

# Organisational design for Innovation: problems, questions and policy options

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# Problems, questions, challenges

- Main theoretical challenges
  - Limitations and problems with the survey-based empirical work
  - European policy options and design
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# I. Theoretical challenges: the need for a multi-level approach

- The creation and diffusion of new organisational practices is a multi-level process involving complex interactions and feedbacks between the micro, corporate, sector and societal levels. Conventional research on organisational design and innovation provides at best a partial understanding of these dynamics.
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The existing literature is very diverse and not well integrated into a coherent theoretical framework

- **Classical organisational design theories (Burns and Stalker, 1961; Mintzberg, 1979)**
    - Tends to provide a static matching of structural forms to types of technology and innovation
    - Limited attention given to micro-dynamics of knowledge development and use
    - Hard to operationalise due to absence of pure types
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Evolutionary literature on routines, capabilities and learning (e.g. Cohen and Levinthal; Winter and Zollo, Levinthal and March)

- Tends to focus on the micro-dynamics of how organisations adopt new ideas and behavioural patterns and, how these are related to their capacities for absorbing and exploiting knowledge
  - Less attention given to the relation of these dynamics to organisational structure and forms
    - Difficulties in developing statistical indicators and measures
    - Related problems in terms of developing policy relevant testable hypotheses concerning what organisational practices management should adopt
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## Institutional and innovation systems approaches (e.g. Hall and Soskice; Lundvall; Nelson; Whitley)

- A focus on the relation between institutional context and innovation performance
    - User-producer interactions and network structures
    - Science-technology-industry links
    - Network structures, and labour market institutions
    - Systems of political governance
  - Insufficient attention given to organisational structure and design
  - Failure to analyse the micro-dynamics of knowledge use and development within the firm
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## Need for an integrated, multi-level approach

- There is a need for a multi-level approach that gives due attention to micro-level dynamics whereby new organisational forms emerge and are accepted by the actors. These micro-level dynamics should be situated within larger corporate structures and strategies and are influenced by the nature of the firm's relations with external partners. Internal and external governance in turn are shaped by the wider institutional and societal contexts, which display national and sector specific features.
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## A promising candidate

- A further development and extension of the national systems of innovation and production approach so as to more fully integrate the enterprise level and micro-level processes of knowledge use and development (Lorenz and Lundvall 2006)
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## II. Survey-based empirical work focusing on the relation between organisational practices and innovation

- Much of this research draws on, or has close affinities with, the work on high performance work practice (HPWP) systems
  - Links the use of specific organisational and human resource practices to the firm's capacity for incremental learning and innovation
  - Use of survey data from surveys allowing for the development of indicators of both organisational practices and innovation performance: DISKO, WERS, REPOSE
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## Two related strands of empirical research

- Predicting innovation outcomes: Michie and Sheenan, 1999; Laursen and Foss, 2003; Lorenz et al., 2004; Nielsen and Lundvall 2006, A. Lund Vinding, 2006; Jensen et al. 2007
  - Complementarities literature: Bresnahan, Brynjolfsson and Hitt, 1999; Black and Lynch, 2000; Caroli, 2001.
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# Issues: International convergence?

- **Implicit assumption of a ‘one best way’**
    - “The beginnings of administrative wisdom is the awareness that there is no one optimum type of management system” (Burns and Stalker, 1961)
  - **A focus on a few ‘key’ indicators which provide only a very partial description of the organisation of the enterprise**
  - **Can lead to naïve benchmarking and mistaken policy options**
  - **Failure to explore the way the pressures of international competition are mediated by the effects of the local institutional context**
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# Weaknesses of the 'key' indicators

- Are 'new' or 'transformed' work practices new?
    - Many so-called 'new' organisational such as team organisation or the blurring of occupational boundaries have been around for a long time
  - What is the content of 'new' work practices in terms of skills, learning and problem-solving?
    - Work by Lorenz and Valeyre (2005) on the adoption of different forms of work organisation shows that teams, job rotation and the use of quality norms can be organised in ways that require varying capacities for learning and autonomous problem-solving on the part of employees
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Cluster analysis of forms of work organisation based on data from the third  
European Survey on Working Conditions  
(8081 salaried employees for the EU-15)

