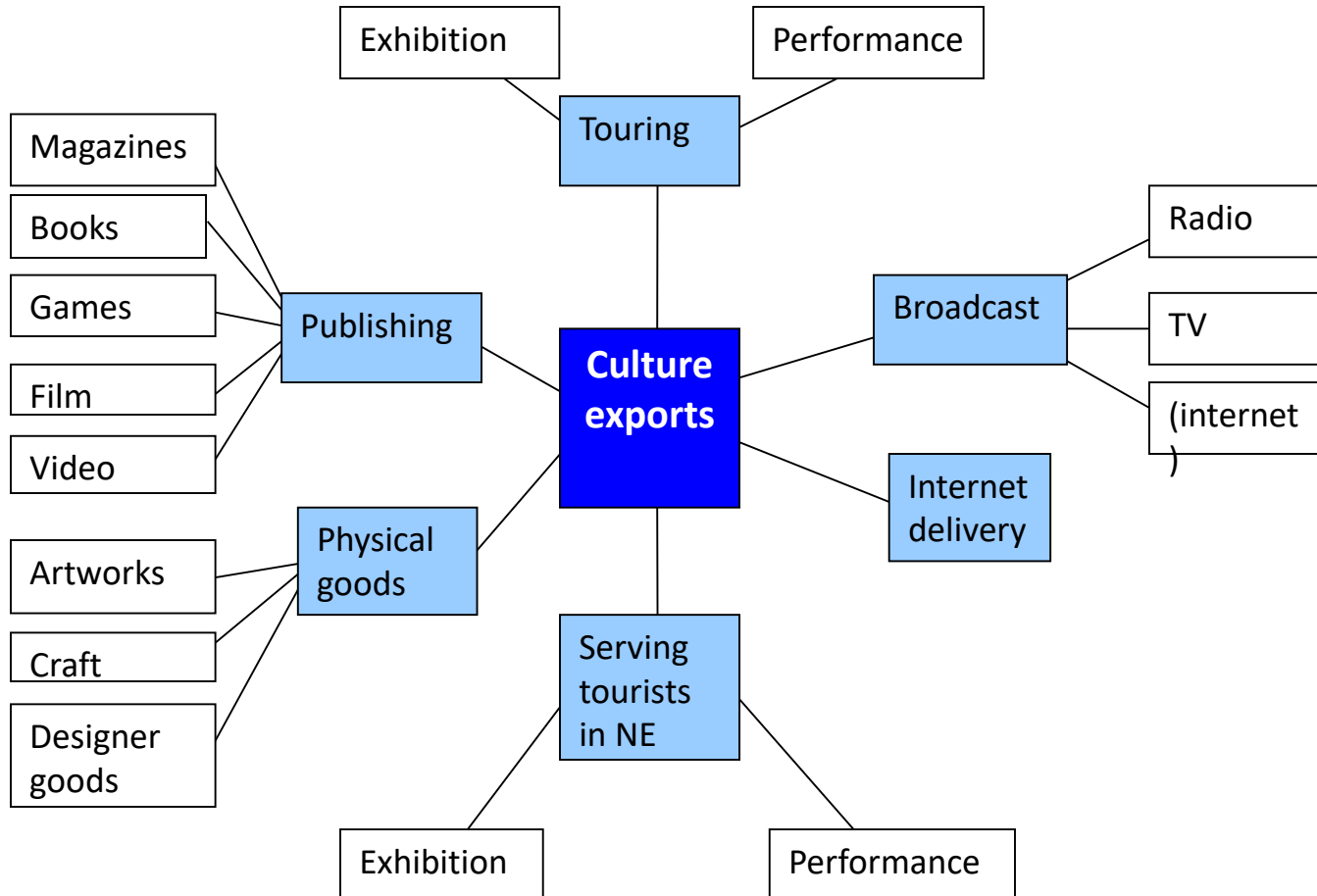
Economic Significance of CIs



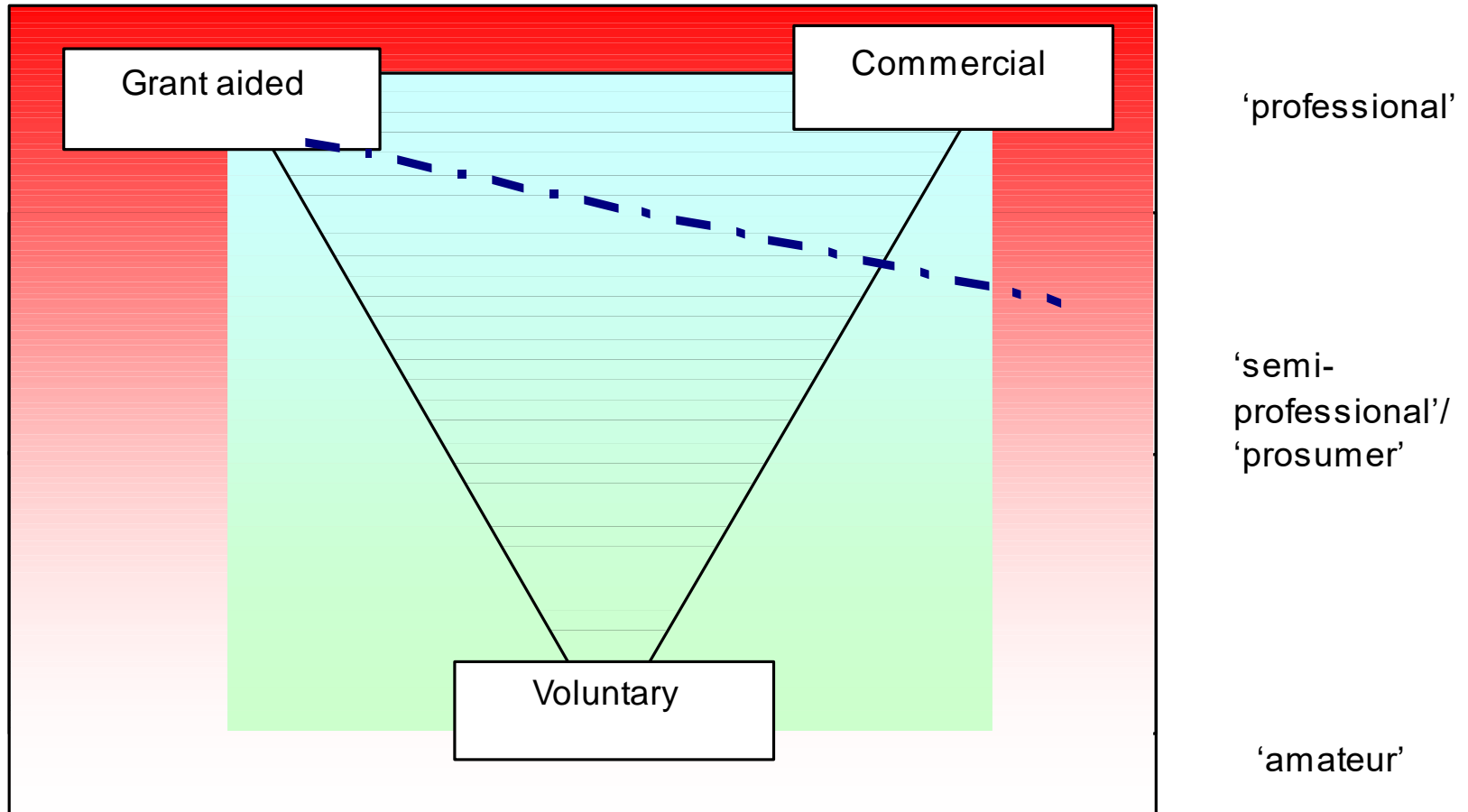
