

Service Engineering – A Transdisciplinary Approach in Services Research

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Service Engineering – A Transdisciplinary Approach in Services Research

- 
- **Welcome**
 - **The German Initiative »Partners for Innovation«**
 - **The Federal German Service Research Initiative**
 - **Service Engineering: New Perspectives on Service Development**
 - **Service Research: Challenges and Needs for Action**



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Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO (Fraunhofer Institute for Industrial Engineering)

- Founded 1981
- 180 employees
- €28 million p.a. Research volume
- Head of institute
Prof. Dieter Spath
- Project volume: 300 research
and consulting projects p.a.



Institute Center, Stuttgart



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Initiative »Partners for Innovation«

Background:	Chancellor Schröder announced the necessity of measures to revise the innovation system in Germany (Oct. 2003)
Objective:	Bring together leaders from business, research, government and trade unions to foster the creation of a new culture of innovation in Germany
Measure:	Establish a Public-Private-Partnership which builds new networks of competence to develop new loci of innovation
Steps:	<p>Establish the kernel »Partners for Innovation«</p> <p>Realize an appropriate model of organization which allows for decentralized expert engagement as well as for the establishment of shared goals and guidelines</p>
Results:	Since May 2004: more than 400 experts in 15 working groups are engaged in advancing Germany's innovation system by creating and realizing concrete projects and by formulating needs for action which help to eliminate obstacles.

More Information:
www.innovationen-fuer-deutschland.de



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The Impulse Circles

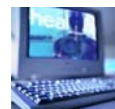
The Impulse Circles are managed by a high ranked person from the respective partner organization

System innovation

- Human Resources
- Innovation in SME
- Interaction economy, research, policy
- Efficiency of the research system
- Government as factor of innovation

Technology innovation and markets

- Mobility & logistics
- Material innovation
- Energy
- Information & communication
- Services
- Health
- Nutrition

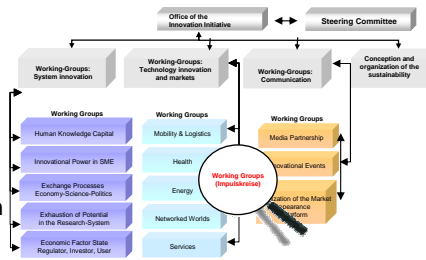


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The Working Groups (Impulskreise)

Working Groups...

- ➔ ... are powerful, highly qualified, interdisciplinary units.
- ➔ ... mirror the partnership for innovation on the operative working level
- ➔ ... design thematic horizons and concepts in and from the future (2010).
- ➔ ... develop visions, concrete pioneer activities and recommendations for actions.
- ➔ ... bundle individual and institutional commitment into visible initiatives.



Numerative Facts about the Initiative

»Impulse- Circles«

15 Impulse-Circles were initialized in 2004.
More than 400 people are working together in those Circles.



»Pioneer-Activities«

More than 60 Pioneer-Activities were initiated out of the so called »Horizonts 2010« in the first year of the initiative.

»Recommendations for action «

96 recommendations for action were made in the »Impulse-Circles.
They are documented in interim statements of the Impulse-Circles



Impulse Circle »Services« Partners and Activities



Partners

Audi AG
 Roland Berger Strategy Consultants GmbH
 Bundesministerium für Bildung und Forschung
 Bundesministerium für Wirtschaft und Arbeit
 DIN Deutsches Institut für Normung e.V.
 Evangelische Gesellschaft e.V.
 Fraunhofer IAO
 GEA AG
 IBM Deutschland GmbH
 Karlsruher Versicherungen
 Katholische Universität Eichstätt-Ingolstadt
 Metro AG
 Siemens Business Services GmbH
 ver.di Vereinigte Dienstleistungsgewerkschaft
 Zentralverband des Deutschen Handwerks

Activities (examples)

Radio Frequency Identification (RFID):
 Identification and development of new services for RFID technologies

Service science:
New forms of cooperation between service industries and universities

ServLab:
 Laboratory for testing and simulating new services

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»Pioneer Activity« Services Science

Current Situation

- Market services have become the main driver of the economy and the major contributor to productivity growth
- Business Related Services play a key role for the performance of national innovation systems
- Nevertheless there is a lack of awareness for the importance of innovations in services

The Concept of „Services Science“ Focusses on

- the special needs of knowledge intensive service companies
- the strengthening of the academic services research
- new approaches in the cooperation of scholars and practitioners
- new concepts of academic education and professional training
- the establishment of a transdisciplinary infrastructure

Initiated by:



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In Contrast to many Other European Countries Germany has a Public Service Research Initiative!