	Percent of employees by work organisation cluster reporting each variable				
Variable	Discretionary learning	Lean production	Taylorism	Traditional organisation	Average
Problem solving activity	95.4	98.0	5.7	68.7	79.3
Learning new things in work	93.9	81.7	42.0	29.7	71.4
Complexity of tasks	79.8	64.7	23.8	19.2	56.7
Discretion in fixing work methods	89.1	51.8	17.7	46.5	61.7
Discretion in setting work rate	87.5	52.2	27.3	52.7	63.6
<b>Team work</b>	<b>64.3</b>	<b>84.2</b>	<b>70.1</b>	<b>33.4</b>	<b>64.2</b>
<b>Job rotation</b>	<b>44.0</b>	<b>70.5</b>	<b>53.2</b>	<b>27.5</b>	<b>48.9</b>
<b>Quality norms</b>	<b>78.1</b>	<b>94.0</b>	<b>81.1</b>	<b>36.1</b>	<b>74.4</b>
Responsibility for quality control	86.4	88.7	46.7	38.9	72.6
Horizontal constraints on work rate	43.6	80.3	66.1	27.8	53.1
Hierarchical constraints on work rate	19.6	64.4	66.5	26.7	38.9
Norm-based constraints on work rate	21.2	75.5	56.3	14.7	38.7
Automatic constraints on work rate	5.4	59.8	56.9	7.2	26.7
Monotony of tasks	19.5	65.8	65.6	43.9	42.4
Repetitiveness of tasks	12.8	41.9	37.1	19.2	24.9
Total	39,1	28,2	13,6	19,1	100,0

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## Weaknesses of the indicators

- Use of arbitrary thresholds to identify 'transformed organisations'
    - Results in an inadequate characterisation of actual organisational design and management systems.
    - What are the job characteristics for the residual of 'non-transformed' employees
    - What are the characteristics of the residual of 'non-transformed firms'?
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## Weaknesses of the indicators

- A manufacturing bias?
    - How relevant are the core HPWS practices to knowledge intensive service sectors (ICT service providers, financial services, media industries, etc.) which account for a growing share of employment?
  - Work by Lorenz and Valeyre identifies important sector differences in the use of different forms of work organisation
    - Raises the question of sector systems of production and innovation
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## Forms of Work Organisation by Sector of Activity

	Percent of employees by sector in each organisational class			
	Discretionary learning	Lean production	Taylorism	Traditional organisation
Mining and quarrying	42.4	41.5	3.4	12.7
Food processing	18.4	34.9	24.6	22.1
<b>Textiles, garments, leather products</b>	<b>27.2</b>	<b>25.9</b>	<b>30.2</b>	<b>16.8</b>
Wood and paper products	27.6	40.7	23.9	7.8
Publishing and printing	31.1	43.8	14.1	11.0
Chemicals and plastics	34.7	34.1	21.9	9.2
Metal products and mechanical engineering	31.8	35.7	19.8	12.7
<b>Electrical engineering and electronics</b>	<b>41.5</b>	<b>38.5</b>	<b>8.6</b>	<b>11.4</b>
Transport Equipment	28.1	38.7	23.2	10.0
Other industrial production	50.9	22.1	18.4	8.5
Electricity, gas and water	58.5	19.4	6.2	15.8
Construction	40.9	31.4	10.6	17.1
Wholesale and retail trade	41.5	20.4	11.7	26.4
Hotels and restaurants	29.7	25.8	16.6	27.9
Land transport	26.3	24.0	10.2	39.5
Other transport	39.2	36.1	5.0	19.7
Post and telecommunications	38.1	27.1	7.7	27.1
<b>Financial services</b>	<b>58.1</b>	<b>21.5</b>	<b>3.4</b>	<b>16.9</b>
<b>Business services</b>	<b>57.6</b>	<b>18.7</b>	<b>6.9</b>	<b>16.7</b>
Personal services	39.7	18.9	7.6	33.8
Average	39.1	28.2	13.6	19.1