Production System



Culture exports



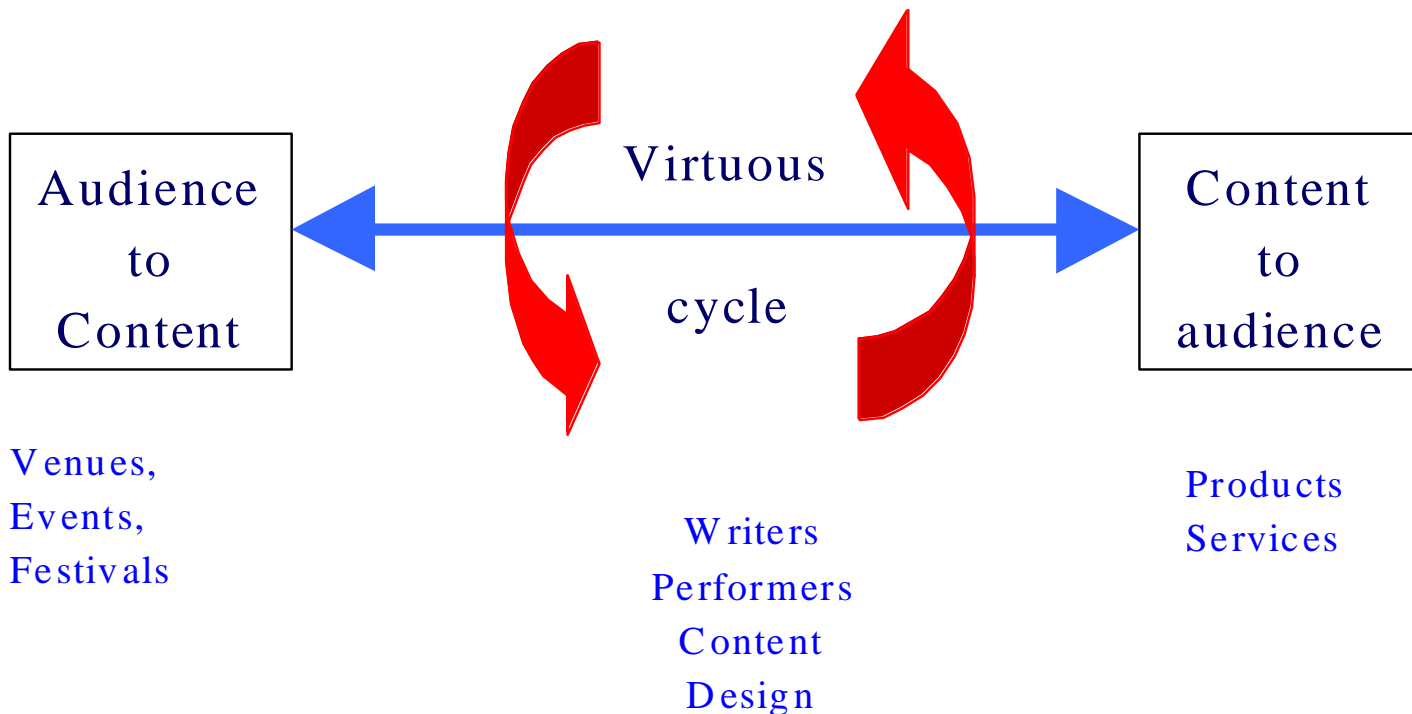
A Three Legged Stool?



