

University of Twente
The Netherlands

Service Innovation a multi disciplinary approach

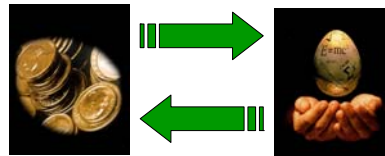
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introduction

- independent consultant
 - public and private organizations
 - impact of ICT based services
- university of twente
 - chair of telematics services
 - school of management and governance



overview

- what is a service?
- why are services of interest for the EU?
- how are we doing on service innovation?

- results of a quick scan in NL
- ExSer: centre for service innovation
- conclusions

what is a service?

- *‘a process consisting of a series of more or less intangible activities that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems’*

what is a service?

- intangibility or non-material
 - idea and concept
 - ownership
- inseparability
 - production and consumption
- heterogeneity
 - high variability of service delivery
 - no standards
- perishability
 - services cannot be stored
 - provider issue

what is a service?

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is this all we can say?

how intangible is a service?

- services require goods before they can be delivered
 - no taxi service without a car
 - no music without a MP3 player
- but also the other way around: no product without the complementary service
 - pre-sales
 - after-sales
- no economic activity without service

how inseparable is a service?

- a lot of services are provided invisible
 - my ISP drops e-mail in my mailbox
 - maintenance of my computer system
- and, products are delivered while I am waiting
 - car glass

how heterogeneous is the service?

- service standards are growing
 - reviews of restaurants
 - ICT-based service
- products become more and more heterogeneous
 - concept introduced by Dell: tailor made
 - car industry

how perishable is a service?

- the service can be consumed later
 - stage performance can be recorded
 - capacity can be used by others
- products can be perishable very well
 - food
 - fashion

what is a service?

- what does it do for the consumer?
- how are services invented?
- how are services produced?
- how are services experienced?
- how are services judged (Quality)?
- how are services innovated?

what is a service?