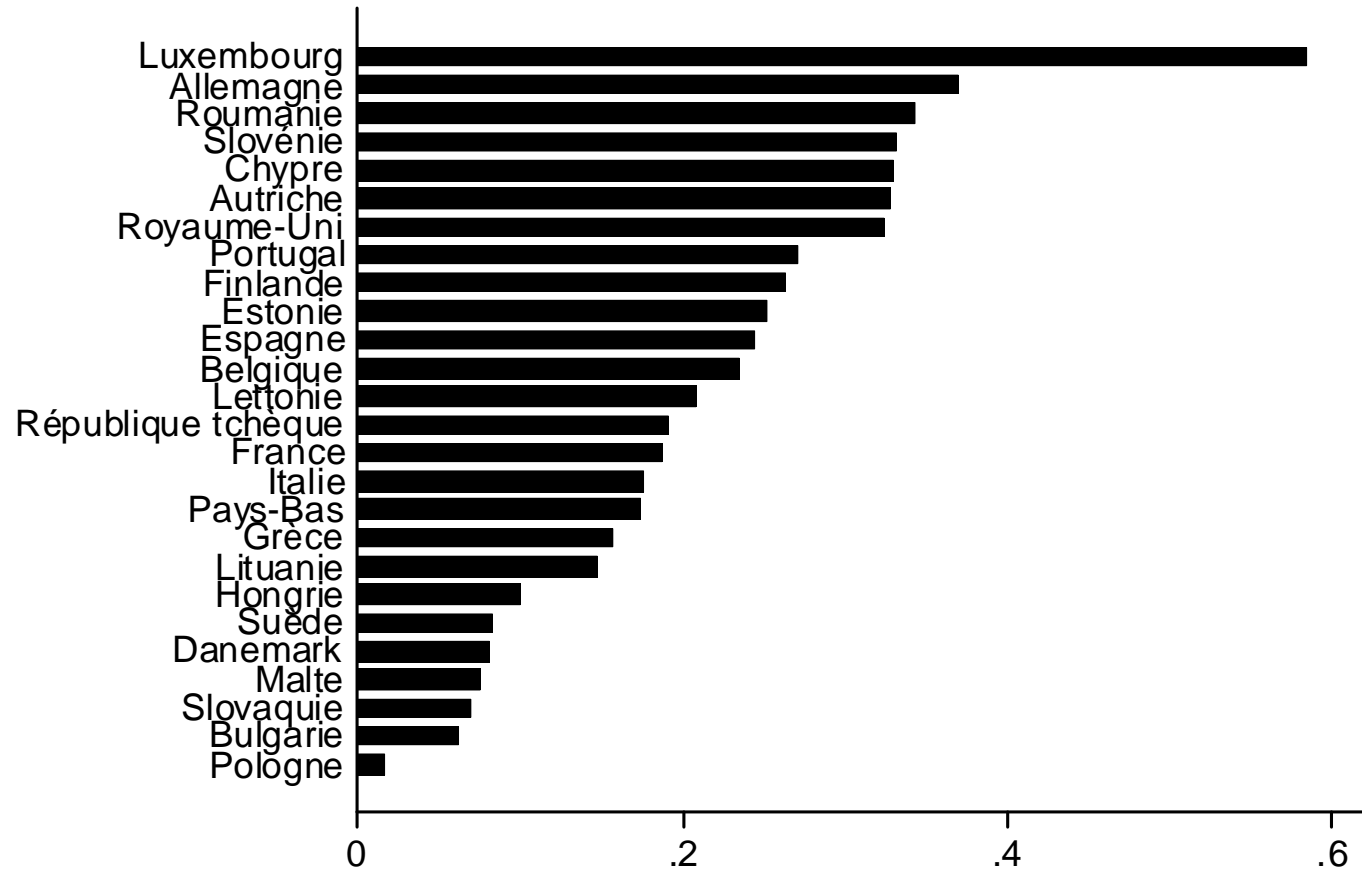
Source: Third Working Condition survey. European Foundation for the Improvement of Living and Working Conditions

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## What do we know about national differences in management systems and organisational design?

