

Britain catches up with clusters

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- Narrative on clusters as an economic development methodology in the UK
- Introduction to the current UK Cabinet and DTI activity
- Some technical and measurement aspects

leading to general discussion of tools, priorities and agendas

I

Clusters for economic development in the UK

National and Regional streams

Clusters for ecdev :

National and Regional streams

- Ancient history : Marshall (1890)
 - basic familiarity, tho' not only lost but **rejected** in favour of more Fordist/Corporatist models
- UK chapter in CAON (Porter 1990)
 - Enright/Porter
 - Thatcherian rhetoric, *The Economist*, and OIL
- Attempts to engage later Conservative Ministers/Governments were not obviously successful
- Little academic work on clusters and most of that focused away from UK

Things could only get better ...

- Mandelson saw Silicon Valley and it worked
- Competitiveness White Paper
- Ongoing focusing of DTI under Byers
- Sainsbury as New Model Minister, Harvard alumnus ...
- Biotech study
- Oxbridge phenomenon (?Jenkins)

Meanwhile in the ~~Provinces ...~~

~~Countries & Regions~~

Scotland

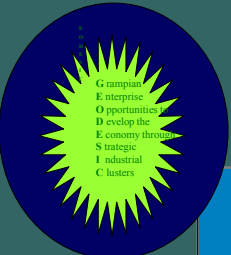
Political background:

- Widespread and steady devolutionist sympathy, and intermittently Nationalist upsurges
- After Poll Tax fiasco, near-doomsday for UK Conservatives
- A degree of administrative autonomy, and pre-existing (1945/75) economic development institutions with significant resources (1% GDP)

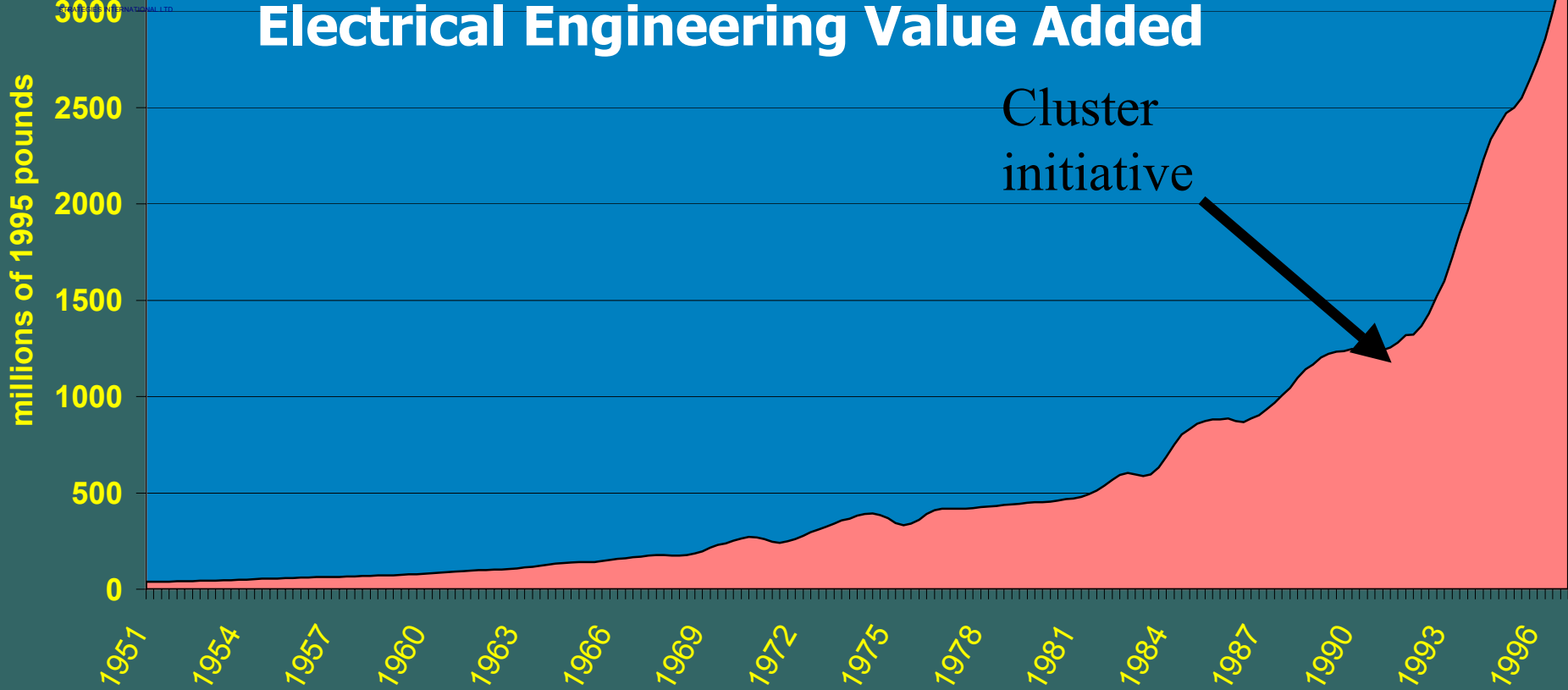
The Competitive Advantage of Scotland - 1991/93

- First rigorous application *anywhere in the world* of Porter below the Nation State
- Enabled a sophisticated multifaceted approach to the development of electronics and related industries
- Proposed an agenda for other clusters

Clusters work for Scotland



Electrical Engineering Value Added



**FIRST CLUSTER INITIATIVE PAID OFF
AT LEAST A HUNDRED FOLD**

But it didn't fit ...

- Even as the approach and the agenda were abandoned for ideological reasons

they enabled a vestige of 'industrial' competence to survive in the Development Agency at a time when when 'industry policies' were *non grata*

Parallel game & Canadian interplay

- Very local variants
(Inverness>Shuswap>Okanagan)
- Methodology and model development
(GEM, cluster maps, regional a/cs)
- More formal links with innovation systems analysis

and then, when things got better ...

post May 1997 ...

- Four formal initiatives
 - semiconductors
 - food
 - biotech
 - oil & gas
- and then
 - optoelectronics
 - chemicals
 - creative industries
 - tourism
 - telecommunications
- but now (2000/2001) the role and status of Agency changing as Government adjusts to devolution

II

CURRENT UK ACTIVITY

(ie, the Feds)

National activity

- Committee reporting to Cabinet
- DTI cluster mapping
- Competitive funds for New RDAs
- Review meeting on 8/9 March

DTI STUDY

- Political context of English devolution/development agencies
- Formally 'cluster mapping'
 - LOGICAL maps or
 - GEOGRAPHICAL maps?
- First availability of 5-digit data outside **government service** (NB Britain' ONS does not have the analytical resources found in some statistical administrations such as StatsCan, Norway's SSB)

PORTERIAN DEFINITION - FOUR APPROACHES

- Competitiveness
- Concentration/ co-location
- Linkages
- Administrative/ political

Competitiveness approach

- Identification of UK competitive highspots
 - Updated Porter by 12 IMPORTANT 'post-oil' years
 - New measures of competitiveness
 - Localisation of those highspots
- BUT**
- ...analytical focus entailed political discomfort
(not enough UK clusters to go round!)

