

Skills and Innovation: Distributed & Distributing Innovation

Bruce Tether

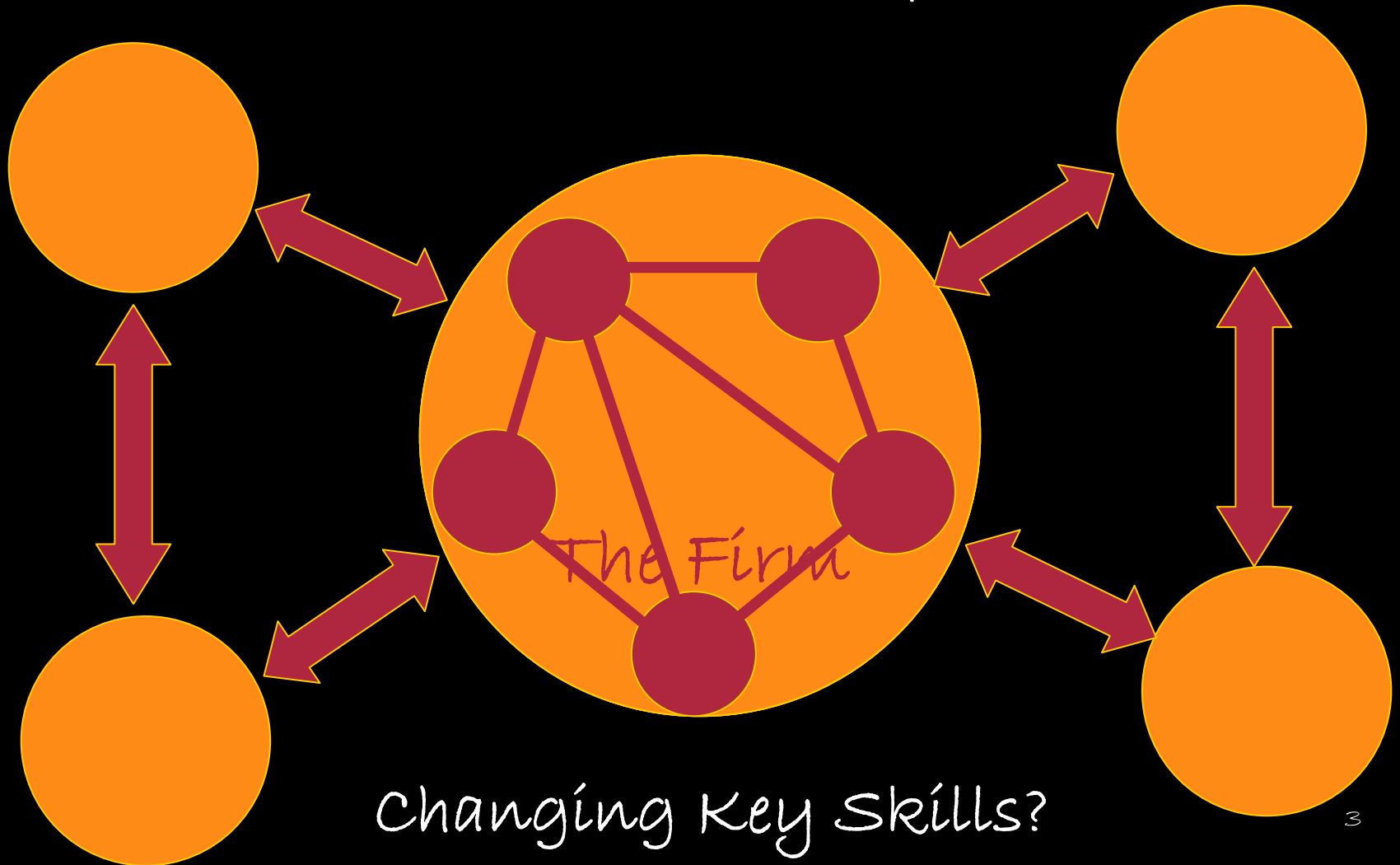
Tanaka Business School & DesignLondon,
Imperial College, London

(with thanks to Andrea Mina, Davide Consoli & Dimitri Gagliardi)