The situation in the early Nineties

In spite of increasing economic importance there was no special German research program for service topics.

Scientific publications concentrated on service management, service marketing, and service quality, and were strongly influenced by American studies.

No institutionalization of service research in the early Nineties (the first German professorship of service management was established in 1997 at the University of Eichstätt – Professor Stauss).

»Services for the 21st Century«

1995-1997:
Study »Service 2000plus« with more than 300 experts from academia, industry and politics under the overall guidance of Professor Hans-Jörg Bullinger (IAO).

1997-1998:
Funding of so-called »Prioritären Erstmaßnahmen«, i.e. »measures of high priority«, 114 projects with a total volume of 35.7 million German marks.

Since 1998:
Special research programs for services.

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Public Funded Initiative »Services for the 21st Century«

Objectives

Supporting the increasing dynamics of innovation in the service sector
Opening the scientific system for research in services



Funded research areas (examples)

Benchmarking of services
Management and organization of services
Service Engineering and Service Design
Standardization of services
Services in SME
Knowledge intensive services
Internationalization of services

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March 2006:

- Announcement of a New Research Program „Innovations with Services“
- Budget: 70 Mio. Euro / 5 Years

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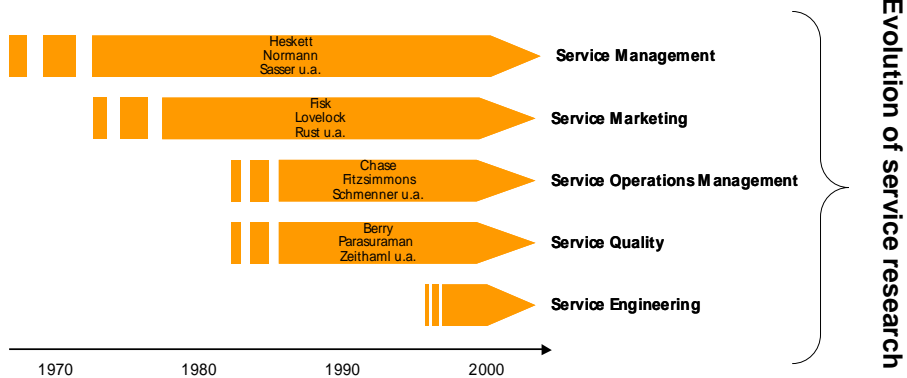


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Service Engineering: Towards a Transdisciplinary Perspective