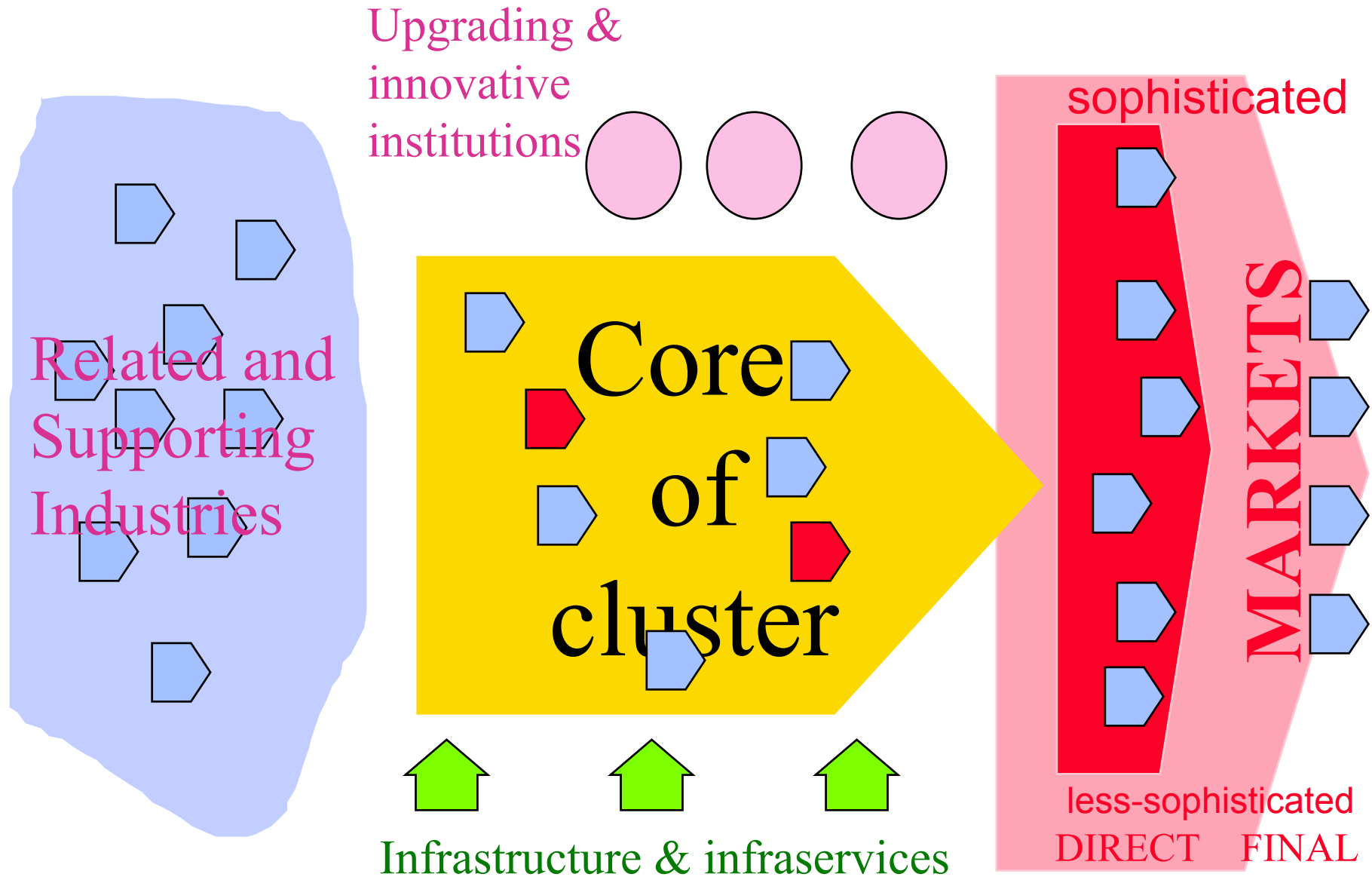
Concentration/ co-location

- Spatial analysis harder than expected
- Not tractable at 5-digit level
- Results at 4 digit level (= 504 industries) tended to emphasise traditional location patterns
- Counter-intuitives/ oddballs tended to shake laypeople's faith in data/methods rather than suggest interesting innovations or linkages

LINKAGES - IO tables therefore **traded**

- Measured distinctiveness
 - REDUCING DENDRITIC ALGORITHM determines cluster structure
- Measured significance for mapping
- Implied tacit linkages from similarities of input/output patterns
- Linkage strength vis-a-vis world
(requires 'world' IO table)