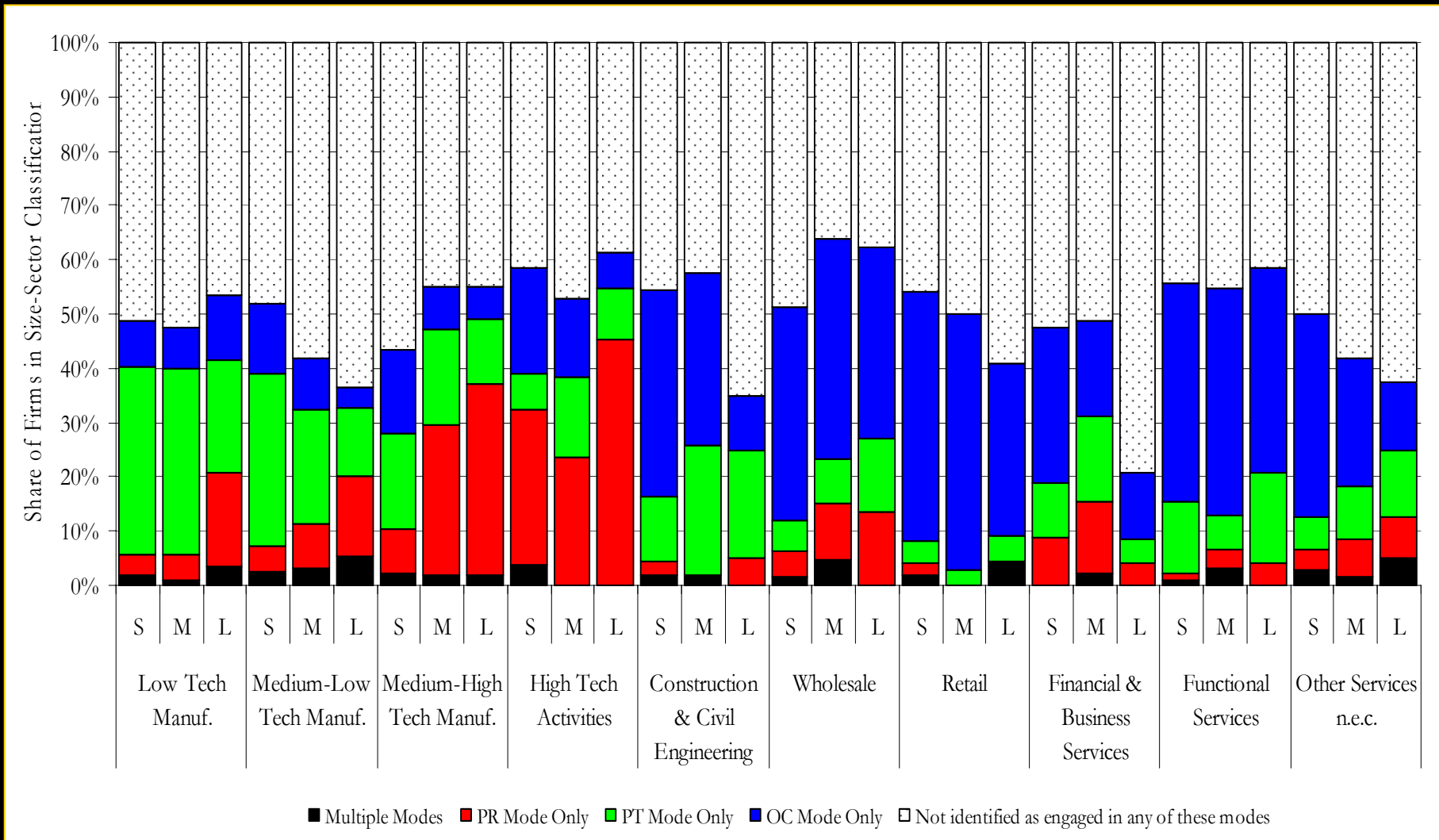
Background & Motivation ...

- 2005 study for DTI on Skills & Innovation
 - Surprisingly little literature from Innovation Studies
 - E.g., no article in ICC has 'skill(s)' in Title
 - Oxford Handbook - 5 index references to skills
 - C.f., great concentration on Capabilities & Knowledge
- Beginning an ESRC Funded Study, ...
 - Manufacturers moving to provide services &/or engaging in collaborative production
 - What are the skill implications of this?
 - Will skill gaps hold back such initiatives?

Changing Locus of Innovation From 'Closed' to 'Open' Models



Three Modes of Innovation ...



Simple Conceptualisation ...

