

# Competitive strategies and innovation modes in KIBS: Evidence from Lombardy

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# KIBS AND INNOVATION

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Traditional view of service firms as incapable of producing innovation challenged and reversed: KIBS as *key players* in the knowledge-based economy

## □ Two roles for KIBS

- Source of innovation and knowledge production (Miles, 2005; Muller and Zenker, 2001).
- Dynamic **nodes** of knowledge-related networks, “**bridges of innovation**” (Czarnitzky and Spielkamp, 2000), “**brokers**” (Thomi and Böhn, 2003), interacting with the manufacturing sector as knowledge purchasers, providers and partners (Muller and Zenker, 2001).

## □ Peculiar modes of innovation and heterogeneity across KIBS

- Soft sources of knowledge and technology – cooperation with customers and suppliers – rather than hard R&D ones (Tether and Metcalfe, 2004)
- Technical vs Professional KIBS (Freel, 2006)

# KIBS AND REGIONAL INNOVATION SYSTEMS (1)

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- Well-defined territorial dimension of KIBS activity:
  - Role of proximity with customers and suppliers
  - Intangible nature of input and output
  - Co-production
- Urban agglomeration economies
  - Metropolitan areas provide large and diversified markets and a qualified labour pool
- Strategic role for competitiveness of regional systems
  - Support “regional adaptability” and “responsiveness” adapting generic knowledge to specific sectoral needs (Strambach, 1998; Wood, 2005)

## KIBS AND REGIONAL INNOVATION SYSTEMS (2)

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Large heterogeneity in type, role and dynamics of KIBS across regions (Wood, 2005)

- 1) Connection and participation to global knowledge intensive networks in capital city regions
- 2) Restructuring and orientation towards high tech functions in mature industrial regions
- 3) Liberalisation and transformation in organisational and competitive culture in backward areas



**The evolution of KIBS reflects the characteristics of the local economy and is likely to strengthen differences across regions**

# OUR RESEARCH AGENDA (1)

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## 1. KIBS competitive strategies and modes of innovation

Unpacking KIBS innovation “black box”:

- What are KIBS competitive drivers and innovation patterns?
- Are (all) KIBS really innovative?
- Are there “typical” innovation modes in the KIBS sector?

## 2. KIBS and regional innovation systems

- Are innovative regions characterised by specific patterns of KIBS’ evolution?
- What is the interplay between the transformation of *manufacturing* and evolution of *KIBS* across regional systems?

## OUR RESEARCH AGENDA (2)

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### 3. Patterns of entrepreneurship in KIBS