Generic cluster map



IMPORTANT ANALYTICAL CONCLUSION

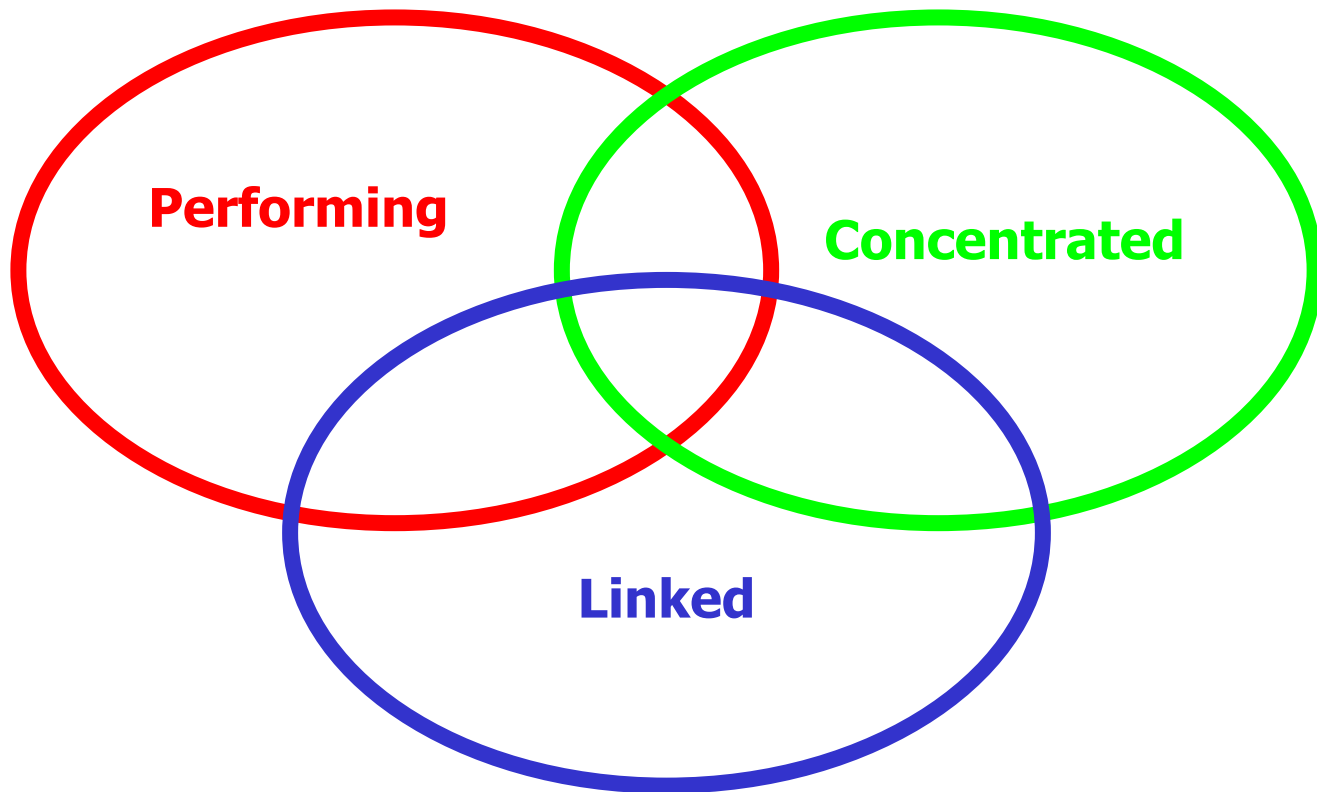
from three analytical methods

- There is a clear correlation between competitiveness and degree of linkage within the national economy

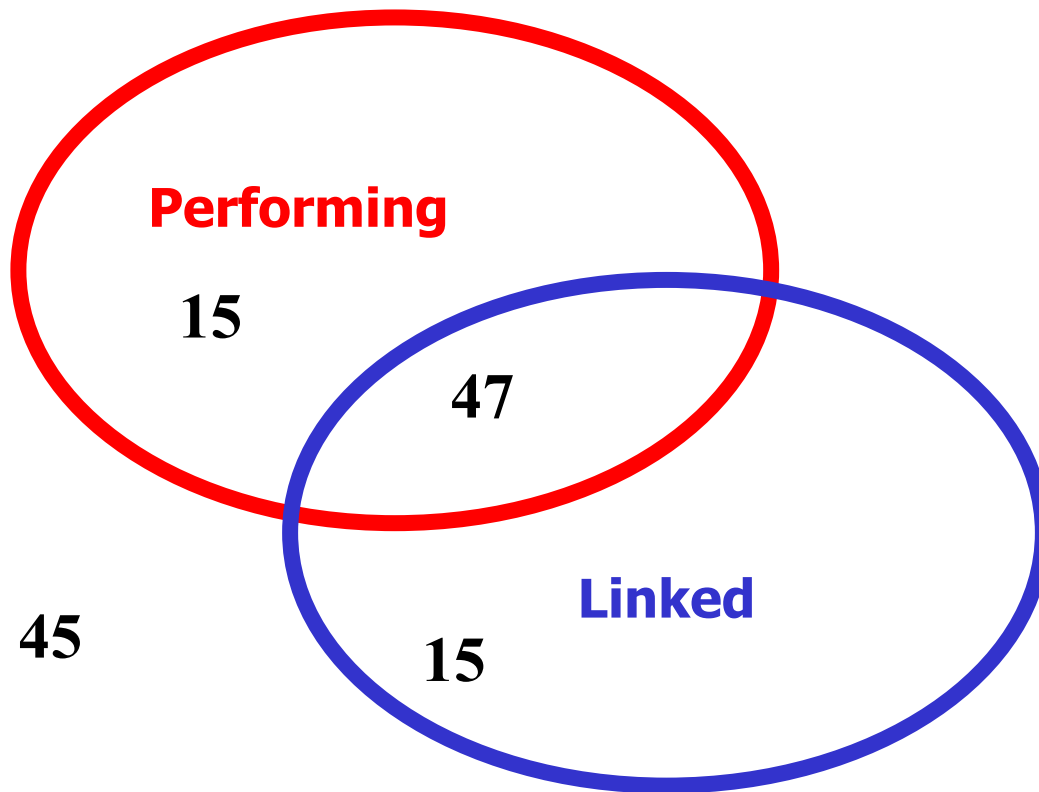
BUT

- NO *overall* evidence that geographical concentration within the UK affects performance