A spectrum of activities...

Tourism
Entertainment

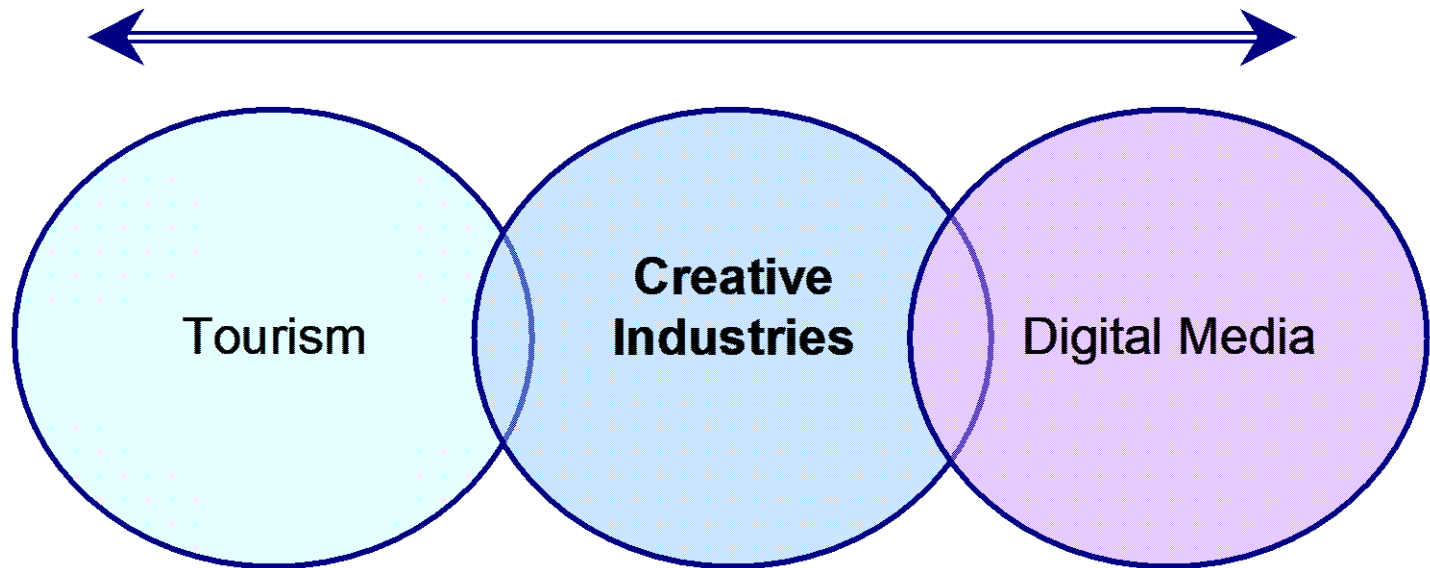
Distribution
Broadcasting
New Media



... in a wider context

Heritage Cafes Restaurants Theatre
Museums Galleries Live Music/Dance

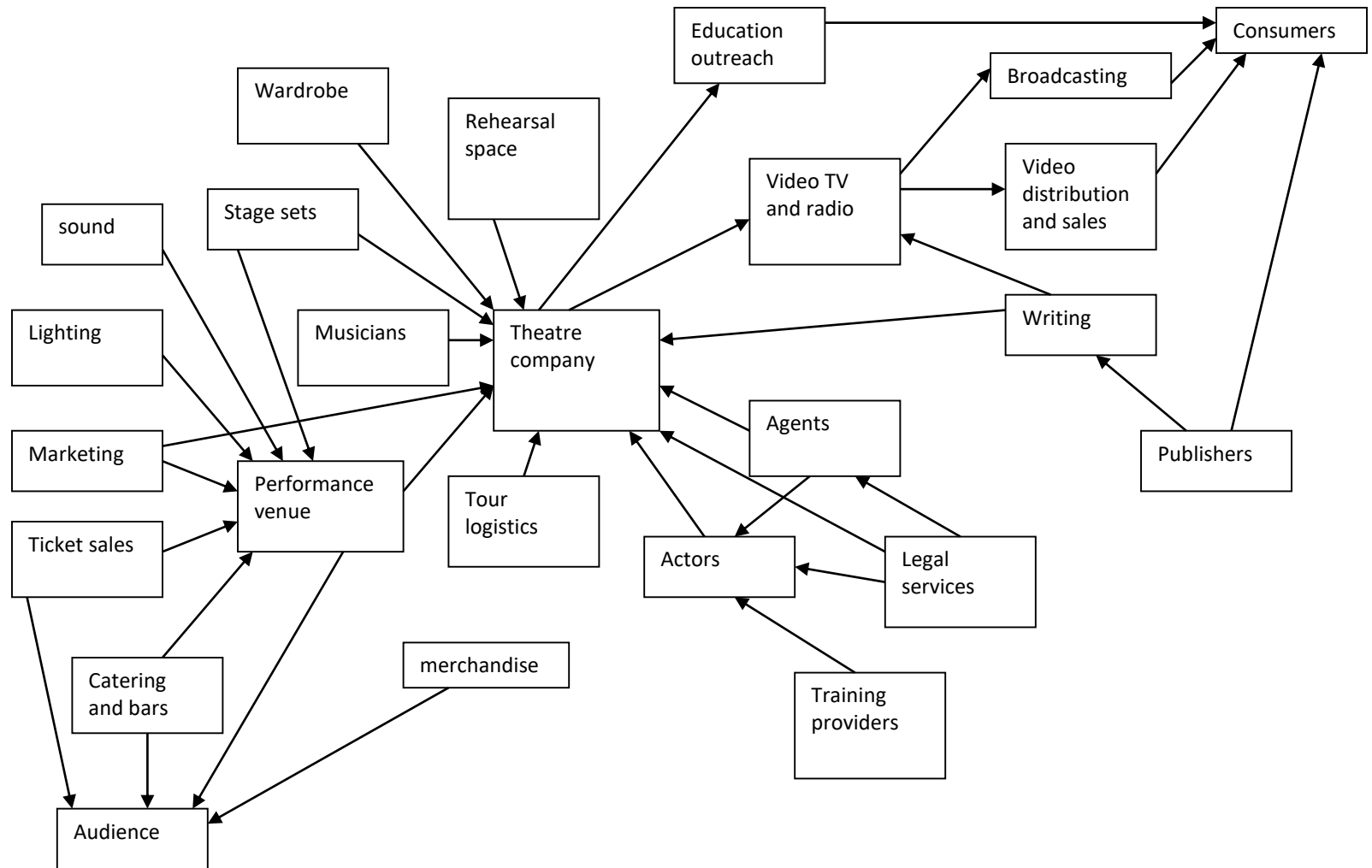
Radio Internet Publishing
Television Multimedia