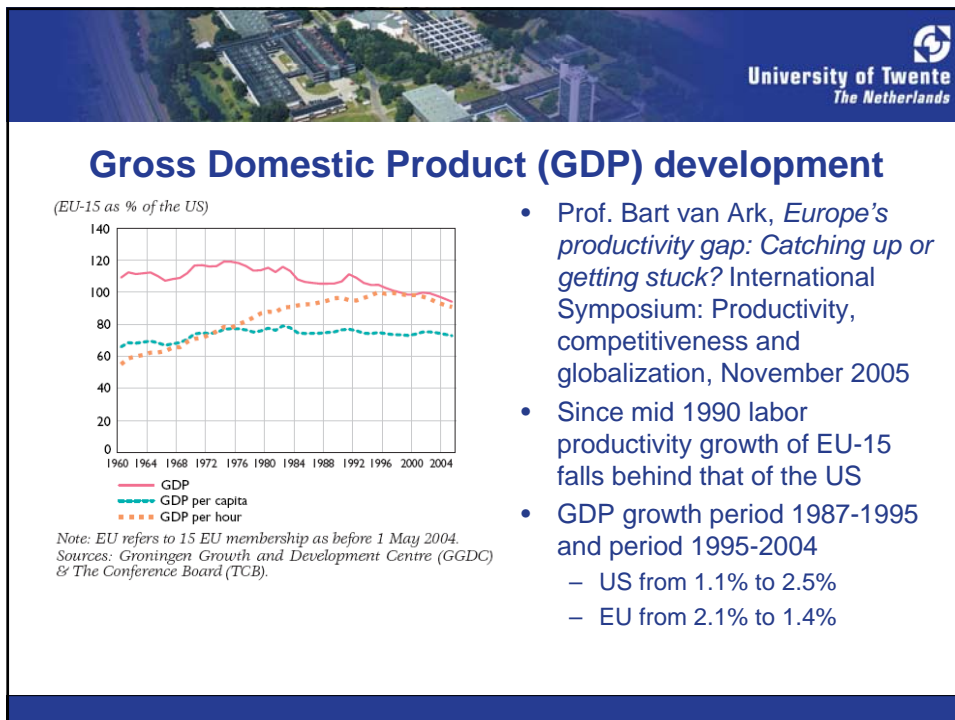
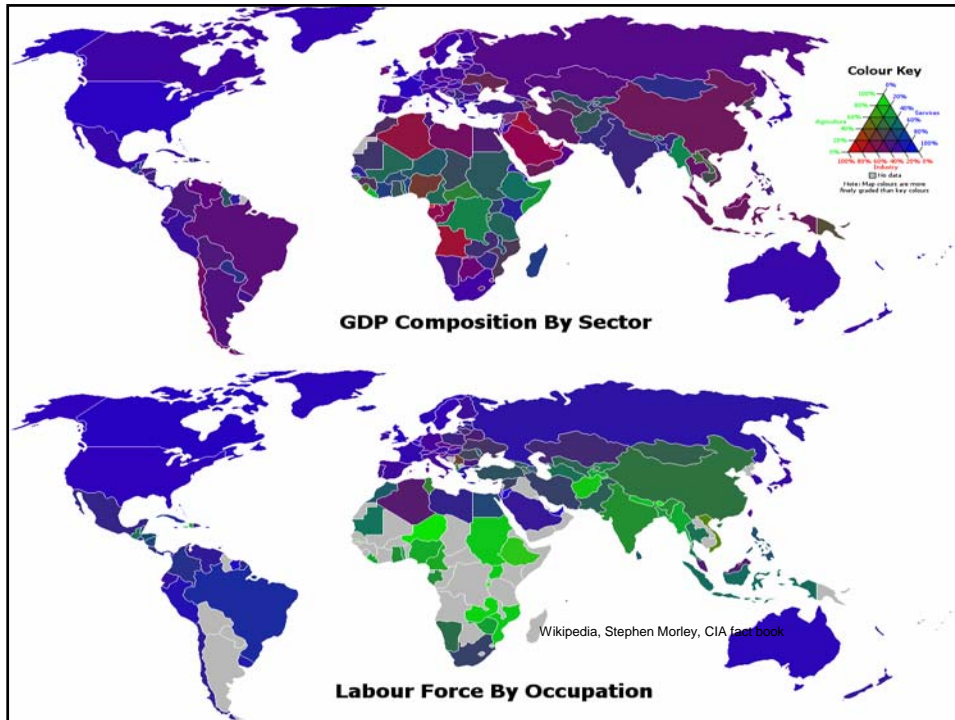
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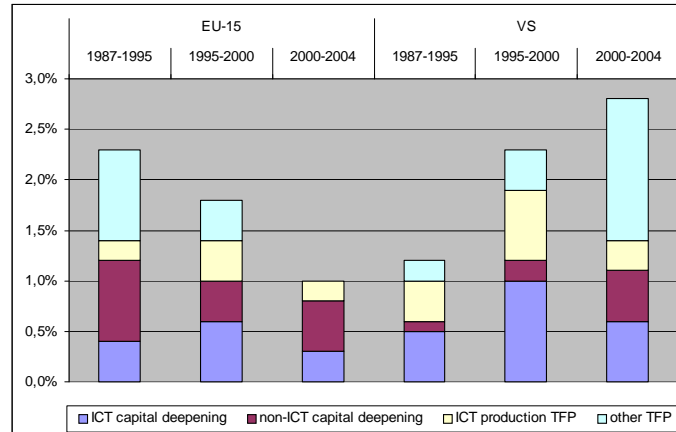
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sources of labor productivity growth in the EU-15 and the US, 1987-2004

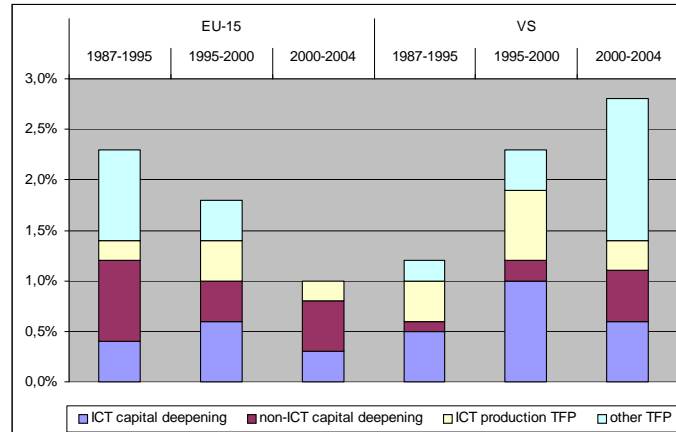


Europe's productivity gap: Catching up or getting stuck?, Bart van Ark, nov 2005

Total Factor Productivity (TFP)