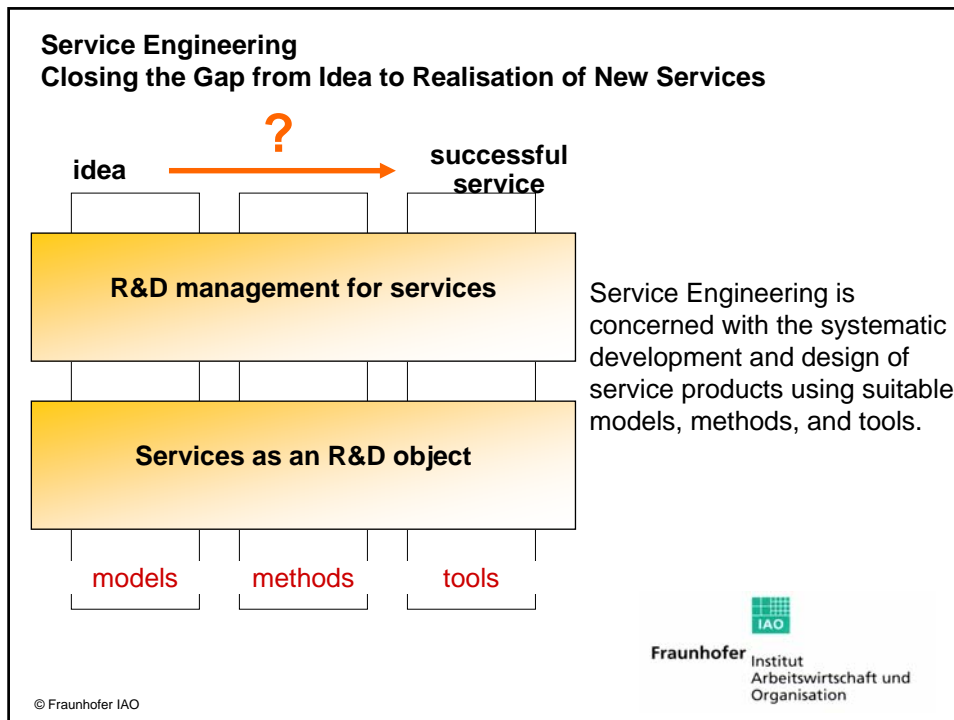


Interdisciplinarity
The use of methods & tools from other disciplines

Transdisciplinarity
The cooperation of different disciplines based on a scientific common ground

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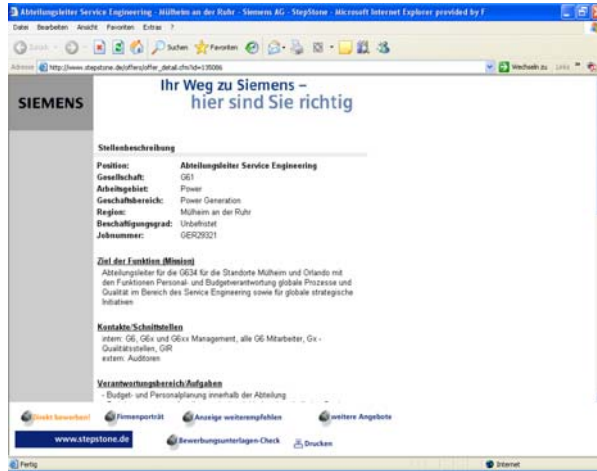
»The developing art/science of service engineering is so new that it really hasn't an agreed-upon name, much less an established body of principles and techniques.«

Karl Albrecht and Ron Zemke, Service America!, 1985

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Service Engineering Today – An Established Discipline?



Job offer:
»Head of Department
Service Engineering«

source:
www.stepstone.de, April 2005



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Service Engineering at Fraunhofer IAO – A View Back

1995/1996 First research activities at Fraunhofer IAO as well as first publications on Service Engineering.

1997/1998 So-called »Prioritäre Erstmaßnahme« (i.e. measures of high priority) on Service Engineering. Funded by the German Ministry of Research.



1998 Service Engineering is one of nine central topics in the first German service research program.



1999 Launch of extensive projects on service engineering funded by regional governments (v.a. Baden-Württemberg, Nordrhein-Westfalen).



2000 Launch of 18 projects with 76 partners funded by the German Ministry of Research. Numerous transfer activities (publications, conferences, university courses etc.)

since 2000 The term Service Engineering is increasingly used in international communities.



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Engineering a Product – Engineering a Service