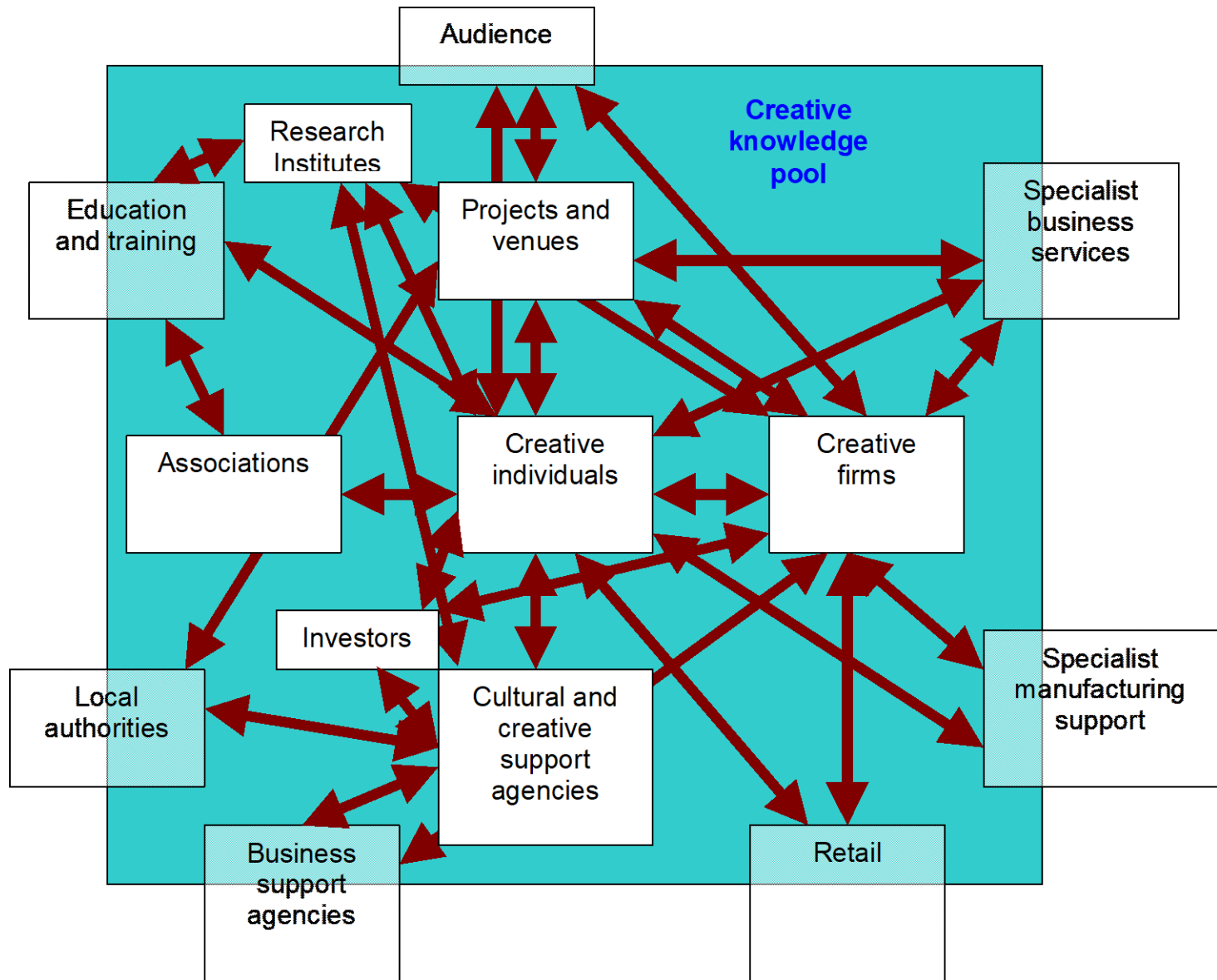


Audience to
Content

Content to
Audience

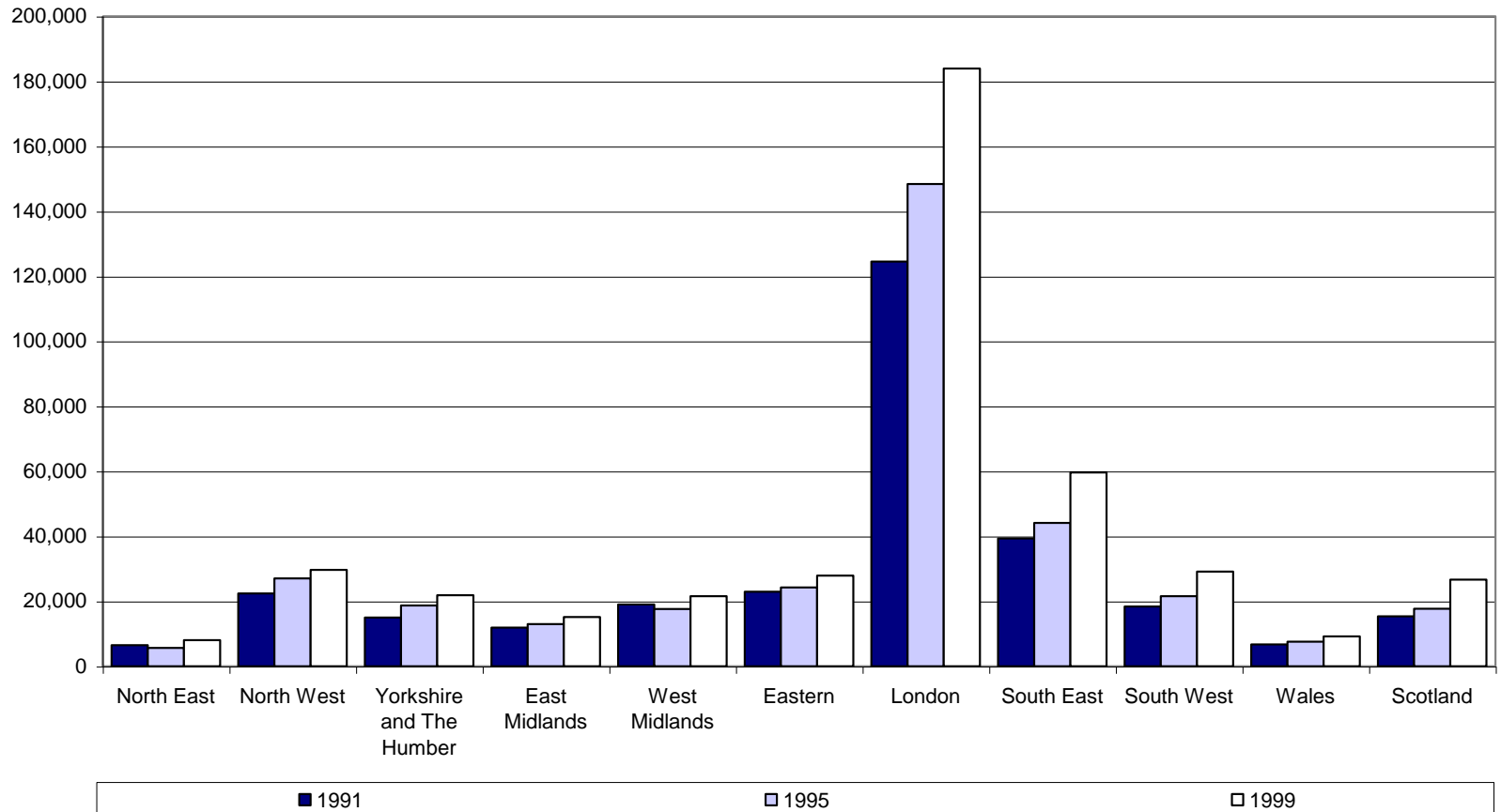
Theatre/performance cluster