- ICT capital deepening
 - investments in ICT
- non-ICT capital deepening
 - other investments
- TFP growth
 - growth not due to more people (labor) or more machines (capital) but smarter usage of a combination of that
 - smarter entrepreneurship
 - smarter organization
 - productivity of knowledge
 - ICT production TFP
 - non-ICT production TFP

sources of labor productivity growth in the EU-15 and the US, 1987-2004



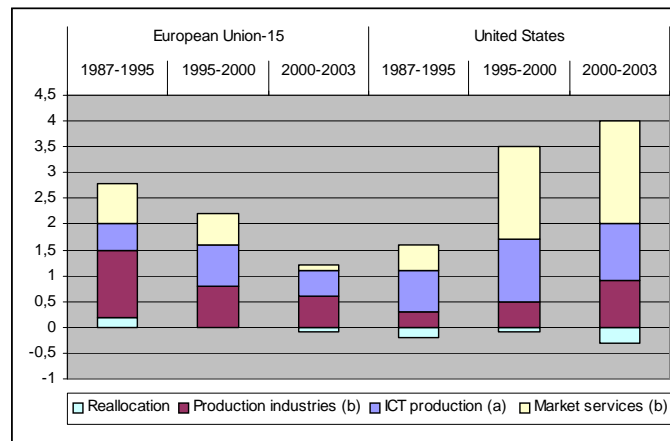
Europe's productivity gap: Catching up or getting stuck?, Bart van Ark, nov 2005

conclusion #1

- ICT capital deepening
 - EU is lagging behind US during all periods
 - increase after late 90s
 - return to pre 1995 levels after 2000
- TFP growth outside ICT industry
 - changes due to “smarter” use of ICT
 - after 2000 US 1.4% points
 - after 2000 EU-15 0.0% points
- but which sectors in the economy?

Source: Europe's productivity gap: Catching up or getting stuck?, Bart van Ark, nov 2005

industries contributing to market economy labor productivity growth, 1987-2003



Europe's productivity gap: Catching up or getting stuck?, Bart van Ark, nov 2005

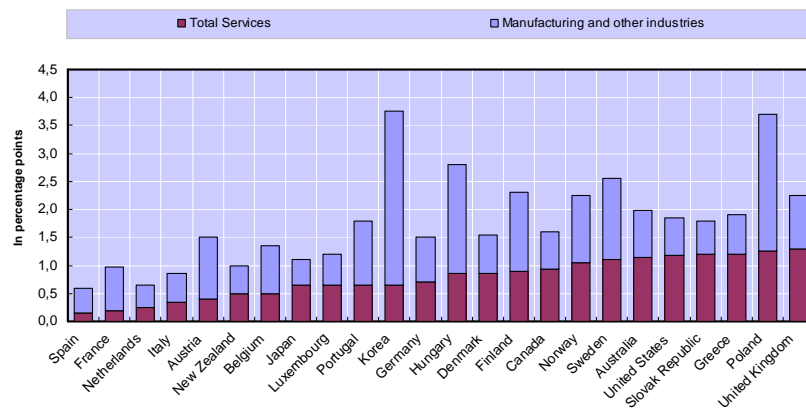
conclusion #2

- The market services industries in Europe benefit less from ICT than in the US
 - banking
 - airport
 - public transport
 - insurance
 - broadcasting
 - media
 - HRM
 - marketing
 - retail
 - ICT services
 - Internet Services
 - document services
 - telecom services
 - ...
- What do we know about innovations within service sector of our economies?

service economies...

- in developed economies, about two third of the Gross Domestic Product (GDP) originates in service sector
- in developed economies, about two third of the employment originates in service sector
- in recent years, almost all economic and employment growth in the business sector of Organization for Economic Cooperation and Development (OECD) countries was due to growth in services