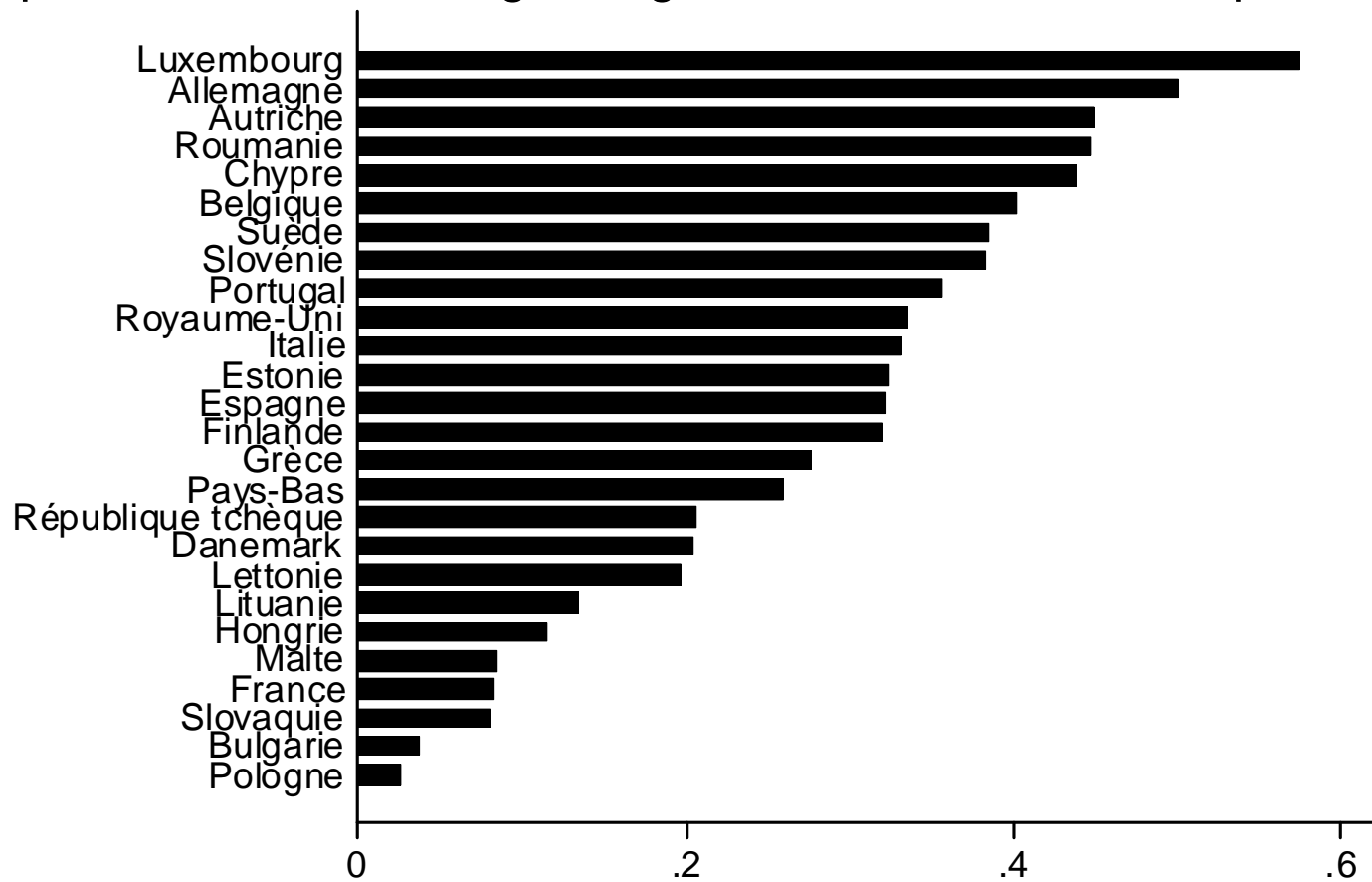
- The European surveys on working conditions can be used to map the use of different forms of work organisation across the EU but not to characterise firm structure and organisational design.
  - CIS data provides harmonised measures of organisational or administrative change.
    - They are difficult to interpret and to my knowledge have not been used by the research community
    - They are of questionable value for the policy community
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## Implementation of advanced management techniques in percent



Source: CIS-3

## Implementation of changed organisational structures in percent



Source: CIS-3

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## III. Policy options and design