Elements to transfer

models of development processes

process modeling

product modeling

integrated product development

Elements to incorporate

customer contact intensity

high degree of social interaction

high degree of emotional aspects

integration of social and behavioral sciences

Challenges

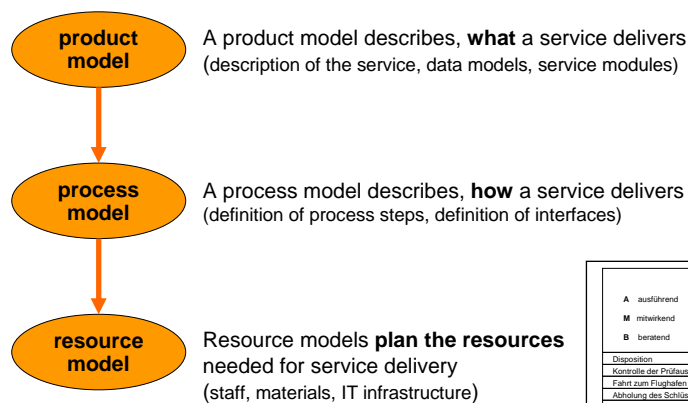
- ▶ Systematize development and delivery of services
- ▶ Create models, methods, tools that respond to the nature of services
- ▶ Cope with emotional and interaction aspects of the service experience



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Engineering Approach for Developing New Services



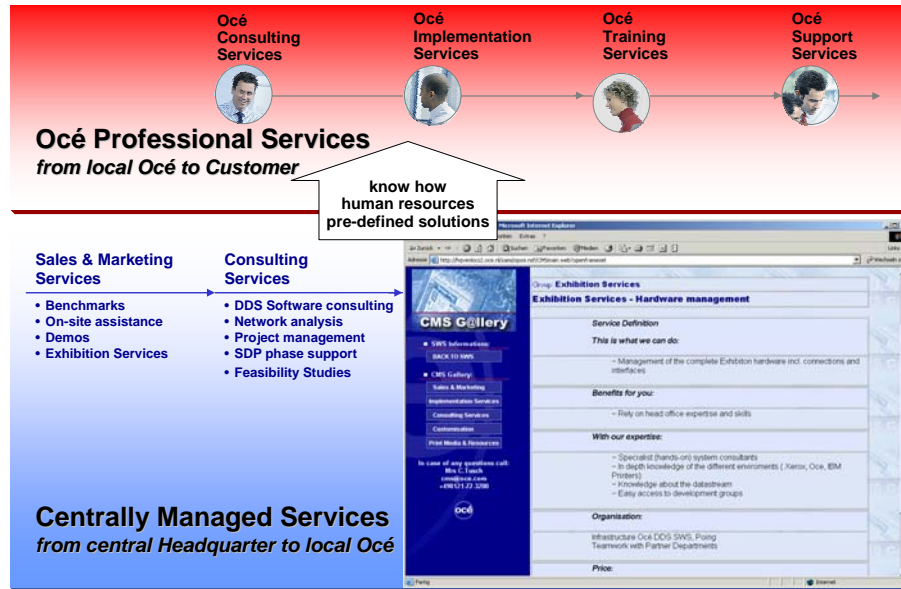
	Disponent	Einweiser	Prüfer	Prüfungsleiter	Prüfungsausschuss	Prüfungsausschuss	Prüfungsausschuss	Prüfungsausschuss	Prüfungsausschuss
	A	B	M	M	A	M	A	M	M
Disposition									
Kontrolle der Prüfausrüstung									
Fahrt zum Flughafen									
Abladen des Schiffs									
Reparatur des Fahrzeuges									
Probefahrt									
Zurückbringen des Schiffs									



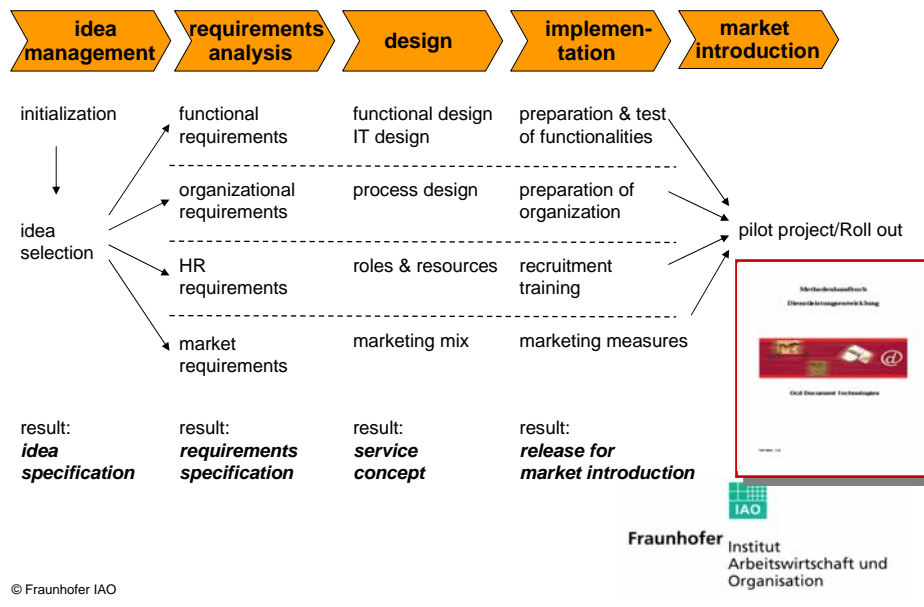
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Case Study: Océ Classification of Services and Definition of the Services Portfolio (I)