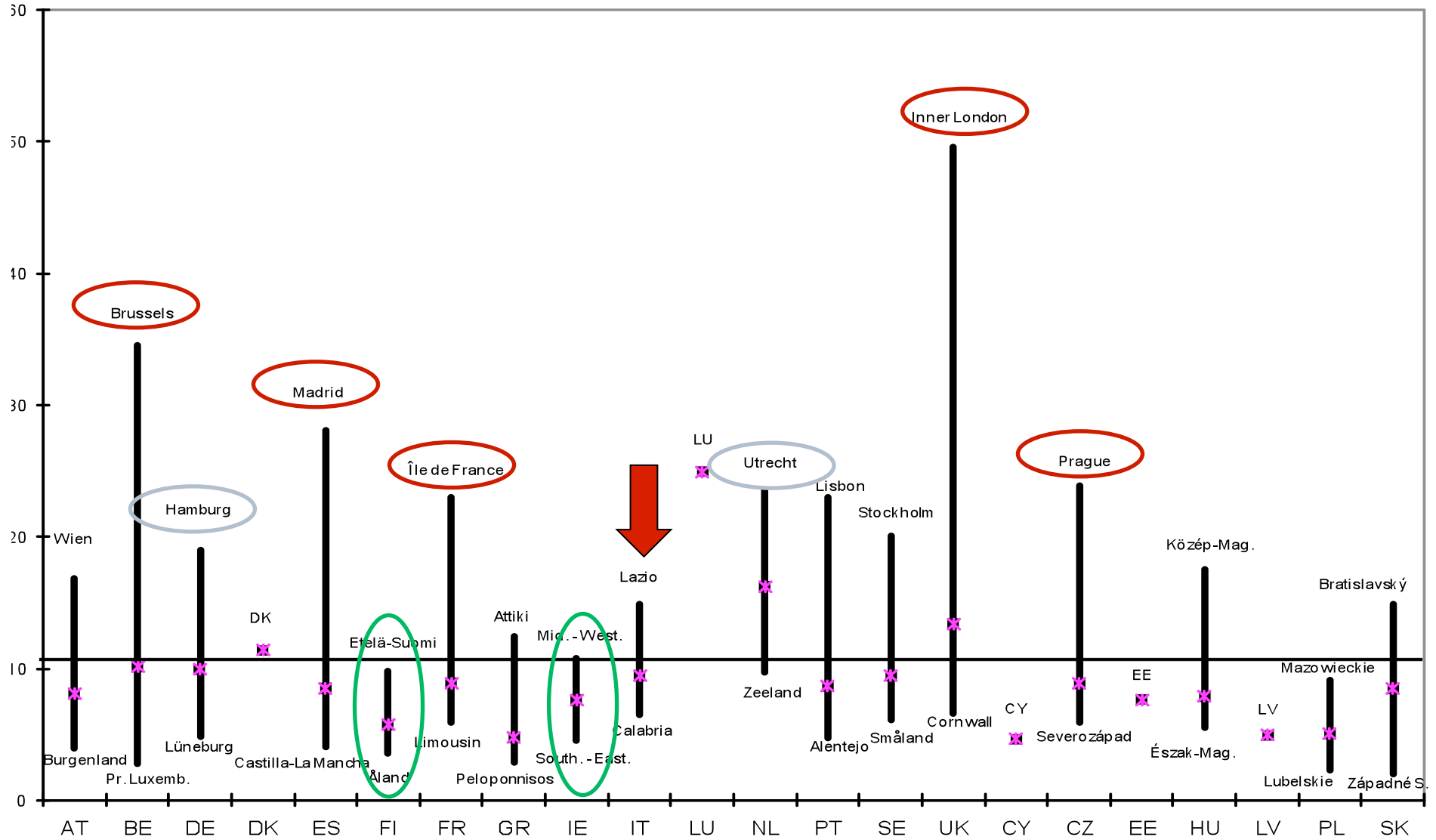
- Characteristics of new entrepreneurs and performance of new ventures
- Role of knowledge-based entrepreneurship and high-growth firms

# KIBS in Lombardy

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- Traditional orientation towards industrial activities BUT growth of the service sector in terms of value added and employment
- The KIBS sector has grown well above the average, increasing its weight in the regional economy up to nearly 10% of local units and employment (2005)
- Lombardy is one of the major Italian KIBS poles:
  - 27% of national local units
  - 31% of national employment
  - ... Although far from the KIBS-intensity frontier of large metropolitan areas