Contribution of service sector to labor productivity growth 1990-2002

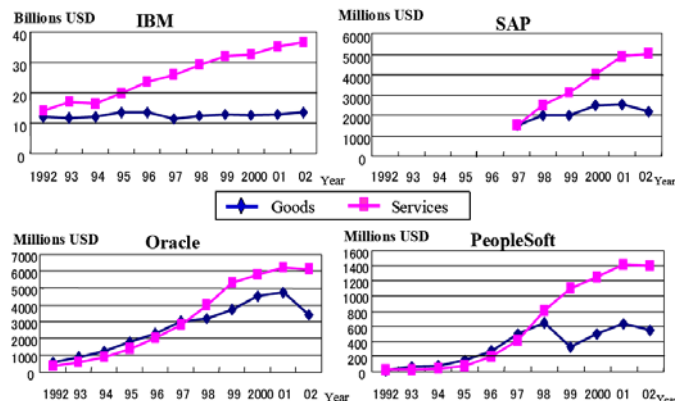


innovation and service

- innovation in services
 - innovation processes within service industries (as specified by the NACE and ISIC definitions)
- service innovation
 - innovation activity with services
- service providing companies
 - service sector companies
 - manufacturing companies providing complementary services
 - 25%-30% of revenue from product related services
 - 50% of employees in service related function
 - manufacturing company benefit from service innovation too

source: OECD

companies on the move...



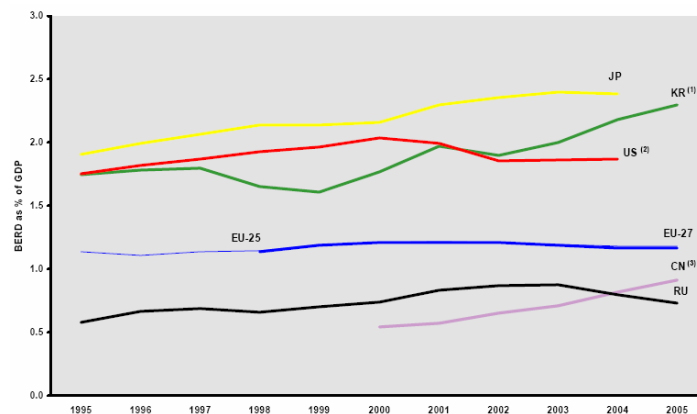
What is service science, Fujitsu Research Institute, December 2005

overview

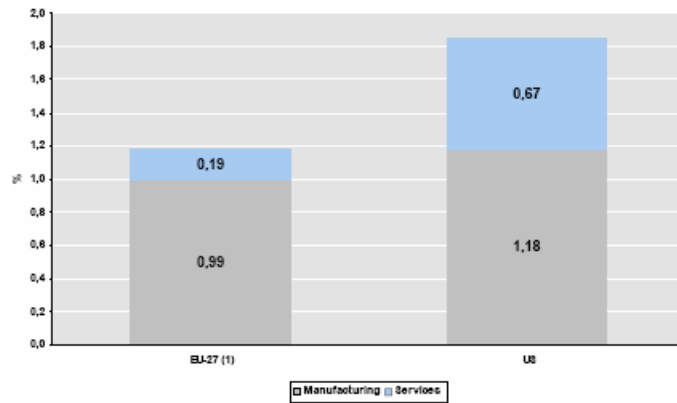
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(BERD) as % of GDP 1995- 2005

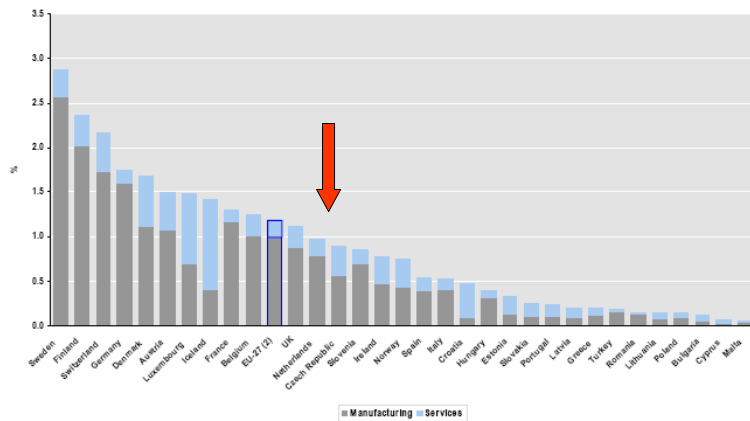


BERD as % of GDP 2003 in EU27 and US services and manufacturing



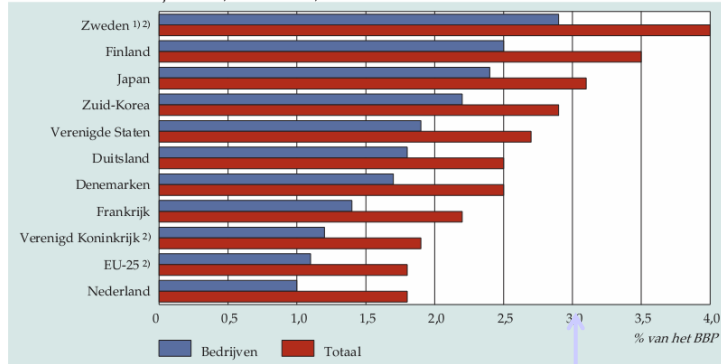
Source: DG Research Key Figures 2007, Data: OECD, Eurostat

