KNOWINNO second expert meeting on R&D and innovation in services (INNOSERV)

Trends in Service Innovation

Luis Rubalcaba

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Background research

ServPPIN – The contribution of services to growth and welfare and the role of service innovation networks
  - Final Report.

Europe Innova – Sectoral Innovation Watch
  - Organisational innovation, service innovation and the value chain: New trends and policy implications
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- Analytical framework for service innovation
- The ServPPIN project and some key trends for research

PART II: Trends for service innovation in value chain
- Introduction
- The evolution of services in the value chain
- Trends of organisational and service innovation in the value chain
PART I

Overall view

- Analytical framework for service innovation
- Some key research areas
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Level 1
Innovation in services
(Private and public services)
(Sectorial framework)

Level 2
Service-oriented innovation in businesses
(In any kind of business)
(Systemic dimension)

Level 3
Service innovation networks
(Between different players)
(Multiagent framework)

Interlevel dimension:
Innovation through services
(Role of knowledge-intensive services)
(Role of ICT and related-services)
(Role of services skills for innovation)
(Role for policy)

Blurring sectorial frontiers & services integrated in any economic activity.

Complementarities between different agents. Open service innovation. Social innovation.

Analytical framework for service innovation

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The ServPPIN project

What is about

Private services

Public services

INNOVATION

INNOVATION

NETWORKS

Impacts on EU growth and welfare
The ServPPIN project

Cooperation between public and private sectors – cross country perspective

More cooperation is given in very innovative systems (Nordic countries) and countries with high presence of public institutions (CEEC)

*Enterprise engaging in cooperation arrangements with public entities, country averages*

*Source: CIS4 database, Eurostat*
New overall trends (I)

- **Identification (concepts and indicators)** of performance gaps and innovation gaps in services;

- **Service innovation impacts**
  - The transformative power of service innovation in value added chain and global systemic values,
  - The role of services and service innovation in the emerging sectors such as environment,
  - The digital economy and new social services, and finally,
  - Measures and qualitative assessment of service and organizational innovation
New overall trends (II)

**Resources for services innovation**
- New skills, competences and capabilities for new services and service innovation,
- Business services and innovative interlinkages between services and industry, standards,
- Innovation and qualify in services and finally ICT and
- Complementarities between technological and non-technological innovation;

**social innovation in services**
- Open innovation and user-driven innovation;
- Disruptive changes in consumers’ behavior as drivers of service innovation;
- Service innovation and public procurement; service innovation and welfare;
- The role of quality and accessibility in addressing societal needs.
PART II

Trends for service innovation in value chain

- Introduction

- The evolution of services in the value chain

- Trends of organisational and service innovation in the value chain
Introduction

The objective

- To encourage the discussion on the transformative effects of organisational and service innovation on industrial value and supply chain
Introduction

Background
- Importance of value chains transformation is increasing
- Service and organizational innovations can change traditional value chains
- Industry is dependent on value adding service activities

Organisational innovation
- Prevailing tool to increase productivity
- Identification of four fields of organisational innovation
### Classification of Organisational Innovation

<table>
<thead>
<tr>
<th>Type of Organizational Innovation</th>
<th>Focus of Organizational Innovation</th>
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<tbody>
<tr>
<td><strong>Procedural Innovation</strong></td>
<td><strong>Intra-Organizational</strong></td>
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<tr>
<td></td>
<td>- Job enrichment / job enlargement</td>
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<td>- Simultaneous engineering / concurrent engineering</td>
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<td>- Continuous Improvement Process / Kaizen</td>
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<td>- Quality Circles</td>
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<td>- Quality audits/certification (ISO)</td>
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<td>- Environmental audits (ISO)</td>
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<td>- Zero-buffer-principles (KANBAN)</td>
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<td>- Preventive maintenance</td>
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<tr>
<td><strong>Structural Innovation</strong></td>
<td><strong>Inter-Organizational</strong></td>
</tr>
<tr>
<td></td>
<td>- Cooperation / networks / alliances</td>
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<tr>
<td></td>
<td>- (R&amp;D, production, service, sales, etc.)</td>
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<td></td>
<td>- Make or buy / Outsourcing</td>
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<td></td>
<td>- Off shoring / relocation</td>
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<td>- Just-in-time (to customers, with suppliers)</td>
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<td>- Single / dual sourcing</td>
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<td>- Supply Chain Management</td>
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<td>- Customer quality audits</td>
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</table>
The evolution of services in the value chain

A. From manufacturing firms’ value added to the recognition of services in the value chain (Porter)
The evolution of services in the value chain

B. From the recognition of services to the role of innovative service functions in value chain

- Identification of five types of innovative functions
  - Technological innovation
  - Organisational innovation
  - Strategic innovation
  - Commercial innovation
  - Operational innovation