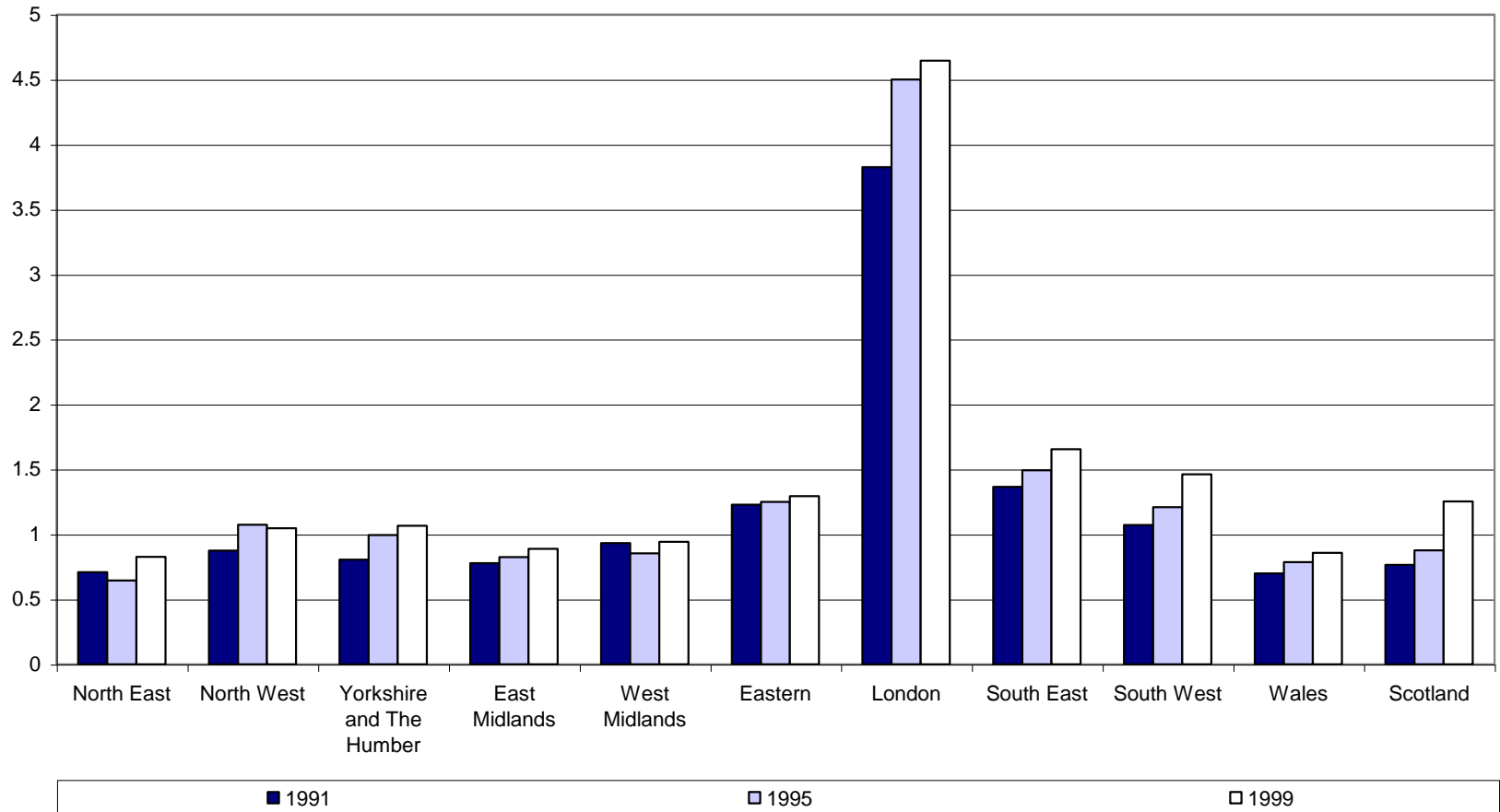
Regional distribution of employment

Content Origination (omitting Software Consultancy and Supply) by GOR