BERD as % of GDP 2004



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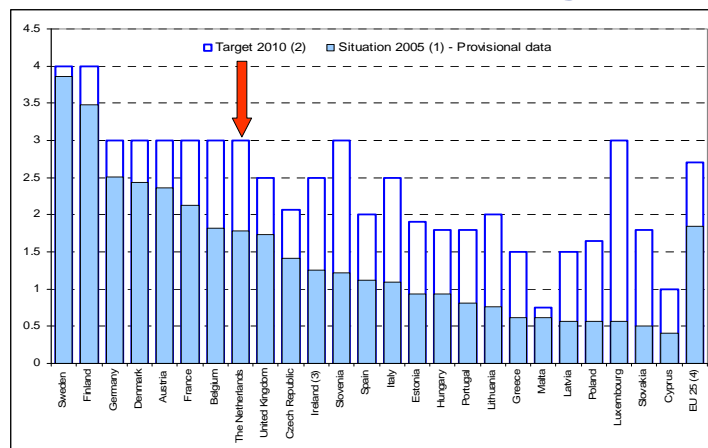
R&D expenditure (% of GDP, 2004)



Bron: OESO

Lisboa-target: 3,0% (of which 2/3 from business enterprises)

Lissabon doelstelling



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Quick Scan: service innovation

- 
- **service providing companies**
 - innovation managers of more than 30 companies
 - workshops on knowledge, skills and common interests
 - **universities and research organizations**
 - locating relevant scientific knowledge in NL
 - workshops on available knowledge and skills

service providing companies (1)

- service providing companies have a clear vision and a well-developed strategy for products and their market opportunities
 - developed together with their customers and suppliers
 - where needed, supported by consultancy firms
- there are more innovation activities in service providing companies than generally thought
 - they call it business development, marketing & sales, ...
 - information is not included in statistics

service providing companies (2)

- innovation activities are distributed across various departments and units of service providing companies
 - in general, a centralized R&D&I function does not exist
- innovation activities of service providing companies are weakly connected to the science infrastructure
 - universities, research organizations, colleges, schools,
 - however, some sector specific connections exist

service providing companies (3)

- when service companies co-operate with research organizations, it is almost always ICT dominated
 - company software
 - internet and web
 - multimedia

service related research (1)



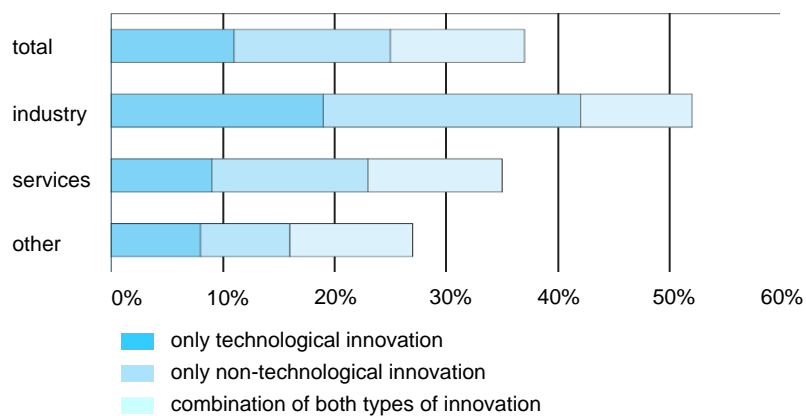
- The Netherlands
 - 13 universities
 - five major R&D organizations
- web survey
 - snow ball
 - preliminary results
- relevant disciplines found
 - economics/econometrics
 - political sciences
 - management sciences
 - marketing
 - sociology
 - psychology
 - ICT
 - industrial design
 - others...

service related research (2)