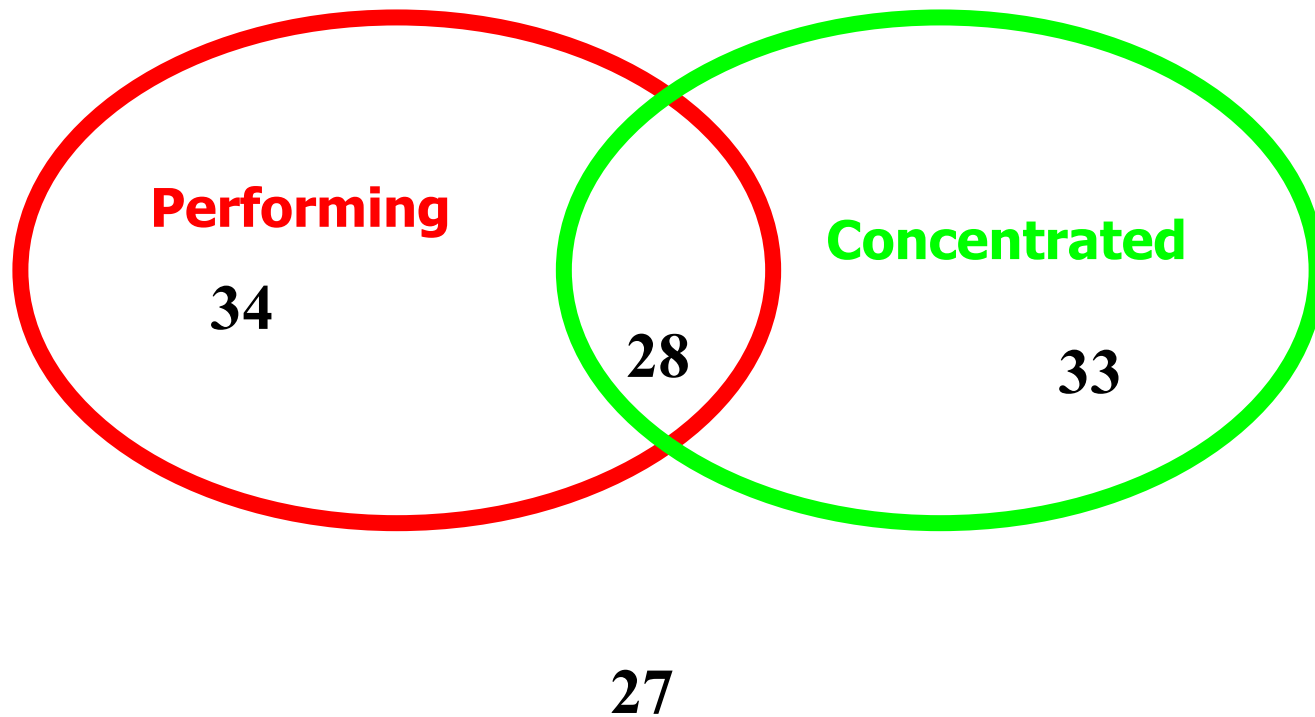
122 industries were dichotomised



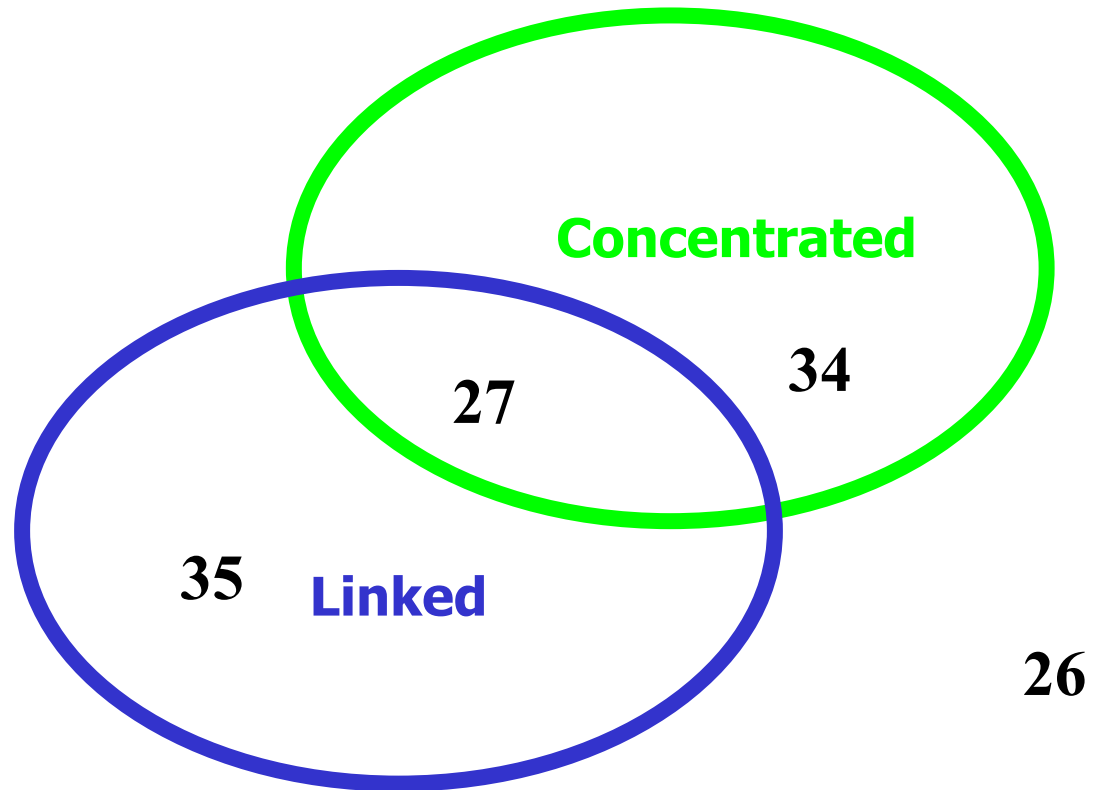
clear correlation (0.8) between
competitiveness and degree of linkage



no obvious correlation between geographical concentration and performance



and even no obvious correlation between geographical concentration and linkage



Administrative/ political

- employment concentrations 'round the regions'
- Issues of machismo, wishful thinking and local chauvinism enhanced by
- new administrative environment and by
- competitive bidding
 - *"If your methodology doesn't find the five companies and 17 employees in our XXX cluster then it is totally discredited"*
 - *"Our region's aim is to house the world's leading biotech cluster and with the world class work of Prof ZZZZ at the New University of AAAA which began last year we are almost there"*

Regions have startlingly **uniform** aspirations ...
despite diverse *de facto* starting points ...
but nevertheless ...

- Cluster mapping has begun to enable a dialogue on regional industrial priorities

...widening the industrial perspectives of new political entities and ...

... in some regions stressing the useful message that mainstream as well as fashionable industries are important

A hot potato?

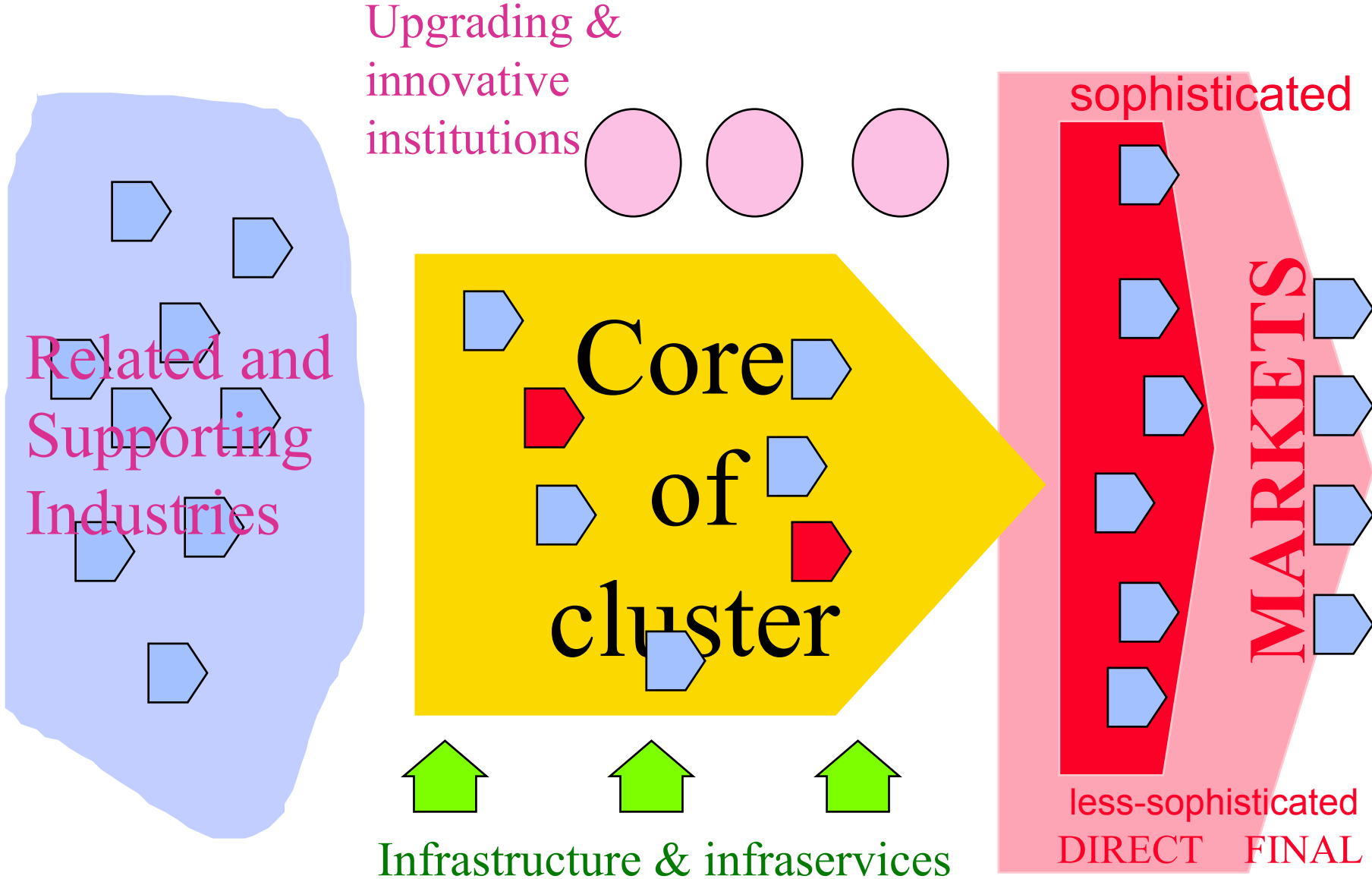
- Research funding mechanisms today follow
 - academic tradition
 - an even distribution (bums on seats)
 - stellar individuals/teams
- BUT NOT
 - industrial opportunities or needs