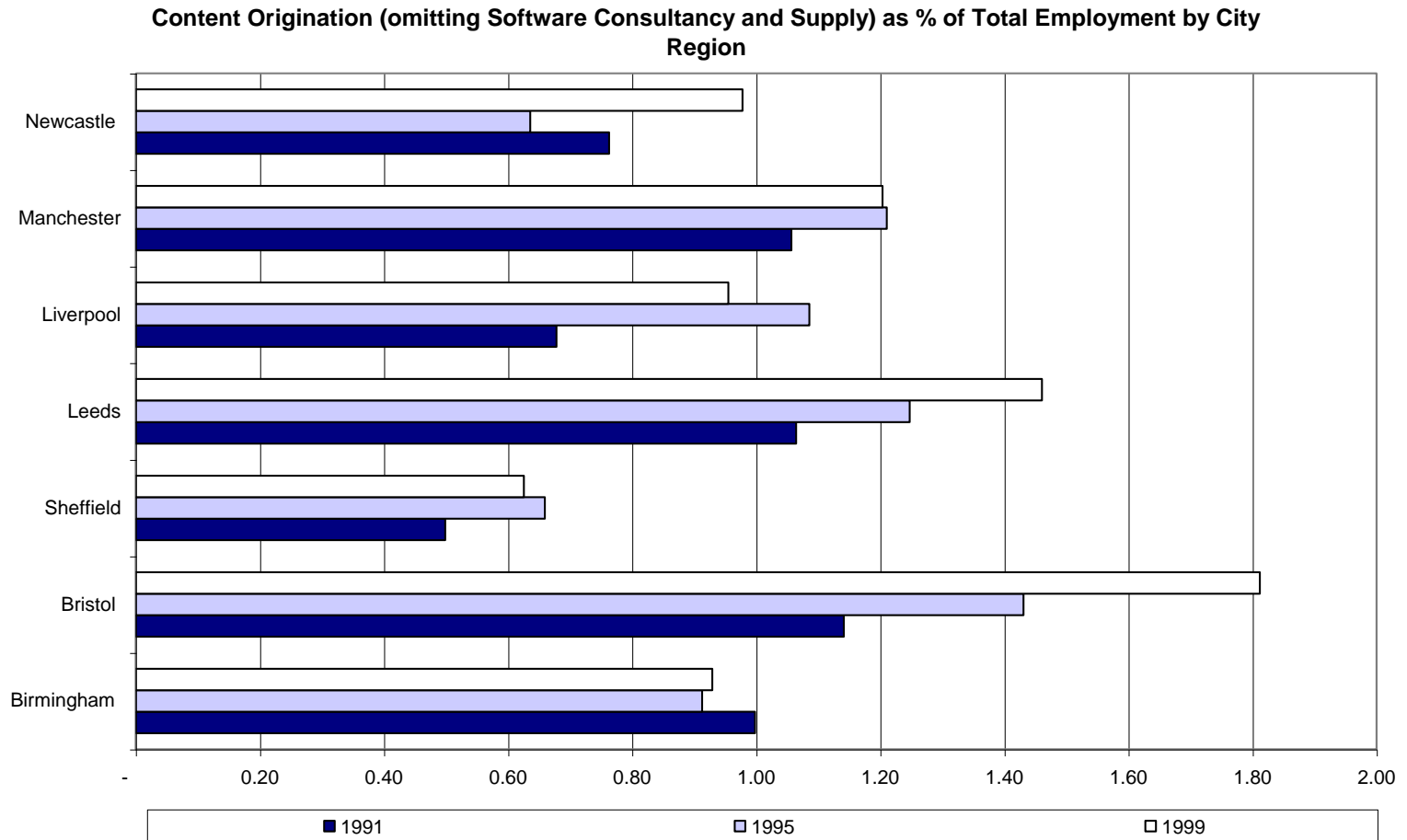


Proportion of employment

Content Origination (omitting Software Consultancy and Supply) as % of Total Employment