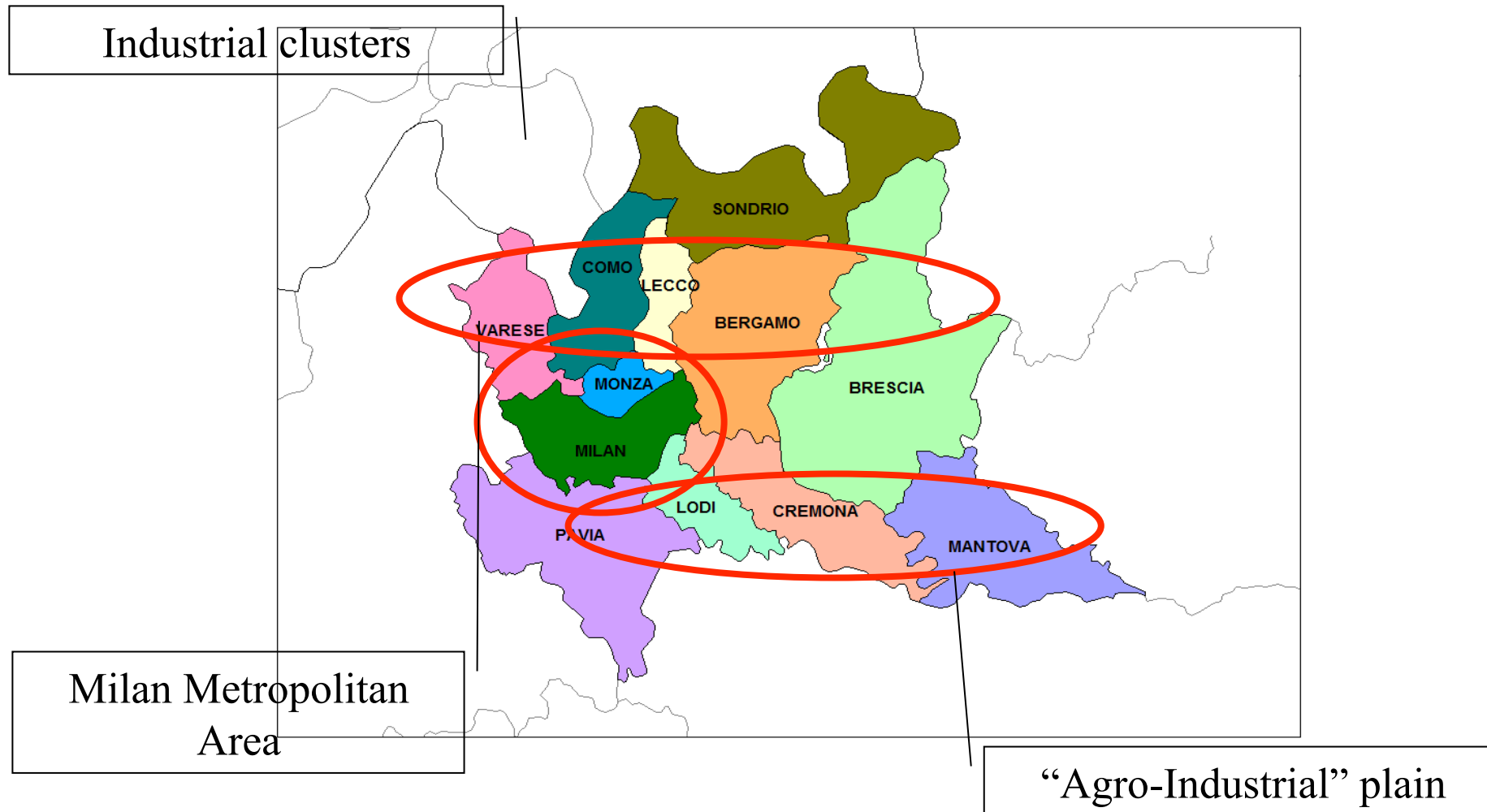
# KIBS EMPLOYMENT SHARE: BETWEEN AND WITHIN COUNTRY DIFFERENCES (2006)





# “Plural” Regional Innovation System

→ *Functional relations between territories and across value chains*



# Sample and Methodology

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- Survey in Spring 2006 – Telephone interviews based on a questionnaire → competitive drivers and innovation factors
- **441 KIBS firms in Lombardy** – stratified sample by size and geographical area
- 3 sectors: Computing services (NACE 72); Research and Development (NACE 73); Other professional activities such, as engineering offices and consulting services (NACE 74).
  - Main sub-sectors: 35.3% “architect, engineering and technical offices” (NACE 742); 29.9% “law, market research and consulting firms” (NACE 741); 19.1% “other activities” (NACE 748)

# Descriptive evidence - Size and market

- **Self-employment and SMEs:** 43.1% of firms with one employee and 90% with less than 10 employees. Nevertheless, a significant share of firms (~10%) has more than 50 employees.
- **SMEs are the main market** for KIBS, but 17.2% indicate **large firms** as their main customers → especially **computing services firms** (20.7%)
- **New firms:** larger share of young firms in p-KIBS (50% < 10 years). Older firms in engineering and architectural services.
- **Local markets:** customers are mostly located within the region or in a relatively close area (within 50 km)
- **Local competitors:** competition is **strongly localised**, mostly in the same urban centre of the firm, or, at most, the region (especially in the professional and consulting area)

# Competitive factors: relevance to firm strategy

	Very important	Rather Important	Not very important	Not important at all
Price competition	140 (31.7%)	126 (28.6%)	102 (23.1%)	70 (15.9%)
Speed of service delivery	267 (60.5%)	128 (29.0%)	22 (5.0%)	18 (4.1%)
Quality of services	381	53	4	3
Large range of services offered	Range more relevant than new			33 (0.7%)
Location of distribution channels	36 (8.2%)	100 (22.7%)	67 (15.2%)	166 (37.6%)
Post-sale services	78 (17.7%)	70 (15.9%)	34 (7.7%)	178 (40.4%)
Availability of distribution channels	44 (10.0%)	83 (18.8%)	74 (16.8%)	171 (38.8%)
Development of new services	114 (25.9%)	169 (38.3%)	75 (17.0%)	67 (15.2%)
Use of advanced technologies	223 (50.6%)	137 (31.1%)	45 (10.2%)	35 (7.9%)
Collaboration with other firms	84 (19.0%)	168 (38.1%)	79 (17.9%)	105 (23.8%)
Reputation	361 (81.9%)	68 (15.4%)	11 (0.7%)	0 (0.0%)