III

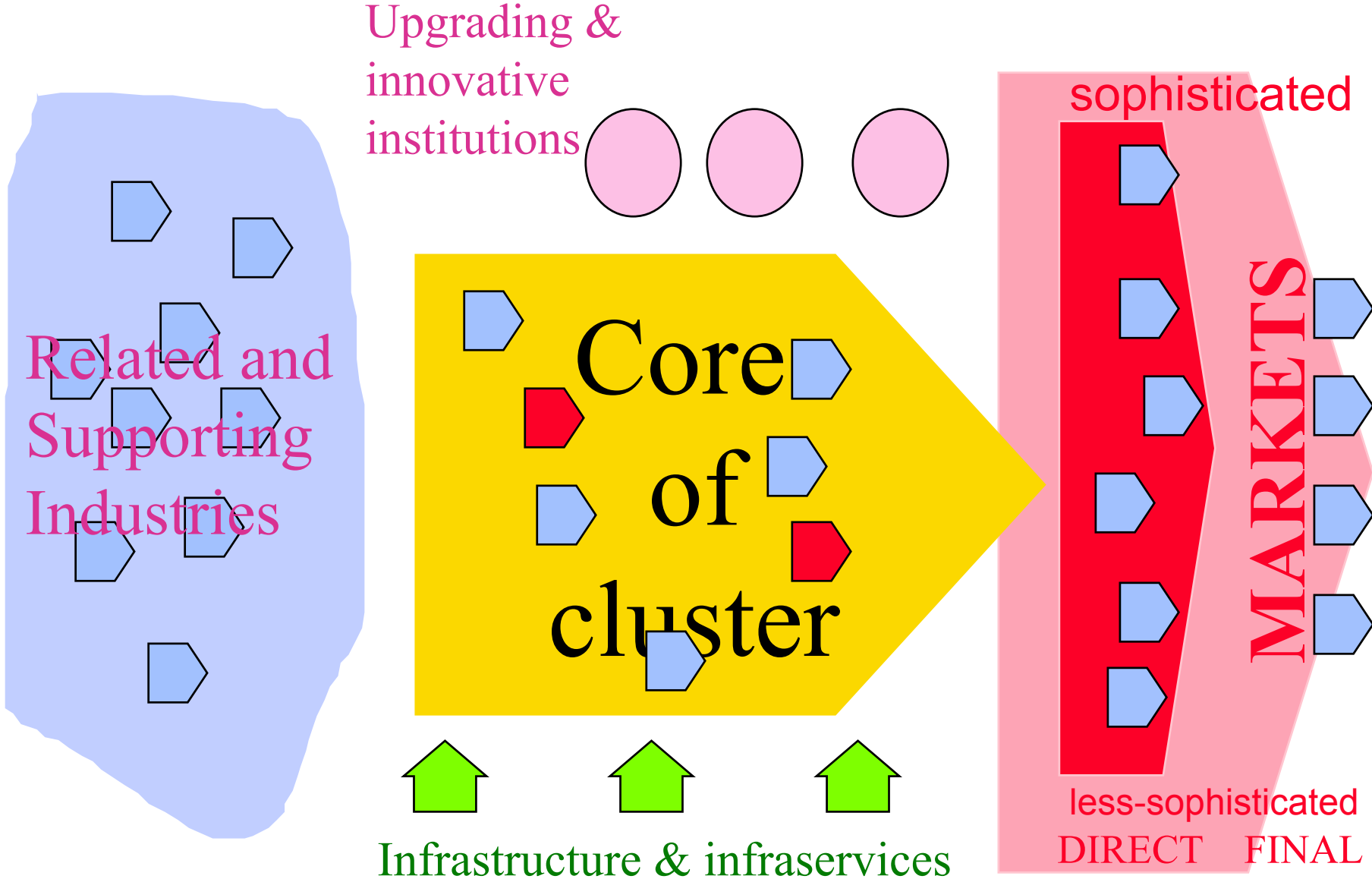
Some items from the
analytical toolbox ...

- Cluster Maps
- Cluster calibration/GEM
- 'World' GDP and IO tables
- Competitiveness on a global scale
- Linkage measurement
- Develop link with innosurvey & patent data
- Role of distance