- An Science and Technology bias within the policy community
    - Despite the broad acceptance of the importance of organisational practice and enterprise structure for innovation performance, policy makers tend to consider innovation processes largely as aspects connected to formal processes of R&D, especially in the science-based industries. This can be seen in the emphasis placed on benchmarking variables related to science and technology and in the focus on such instruments as tax subsidies to R&D, the training of scientists in high-tech fields such as ICT, bio- and nano-technology and strengthening the linkages between firms and universities in these specific fields.
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## The S&T bias in the EU Trendchart innovation benchmarking exercise

- Trendchart's annual ranking of the innovative performance of EU member nations is based largely on conventional S&T measures such as R&D expenditures, patenting, the share of the population with tertiary education, the weight of S&E graduates in the workforce, ICT expenditures and the importance of venture capital.
  - Only one of the 22 individual measures which are used to construct the 'summary innovation index' for EU member countries are designed to capture organisational aspects.
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## A failure to recognise the role of organisational design within the Lisbon strategy and in the context of the ‘open-method of coordination’

- Microeconomic guidelines (2005-2008)
    - (7) To increase and improve investment in R & D, in particular by private business.
    - (8) To facilitate all forms of innovation.
    - (9) To facilitate the spread and effective use of ICT and build a fully inclusive information society.
    - (10) To strengthen the competitive advantages of its industrial base.
    - (11) To encourage the sustainable use of resources and strengthen the synergies between environmental protection and growth.
    - (12) To extend and deepen the internal market.
    - (13) To ensure open and competitive markets inside and outside Europe and to reap the benefits of globalisation.
    - (14) To create a more competitive business environment and encourage private initiative through better regulation.
    - (15) To promote a more entrepreneurial culture and create a supportive environment for SMEs.
    - (16) To expand, improve and link up European infrastructure and complete priority cross border projects.
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# Integrated Guideline No 8 on Innovation (2005-2008)

## Guideline No 8

- **To facilitate all forms of innovation, Member States should focus on:**
    - — improvements in innovation support services, in particular for dissemination and technology transfer;
    - — the creation and development of innovation poles, networks and incubators bringing together universities, research institutions and enterprises, including at regional and local level, helping to bridge the technology gap between regions;
    - — the encouragement of cross-border knowledge transfer, including from foreign direct investment;
    - — encouraging public procurement of innovative products and services;
    - — better access to domestic and international finance;
    - — efficient and affordable means to enforce intellectual property rights.
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# Only one of the twenty-four 2005-2008 Integrated Guidelines refers to organisational aspects

## Guideline No 21

- Promote flexibility combined with employment security and reduce labour market segmentation, having due regard to the role of the social partners, through:
    - — the adaptation of employment legislation, reviewing where necessary the different contractual and working time arrangements;
    - — addressing the issue of undeclared work;
    - — better anticipation and positive management of change, including economic restructuring, notably changes linked to trade opening, so as to minimise their social costs and facilitate adaptation;
    - — **the promotion and dissemination of innovative and adaptable forms of work organisation, with a view to improving quality and productivity at work, including health and safety;**
    - — support for transitions in occupational status, including training, self-employment, business creation and geographic mobility.
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## Guideline No. 21: proposed indicators for monitoring and for analysis

- The proposed indicators for monitoring and for analysis do not include measures of organisational practice or change
    - The indicators for monitoring are measures of contractual arrangement and number of accidents at work
    - The indicators for analysis are principally working time measures, measures of occupational disease and an indicator of labour productivity
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# The next step for European policy

- There is now a sizeable body of empirical research demonstrating the importance of organisation design and practice for innovation. These results suggest that European policy efforts to improve innovation performance as part of the revised Lisbon strategy need to take a close look at the effect of organisational practice on innovation. The obstacle to improving the innovative capabilities of European firms might not be low levels of R&D expenditures, which are strongly determined by industry structures and consequently difficult to change, but the widespread presence of working environments that are unable to provide a fertile environment for innovation.
  - If this is the case, then the next step for European policy is to encourage the adoption of 'pro-innovation' organisational practice, particularly in countries with poor innovative performance.
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## The contribution of organisational indicators and measures

- An important step towards giving the organisational dimension a more central place in the revised Lisbon strategy in the context of the open-method of coordination will be the development of harmonised measures of organisational design and change at the EU level.
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