# Competitiveness: Factor analysis

	DISTRIBUTION CHANNELS	PRICE	INNOVATIVENESS	REPUTATION
Availability of distribution channels	<b>0,87456</b>	0,071464	0,068864	-0,01752
Location of distribution channels	<b>0,848578</b>	0,051366	0,07603	0,025119
Post-sale services	<b>0,463488</b>	0,136719	0,086264	-0,00416
Price competition	0,097519	<b>0,792092</b>	-0,09494	-0,0958
Speed of service delivery	0,192647	<b>0,63113</b>	0,138202	0,320121
Large range of services offered	0,085968	<b>0,579034</b>	0,400663	0,018534
Collaboration with other firms	0,163088	-0,07276	<b>0,851975</b>	-0,04572
Use of advanced technologies	-0,02345	0,449983	<b>0,576919</b>	0,137709
Development of new services	0,324833	0,42401	<b>0,467589</b>	0,057615
Reputation	-0,05195	-0,06702	0,021388	<b>0,775493</b>
Quality of services	0,043184	0,161661	0,012479	<b>0,764085</b>

# Innovation: relevance to firm strategy

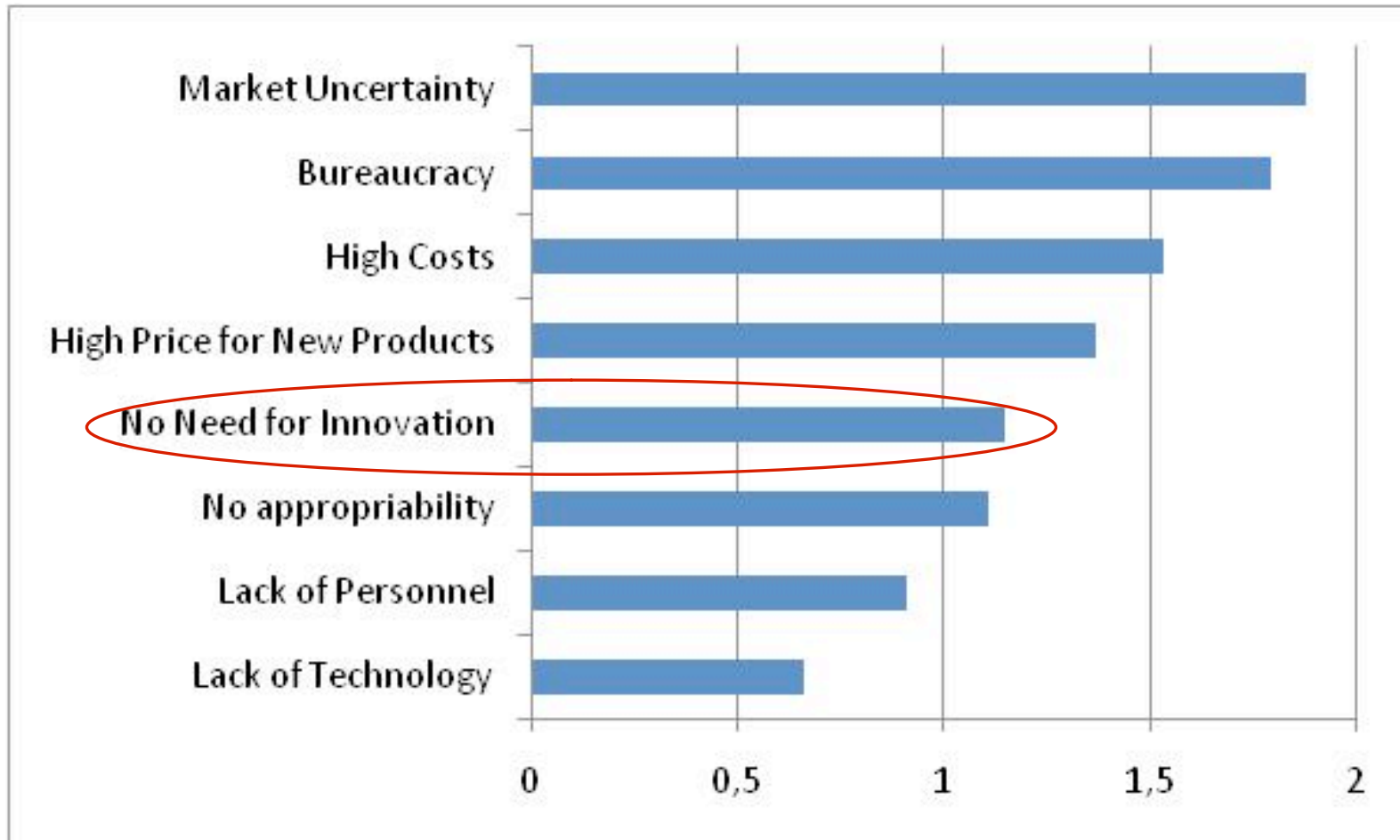
	Very important	Rather Important	Not very important	Not important at all
Types of services	57 (12,9%)	132 (29,9%)	112 (25,4%)	135 (30,6%)
Modes of service production	69 (15,6%)	124 (28,1%)	117 (26,5%)	117 (26,5%)
Modes of service delivery	37 (8,4%)	96 (21,8%)	113 (25,6%)	174 (39,5%)
Technologies for service production/ delivery	112 (25,4%)	132 (29,9%)	96 (21,8%)	96 (21,8%)
Use of ICT <span style="border: 1px solid black; padding: 2px;"><i>Embodied</i></span>	165 (37,4%)	140 (31,7%)	64 (14,5%)	67 (15,2%)
Human capital competences	57 (12,9%)	122 (27,7%)	79 (17,9%)	175 (39,7%)
Organisational structure	31 (7,0%)	58 (13,2%)	94 (21,3%)	254 (57,6%)
Cooperation with customers/other firms	51 (11,6%)	115 (26,1%)	130 (29,5%)	142 (32,2%)