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### Innovative functions

<table>
<thead>
<tr>
<th>Principal elements of innovation</th>
<th>Business services (some representative sectors)</th>
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<tbody>
<tr>
<td><strong>Technological Innovation</strong></td>
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<tr>
<td>* Greater integration of technology</td>
<td>* IT services</td>
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<td>* Use of existing technology</td>
<td>* Engineering services</td>
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<td>* Adaptation of technology to business needs</td>
<td>* Design services</td>
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<tr>
<td>* Efficiency in processes of information and communication</td>
<td>* Telecommunications Services</td>
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<td>* Automatisation of routine processes</td>
<td>* On-line services of electronic communication</td>
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<td>* Flexibilisation of productive structures</td>
<td>* Quality control services</td>
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<td>* Quality improvement</td>
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<tr>
<td><strong>Organisational innovation</strong></td>
<td></td>
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<tr>
<td>* Efficiency of internal organisation</td>
<td>* Management consulting and management</td>
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<tr>
<td>* Articulation of control and co-ordination processes</td>
<td>* Audits and legal services</td>
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<td>* Improvement of human factor selection, training and utilisation</td>
<td>* Manpower services (selection, training and temporary employment)</td>
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<td>* Improvements in the different functional specialisations</td>
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<tr>
<td><strong>Strategic innovation</strong></td>
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<tr>
<td>* Flexibility for dynamic environments</td>
<td>* Management services</td>
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<td>* Positioning in complex markets</td>
<td>* On-line services</td>
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<td>* Strategic information regarding alliances</td>
<td>* Audit services</td>
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<td>* Information regarding product adaptation</td>
<td>* Legal services</td>
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<tr>
<td>* Information regarding location and markets</td>
<td>* Fairs and exhibitions services</td>
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<tr>
<td>* Defence in a conflicting legal environment</td>
<td>* Marketing services</td>
</tr>
<tr>
<td><strong>Commercial innovation</strong></td>
<td></td>
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<tr>
<td>* Product competitive design</td>
<td>* Design services</td>
</tr>
<tr>
<td>* Innovative commercialisation</td>
<td>* Fairs and Exhibitions</td>
</tr>
<tr>
<td>* Taking advantage of opportunities</td>
<td>* Publicity</td>
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<tr>
<td>* Search and relations with the client</td>
<td>* Direct Marketing</td>
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<tr>
<td>* Innovative Marketing</td>
<td>* Public relations</td>
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<tr>
<td>* Image concern</td>
<td>* After-sales services</td>
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<tr>
<td><strong>Operational innovation</strong></td>
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<tr>
<td>* Functional division of labour</td>
<td>* Linguistic services</td>
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<tr>
<td>* Concentration on key tasks</td>
<td>* Courier services</td>
</tr>
<tr>
<td>* Operational capacity concern</td>
<td>* Security services</td>
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<tr>
<td>* Image concern</td>
<td>* Operational services</td>
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</tbody>
</table>
The evolution of services in the value chain

C. The role of KIBS in innovation systems and the move from value chain to value system
The evolution of services in the value chain

D. From services in a knowledge value system to services in the global value chain and the transformative power of service innovation

- New relationship between services and globalisation
- Three groups of service activities:
  - Services that make globalization possible by establishing transport, logistics and communication networks
  - Services that support the internationalization of sectors
  - Consumer services offered within global economy
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Management consultancy, strategy, corporate
Legal and tax advice
Market research, fairs
Marketing, advertising
Personnel services

Business services and advance support

Business globalisation
Infrastructure, connections and basic support

Transport & Internet logistics
Communications
Distributive trades
Access to global financial markets
Public services support

Infrastructure, connections

Consumer globalisation
Consumer services

Cultural, sports and audiovisual services
Tourism-related services
Education and social services
Other personal and social services
Buy of foreign goods
The evolution of services in the value chain

**Contribution of services to business performance and competitiveness**

- Facilitate a global access to capital and the production of globally-competitive technical innovations
- Influence markets by steering the export and trade of goods towards new markets or towards the adaptation of goods to local needs
- Allow the possibility of new business locations, which could lead to services relocation and offshoring of processes
The evolution of services in the value chain

Service providers and service innovation as the base of value chain transformation in industrial companies

- Conceptualisation focusing on:
  - Interactions between industrial enterprises, services providers and facilitators (value system)
  - Role of services and services innovation both in the full range of primary activities and support activities (service-transformed value chain)
Trends of organisational and service innovation in the value chain

Servitization

- From selling products to selling integrated products and services that deliver value in use
  - Example: Rolls-Royce Aerospace and total care solutions

- Whole new business model which no longer emphasises the maximisation of output and unit sales, but instead revenue generation via long-term customer relationships
  - Examples: Apps, John Deere
Trends of organisational and service innovation in the value chain

Example: JohnDeere

John Deere iGuide system (2007)

Uses GPS technology to automatically shift the steering pattern of the tractor to compensate for implement drift.
Trends of organisational and service innovation in the value chain

💡 Internationalisation and global value chain

- Take-off of international sourcing in services and the emergence of global production networks
- Global value chain concept focuses on the nature and content of inter-firm linkages and the power that regulates value chain coordination
  - Example: 3PL-services
Trends of organisational and service innovation in the value chain

-Cooperation / network / alliances
  - For the provision and distributions of services and products, but also for R&D and public procurement activities among others
  - Public-private innovation networks
    • Example: Construction and engineering consortia
Trends of organisational and service innovation in the value chain

Open Innovation

- Source of competitive advantage as it determines how cost effective firms manage to exploit knowledge commercially
  - Example: Lego
Trends of organisational and service innovation in the value chain

New business concepts

- Related-manufacturing technologies driven by new services, new reorganisation of operations
  - Examples of transformed concepts: Just-in-Time production systems, Supply Chain Management, customer quality audits
Thank you very much for your attention.