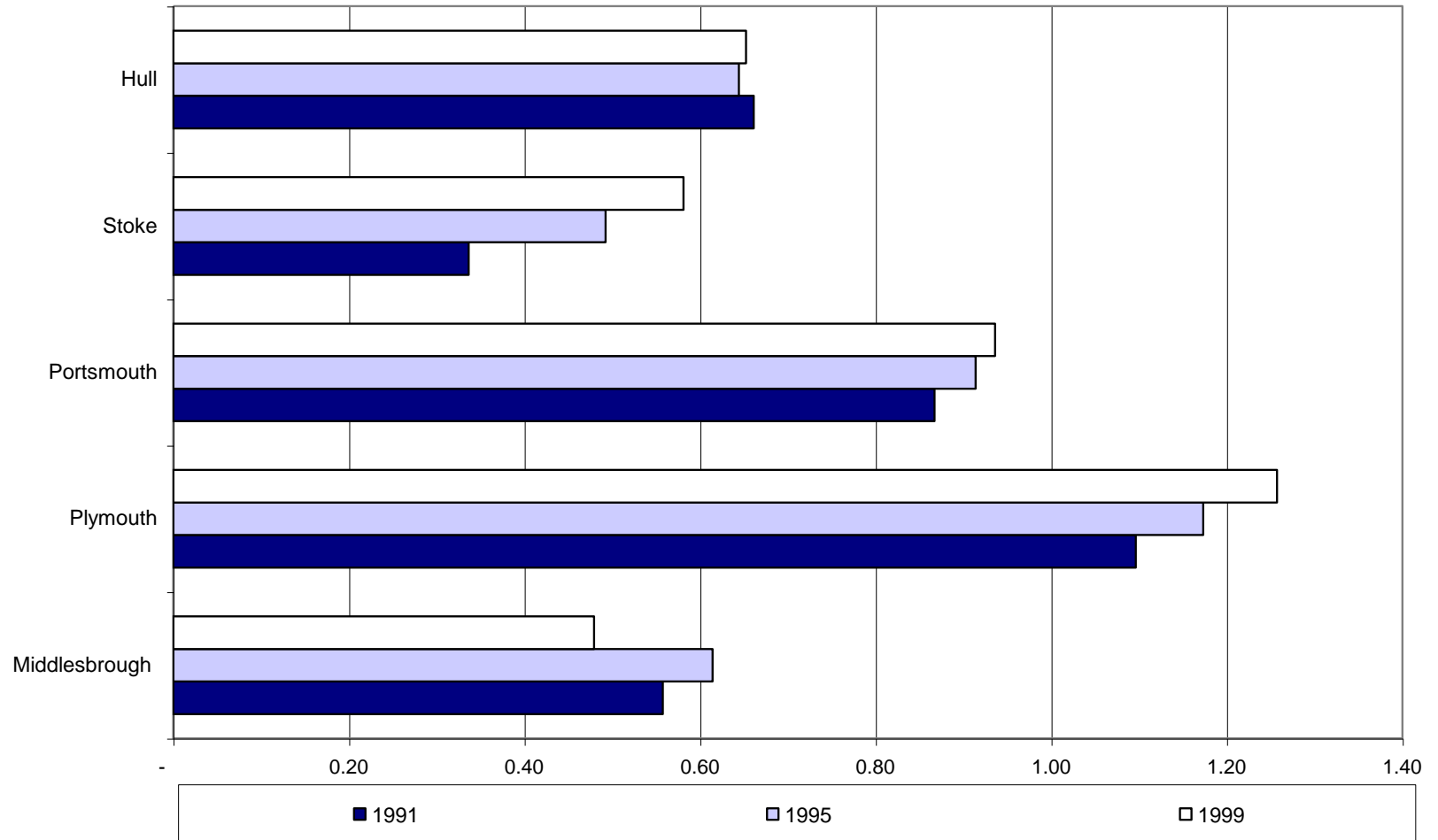


Newcastle and other core city regions

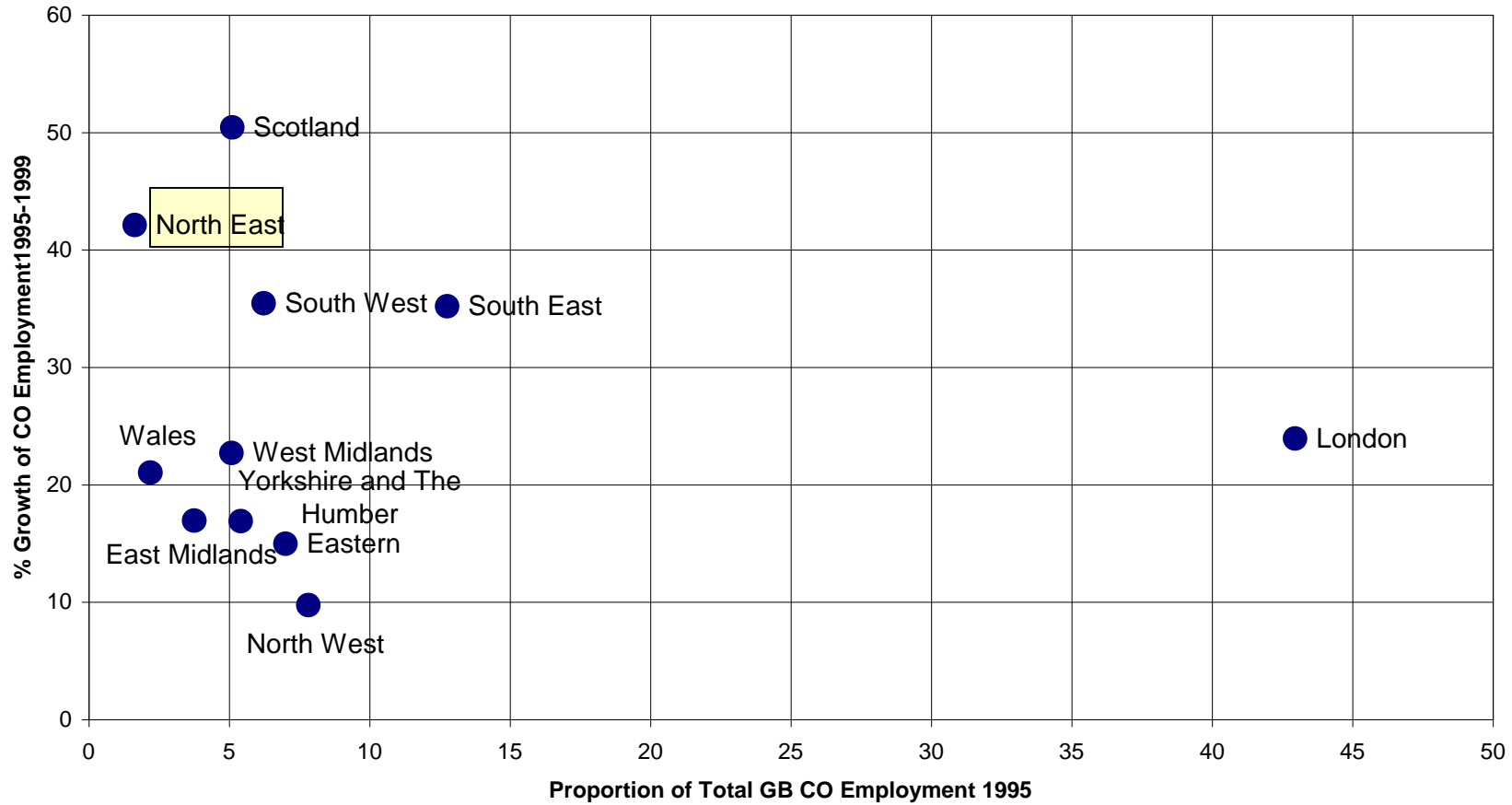


Middlesbrough and comparators

Content Origination (omitting Software Consultancy and Supply) as % of Total Employment



Critical Mass and Growth in Content Origination (minus Software Consultancy and Supply) 1995-1999



1991-1995	Grows		<ul style="list-style-type: none"> • Core Arts (Artistic and Literary Creation and Interpretation, Art facilities) • Publishing • Other Business Activities Not Elsewhere Classified (includes some design) 	
	Static		<ul style="list-style-type: none"> • Radio Television and News Agencies 	
	Declines	<ul style="list-style-type: none"> • Manufacturing (Jewelery, Imitation Jewelery, Musical Instruments, Games and Toys) • Architectural and Engineering Activities 	<ul style="list-style-type: none"> • Film and Video Production, Distribution and Exhibition • Advertising • Photographic Activities 	
		Declines	Static	Grows
1995-1999				

How others see the North East

- DCMS: *Creative Industries the Regional Dimension* (2000)
 - CI's (DCMS minimum set) employ around 17,000, 1.9% of regional workforce (cf. 4.3% GB)
 - High proportion of SMEs, esp. Microbusiness, and part-timers
 - Region is small (lacks critical mass?)
- Trends Business Research, *Business Clusters in the UK: A First Assessment* (2001)
 - The region's position in the creative industries such as TV, film, advertising and fashion is limited, although in common with other regions niche opportunities are being developed

Conclusion on NE culture

- Not yet a cluster of competitive advantage but...
 - Strong growth in core content origination over last decade
 - Increasingly professional support infrastructure and key hubs for development (NCSP, NGC, NWN, Generator, CBV,...)
 - New investments (Music Centre, Baltic, Middlehaven, ...)
 - Core strengths in 'storytelling' and 'visual art' + some narrow niches (e.g., folk music, glass)
 - and some evidence of micro and location-based "clustering" (e.g., COBALT, Ouseburn, Pink Lane)

Issues for policy (1)

- Combining cluster policy scales
- Cluster analysis and cluster policies
- Permeable boundaries of cluster policy
- Attention on the negative effects of policy
- Customised mixes of policies
- Frameworks for policy co-ordination
- No standard recipe

Issues for policy (2)

- Policies vary with stage in lifecycle
- Avoid high tech myopia
- Avoid standard cluster models and tools
- Balance between new and existing clusters
- Importance of experimentation and learning
- Persuasiveness and perseverance

Reference and source

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