Internal & External

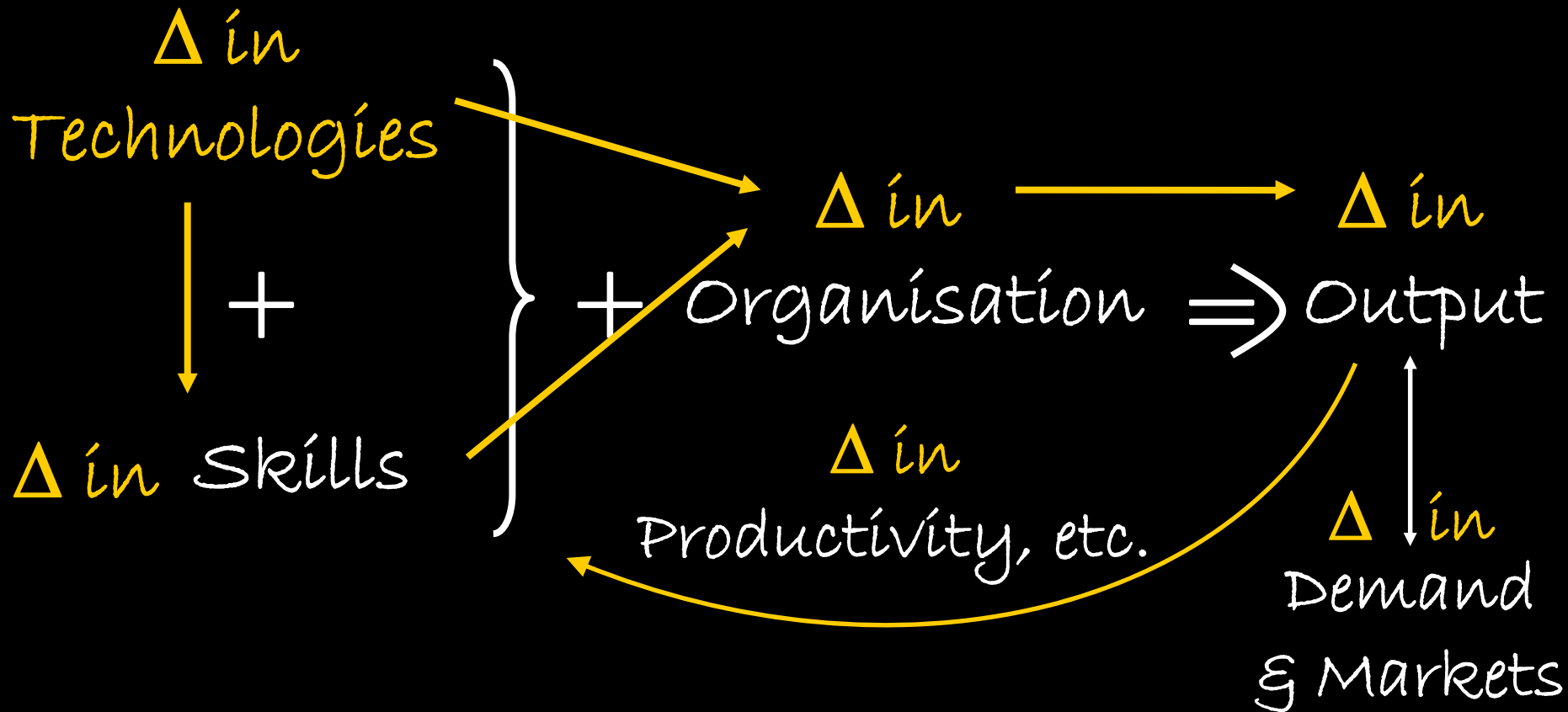
Capabilities

⇒ Output

Demand
& Markets

Productivity, etc.

Simple Conceptualisation ...



Prior Literature ...