Case Study: Océ Implementation of a Process for New Service Development (II)



Perspectives of Service Engineering Developing Services in a Holistic Way

1 Multidisciplinary cooperation

- Service work
- Customer interaction
- Service aesthetics

Requirement:
Generate New Knowledge

2 Engineering know how

- Service prototyping
- Simulation and test of services
- Integration of technology and service development

Requirement:
Closer Integration of Engineering Disciplines

3 Interplay of science and practice

- Assessment of potential in companies
- R&D management departments for services
- Contribution to the innovative ability of SMEs

Requirement:
Enable Research Projects with Companies

4 International networks

- Raising the profile of European research
- Building an international community
- Establishing a leading international position

Requirement:
Creating Platforms

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ServLab: Objectives



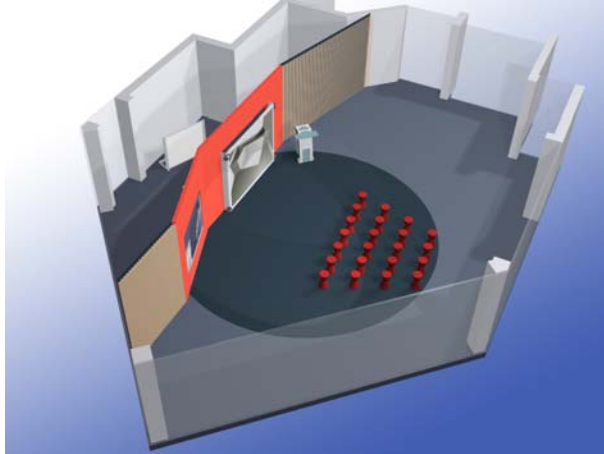
The ServeLab aims to

- demonstrate the basic feasibility of an holistic development environment of services
- provide a platform for the transdisciplinary development of services with interested partners
- provide important impulses for an accelerated development of new services in enterprises

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ServLab: Layout and Technology



July 6th, 2006:
Official opening of the ServLab
during the 25th anniversary of
Fraunhofer IAO.

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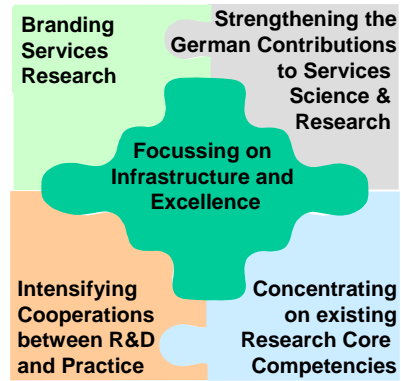

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Services Research: Challenges and Needs for Action

Challenges

- ☑ Branding Services Research: Service Science might be a good term
- ☑ To establish a worldwide division of scientific work
- ☑ Bundling German core competencies (eg. Service Engineering, Business Process Engineering and Socio-technical Systems Design)
- ☑ Developing knowledge on the sustainability and continuation of research results in cooperation with practitioners
- ☑ Establishing a transdisciplinary infrastructure and create a worldwide Network of Excellence

Needs for Action



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Thank you for your attention

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