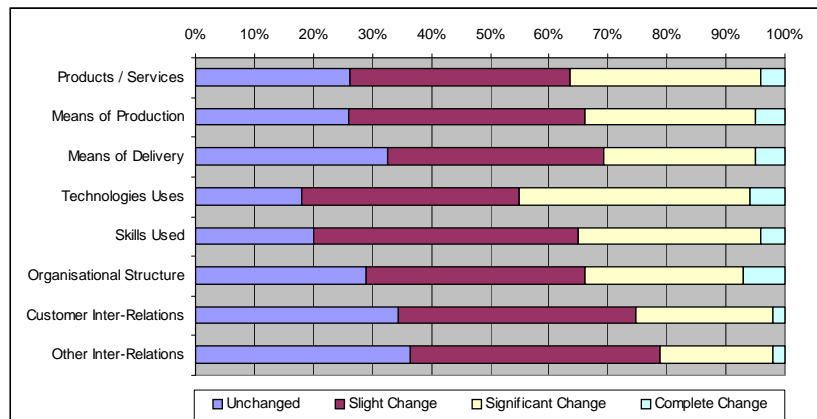
- there exists a small community of (academic) researchers specifically working on service innovation
 - a dozen scientists at universities and other research organizations
- the number of researchers working on areas related to service innovation is much higher
 - several hundreds scientists, scattered across the country

non-technological innovations

- % of NL companies (>10 employees) about type of their innovation (technological/non-technological)



significance of non-technological changes in service innovation



Howells, J. and Tether, B. (2004) *Innovation in Services: Issues at Stake and Trends*,
Inno-Studies Programme (ENTP-C/2001), Commission of the European Communities, Brussels

conclusions (1)

- different ways of open innovation may accelerate and strengthen service innovation in NL (and EU)
 - exchange of best practices across different economic sectors
 - horizontal alliances: standardization
 - vertical alliances: cross value chain co-operation
- service innovation requires multidisciplinary knowledge, e.g., technology, economy, behavioral sciences, law, ...
 - investment in technology alone will not suffice
- improved management of service innovation within private and public organizations is needed
 - effective, efficient, creative...

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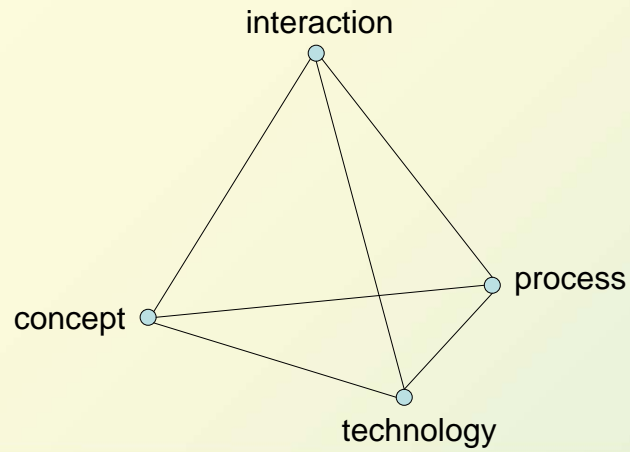
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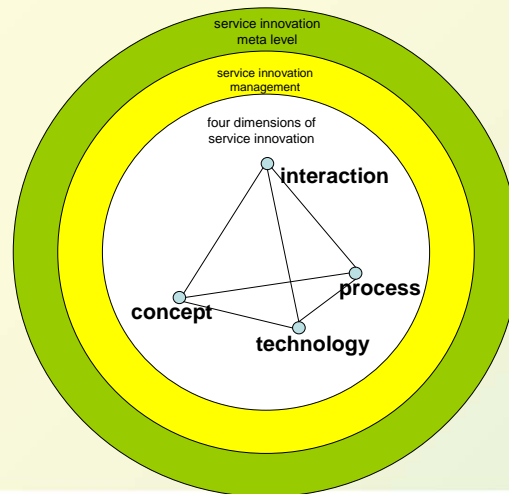
center of service innovation

- EXSER mission
 - stimulate innovation driven growth
 - strengthen international competition position
- EXSER strategy
 - professionalize innovation function
 - strengthen strong position in services
 - create excellent services innovation culture

four dimensions of service innovation



EXSER activities



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conclusion

- policy
 - complement existing industrial and technology driven system by a demand and customer driven innovation system
 - improve EU and national innovation system
 - multi disciplinary and multi sectoral
- (service) business
 - improve innovation management within company
 - use best practices from other sectors
 - make use of available relevant scientific knowledge
- science
 - further services research is needed
 - multi disciplinary research by nature