Generic cluster map

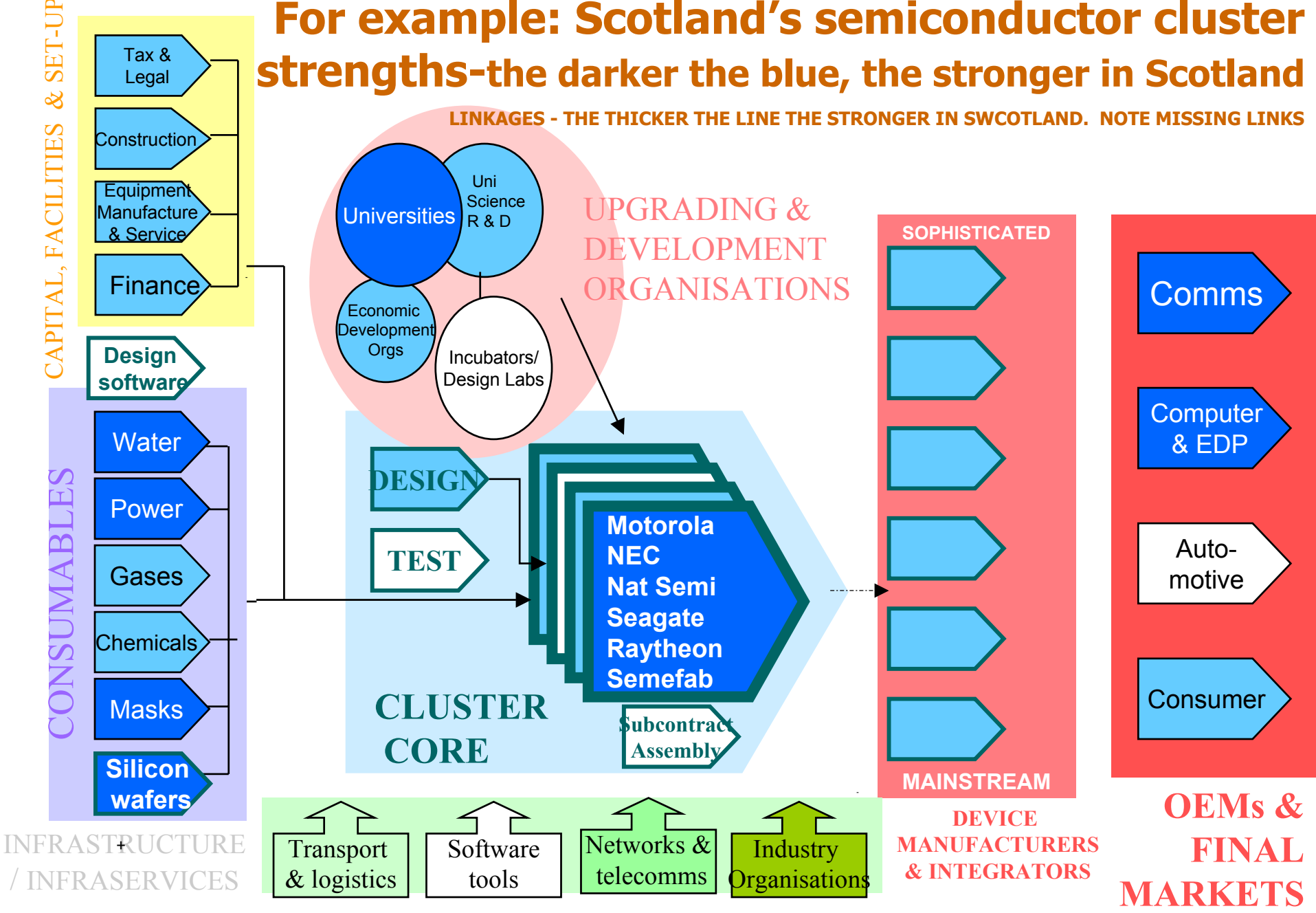


Generic cluster map



For example: Scotland's semiconductor cluster strengths-the darker the blue, the stronger in Scotland

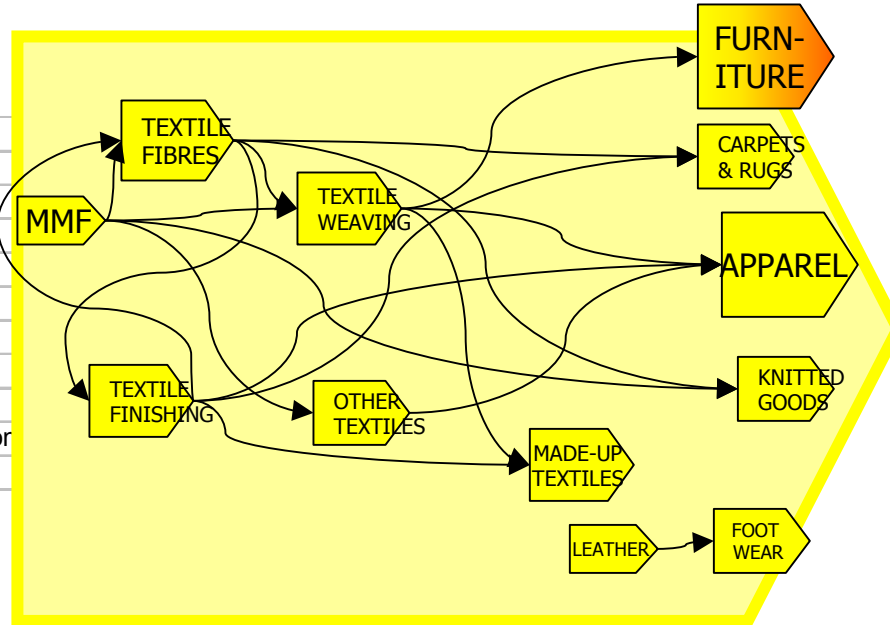
LINKAGES - THE THICKER THE LINE THE STRONGER IN SWCOTLAND. NOTE MISSING LINKS



Textiles

UPGRADING INSTITUTIONS?

- Agriculture
- Meat processing
- Pulp, paper and board
- Industrial gases
- Inorganic chemicals
- Organic chemicals
- Synthetic resins etc
- Rubber products
- Plastic products
- Electricity production and distribution
- Gas distribution



- Motor vehicles
- Other specialised industry users
- Retail/wholesale/garages

Misc industry

Households & individuals

INFRASTRUCTURES?

Telecommunications

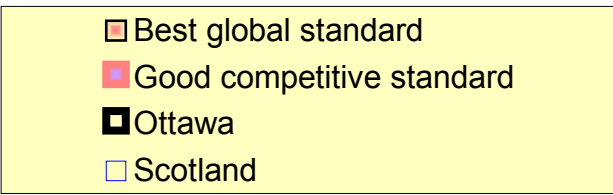
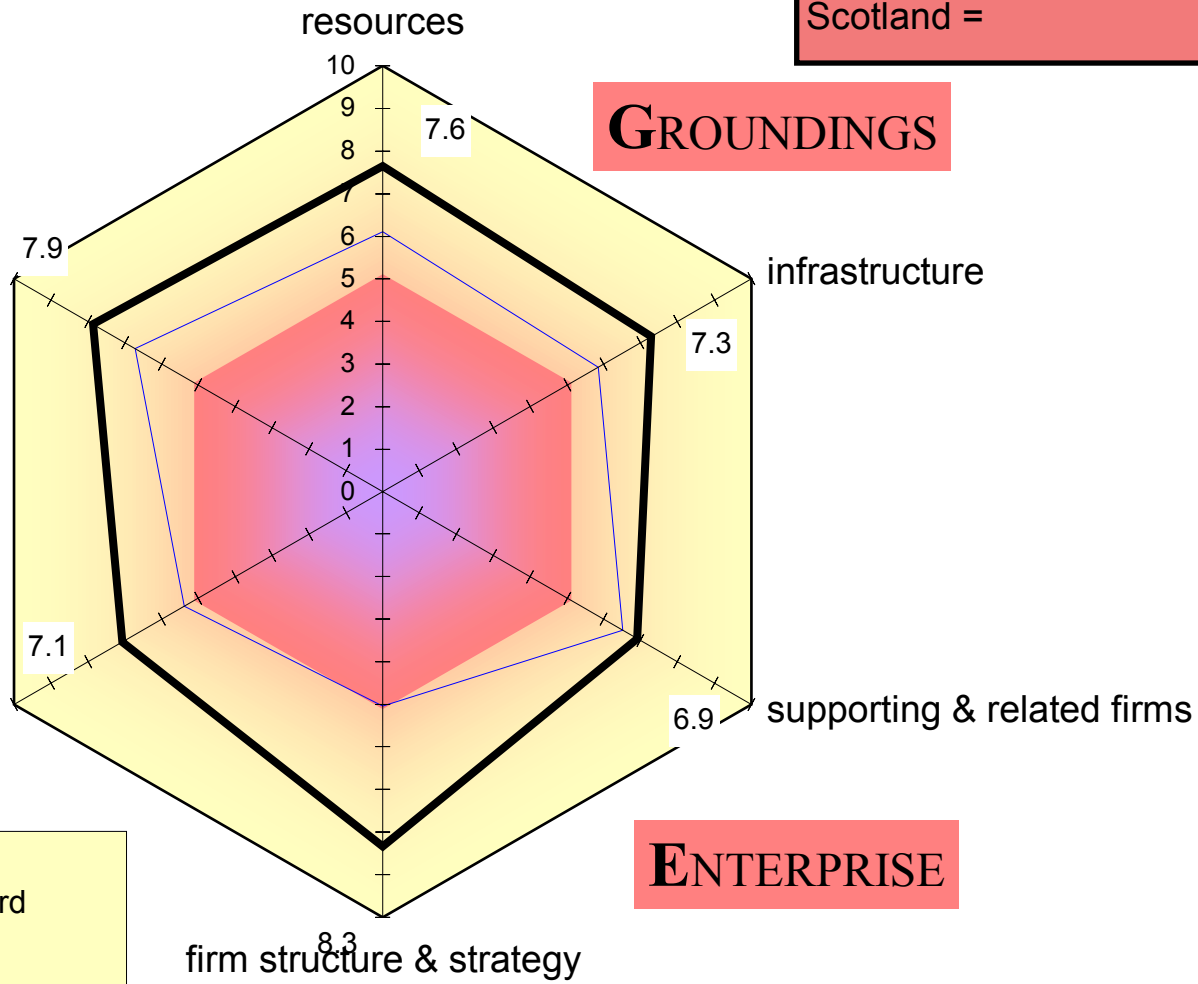
Ottawa