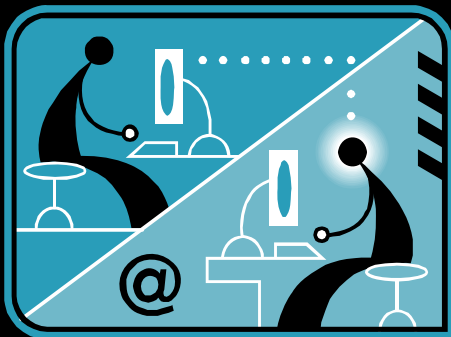
... How Tech / Org Chg affects Skills

- Skill Biased Technical Change



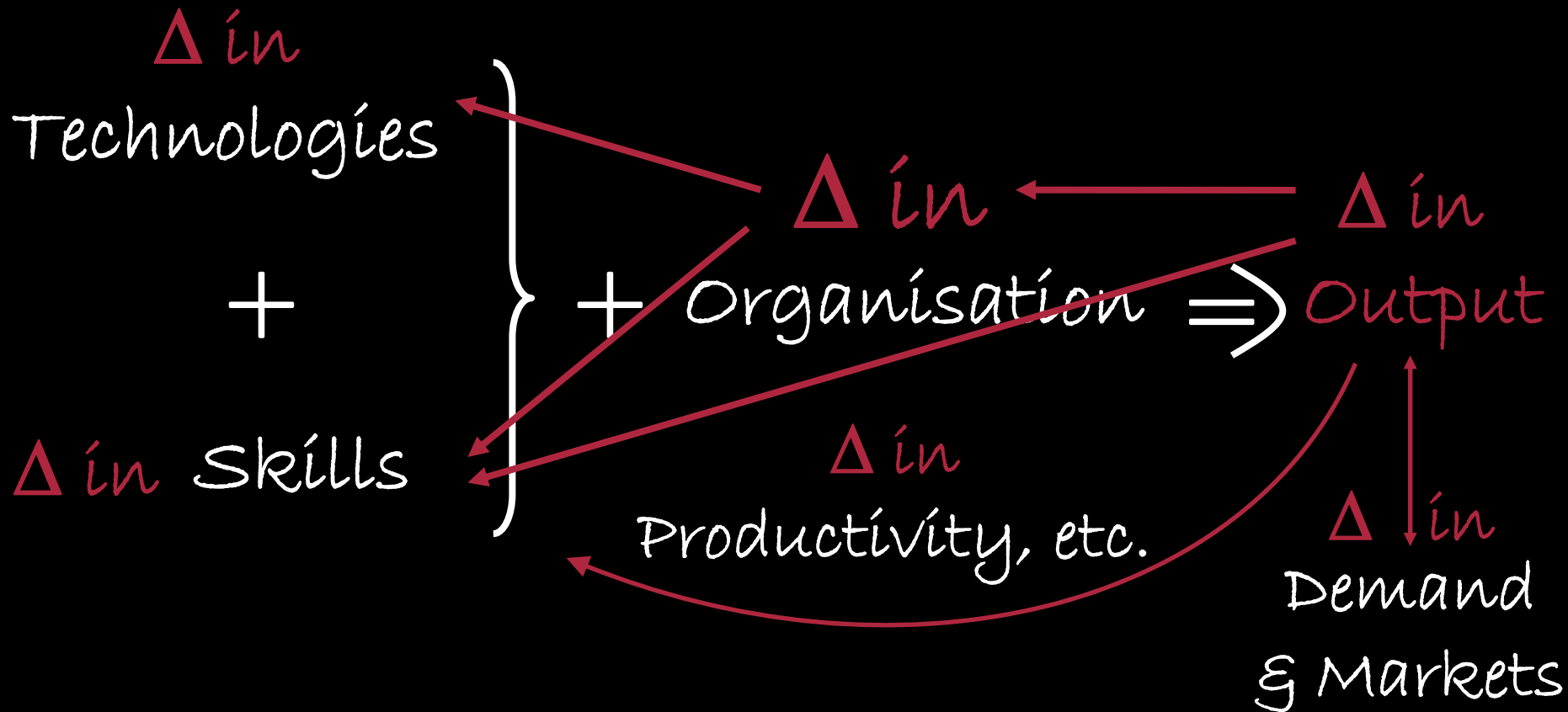
Tech. Chg (IT) favours skilled workers
'Good Jobs' : 'Bad Jobs' polarisation
Growing income differences (US, UK)

- Skill Biased Organisational Change



Bresnahan: technical change AND
organisational change favours
skilled workers
High Performance Work Practices

Simple Conceptualisation ...



Prior Literature ...

... Product Strategies & Skills

- Innovators / High Value Added Strategies
 - Generally require higher skills
 - High VA Strategy – Higher skills in workforce
 - Lower VA Strategy – Lower skills in workforce
 - But, doesn't always hold (e.g. Logistics firms)
- N.B – Importance of 'Soft Skills'
 - Importance of 'soft skills': communications, teamworking etc. often seen as key gaps.

Simple Conceptualisation ...

No Δ in
Technologies

+

Rigid
Skills

No Δ in
+ Organisation \Rightarrow

No Δ in

Output

No Δ in
Productivity, etc.

Δ in
Demand
& Markets

Prior Literature ...