# Innovation: Factor analysis

	<b>Technology Adoption</b>	<b>Organisational Change</b>	<b>Service Production</b>	<b>External Cooperation</b>
<b>Technologies for service production/delivery</b>	<b>0,86</b>	0,17	0,22	0,11
<b>Use of ICT</b>	<b>0,85</b>	0,17	0,20	0,15
<b>Human capital competences</b>	0,30	<b>0,75</b>	0,08	0,16
<b>Organisational structure</b>	0,03	<b>0,73</b>	0,34	0,15
<b>Modes of service production</b>	0,30	0,16	<b>0,81</b>	0,20
<b>Type of services</b>	0,24	0,47	<b>0,64</b>	0,13
<b>Modes of service distribution</b>	0,12	0,04	0,45	<b>0,79</b>
<b>Cooperation with customers/other firms</b>	0,21	0,47	-0,03	<b>0,74</b>

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

# Obstacles to Innovation





# Innovation: Cluster analysis

	<b>Cluster 1 Interactive innovation mode (86 )</b>	<b>Cluster 2 Product innovation mode (109 )</b>	<b>Cluster 3 Conservative innovation mode (103)</b>	<b>Cluster 4 Techno- organisational innovation mode (143)</b>
<b>Technology adoption</b>	-0,641	-0,790	0,024	<b>0,970</b>
<b>Organisational change</b>	-0,335	0,210	-0,675	<b>0,527</b>
<b>Service production</b>	-0,731	<b>0,979</b>	-0,576	0,109
<b>External cooperation</b>	<b>0,993</b>	-0,061	-1,033	0,193

# Cluster characterisation

(multinomial logistic regression – conservative cluster as base)

- ❑ Professional and technical KIBS distributed evenly across clusters
- ❑ **Interactive- innovation mode:**
  - Age
  - Proximity
- ❑ **Product – innovation mode:**
  - Price, speed, range
  - Distribution Channels
  - Training
- ❑ **Techno-organizational mode:**
  - Small size
  - Innovativeness
  - Price, speed, range
- ❑ **Conservative innovation mode:**
  - Computing services over-represented
  - Little focus on distribution channels
  - Well-established brand reputation

## CONCLUSIONS (1)

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### □ KIBS' competitive strategies:

- ✓ Innovativeness (mainly embodied technological change) and quality of service are the most relevant competitive drivers
- ✓ Fierce local competition: price, speed of delivery and proximity to customers represent crucial variables
- ✓ Human resource training but lack of attention towards new competences and profiles

## CONCLUSIONS (2)

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### □ KIBS' innovative activities:

- ✓ Variety of modes: related to firm characteristics and type of competitive markets
- ✓ Most (but not all) KIBS have a well defined orientation towards innovation
  - Less inclined to change when reputation is key to competition
    - “Conservative “ supply: building on established quality of *existing* services
    - Barriers to entry for young firms: protected markets