GEM ASSAY = **564**
 Scotland = 352

FOUNDINGS

MARKETS

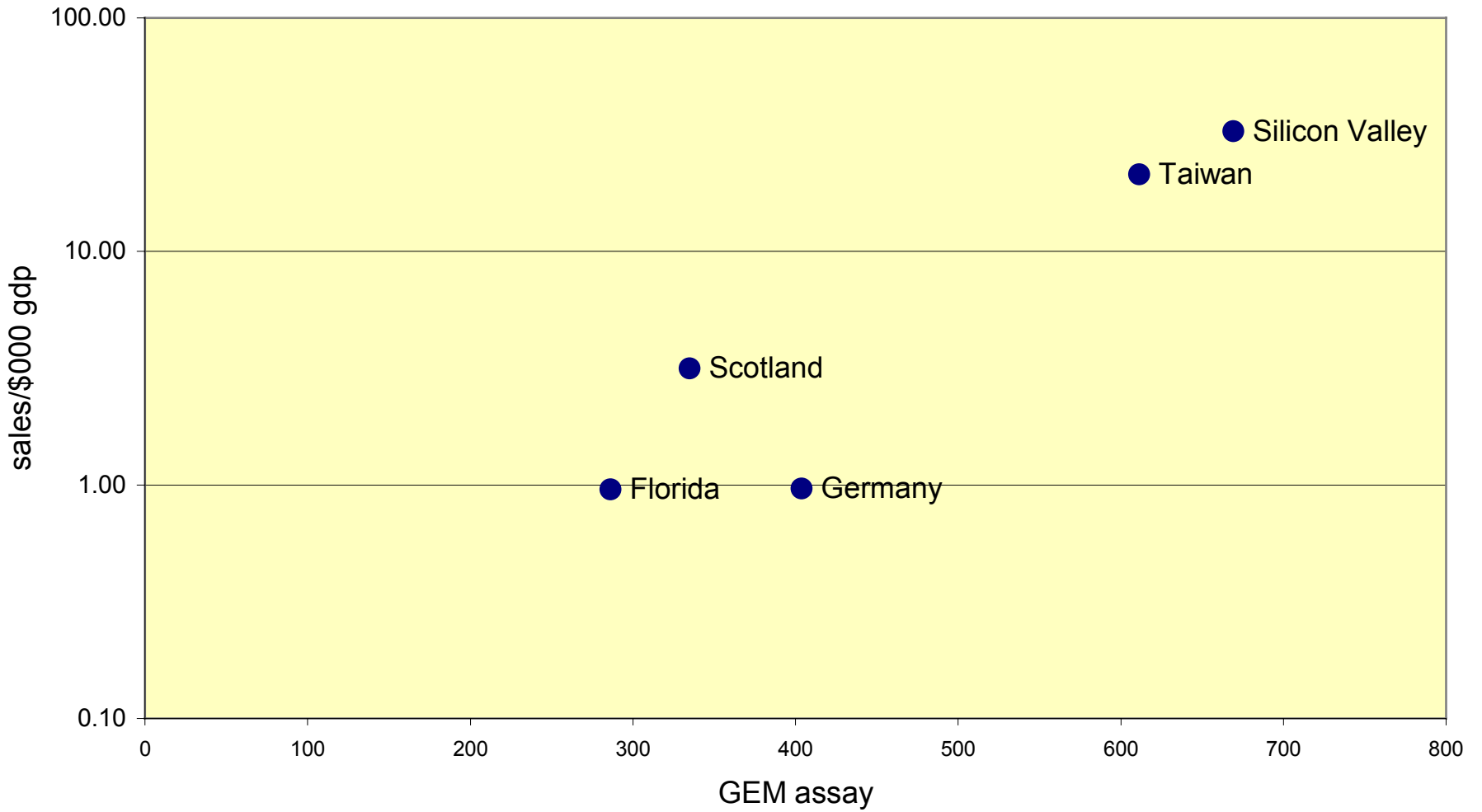
ENTERPRISE

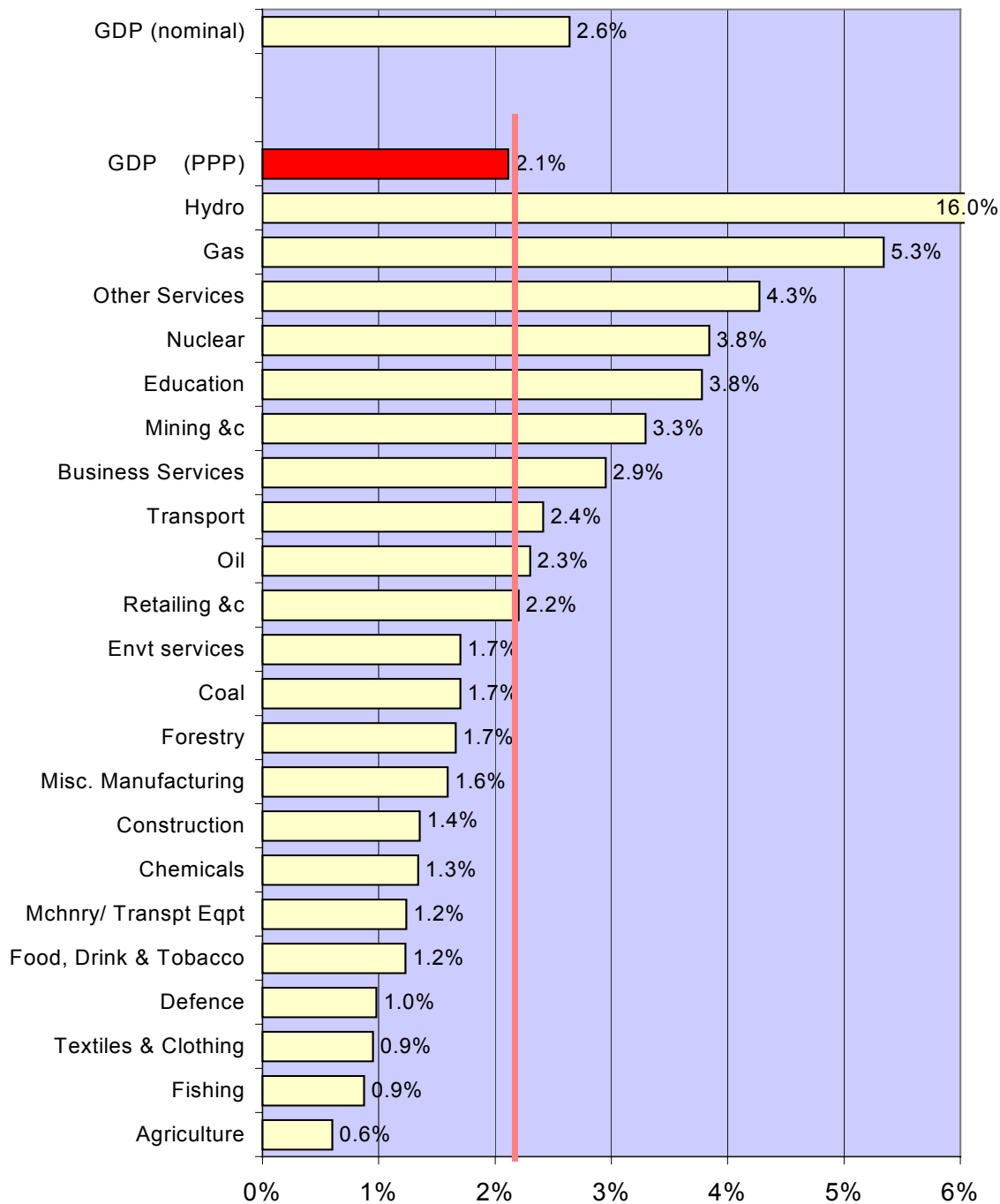


Groundings - Enterprise - Markets

- Detailed objective and subjective scoring of GEM (n00 variables)
- Elaborates industry model
- Gives research agenda for benchmarking studies
- Agenda for improvement
- Estimation of impact

Optoelectronics sales from local production/ \$gdp and the GEM score





Canadian shares of global value added

WARNING:
 OLD (1990), DRAFT
 DATA

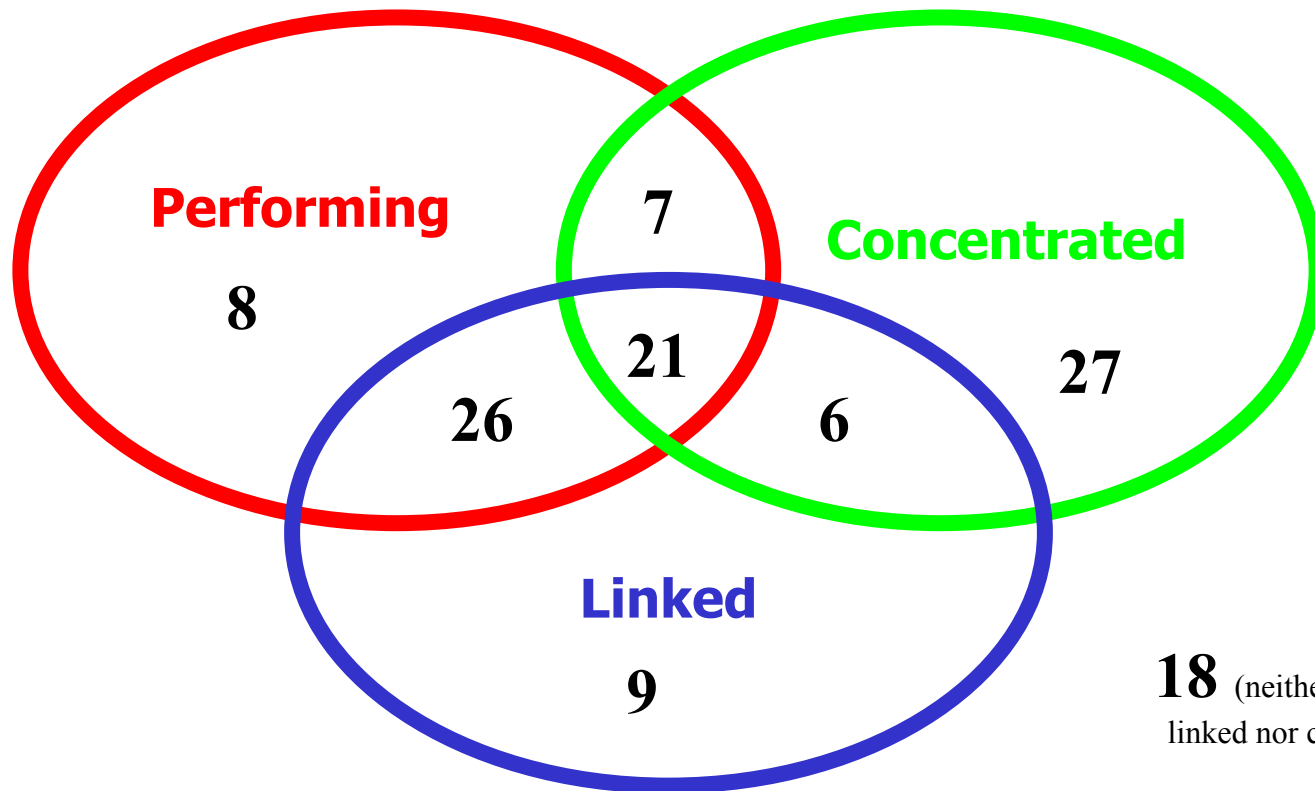
World IO tables

- Canadian cluster structures versus global?
- Key links from innovation to market transactions
- From UK spectacles to Canadian
- Relation of US & Canadian innosystems
- Can build on a Canadian statistical strength to develop a Canadian strength in innoanalysis (and, indeed, development analysis)

Agenda items

- ***Anchoring***: constancy & progress through changing politics and advancing time
- ***Interplay*** between
economic analysis : innovation systems analysis
economic performance: innovation
- ***Building*** on existing Canadian international leadership - eg statistics and development

no obvious correlation between geographical concentration and performance (or linkage)



18 (neither performing, linked nor concentrated)