... Skills and Ability to Innovate

- NIESR Studies of Britain & Germany



= British workers

German workers =



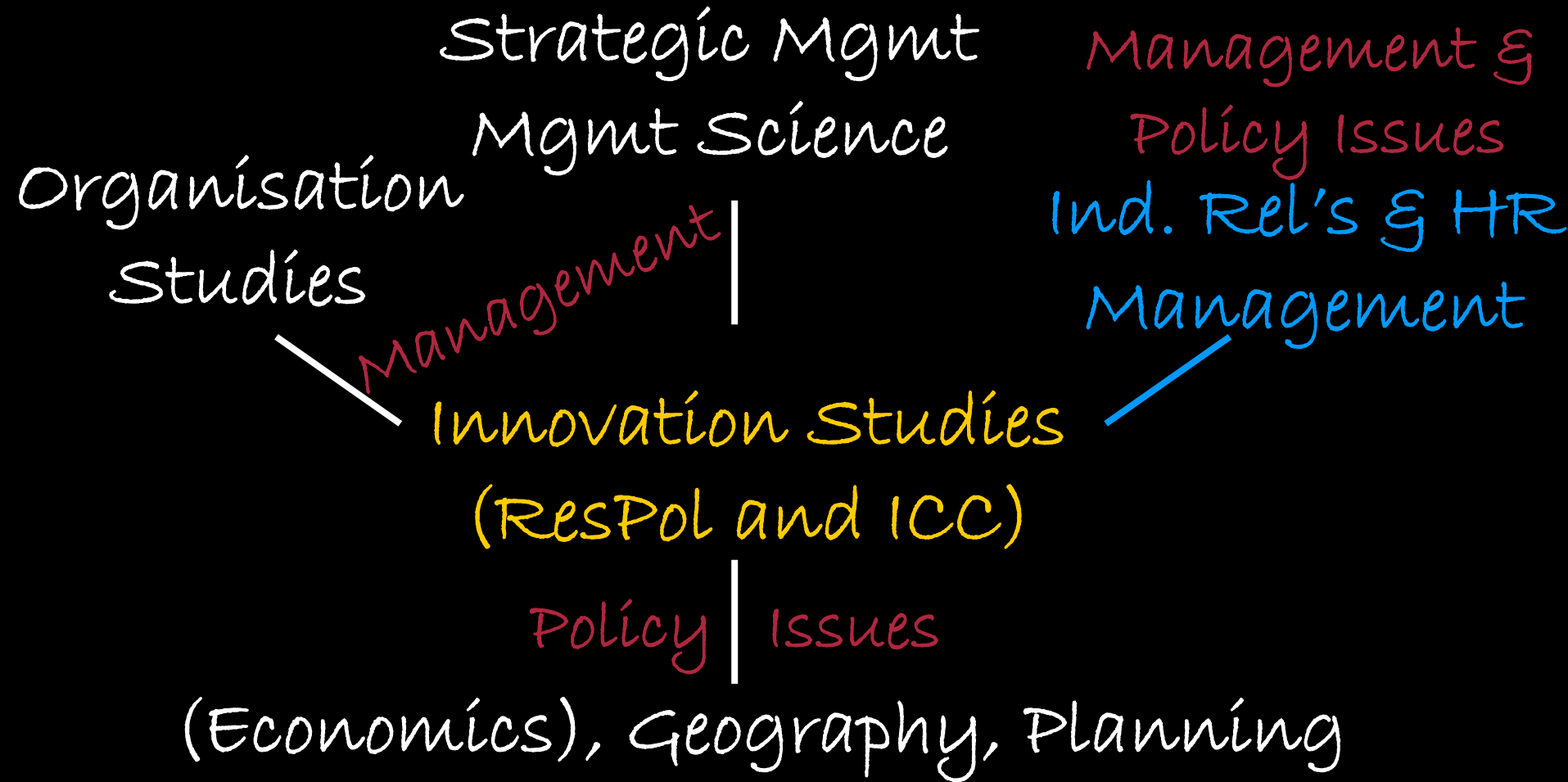
- Two types or sets of skills ...
 - Managerial skills & workforce skills
- Firms can get 'trapped' ...
 - In 'Low-skill-low-specification' markets
 - Esp. where demand & foreign competition is weak

Moving Forward ...

Innovation thro' Services & Alliances

- ESRC study on Manufacturing Firms
 - From providing products to providing (products and) services.
 - Also, moving to collaborative production
- Questions ...
 - What are the implications for skills (& Org Chg)?
 - Do skill gaps create rigidities & prevent ...
 - the effective utilisation of these strategies.

§ Finally, the wider context ...
.... Paul Nightingale's slide



THAT'S ALL FOLKS!