



Business from technology

COMBINING SCIENTIFIC AND SOCIETAL GOALS IN VTT'S SERVICE RESEARCH

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CONTENTS OF THE PRESENTATION

- Service research at the societal and organizational level – central topics in a nutshell
- Strengths and emerging topics in VTT's service research – by sectors and by issues
- Methodological approaches
- Societal impact in VTT's service research
- Collaboration in service research and an intra-organizational network
- Summary in three pillars: focus on real-life issues, linkage to scientific community and utilization of excellence in technology

SERVICE RESEARCH AT THE SOCIETAL LEVEL – CENTRAL TOPICS IN A NUTSHELL

- **Service economy and servitization**
 - development trends in international service markets (e.g. global sourcing)
 - productivity and its specificities in services (combining the provider's efficiency with effectiveness for the customer)
 - need for new policy instruments (e.g. dissemination of best practices)

- **Issues in various service sectors**
 - renewal of public services
 - the growth of knowledge-intensive services
 - increasing versatility in the servitization of manufacturing: knowledge-intensive services in addition to traditional maintaining, product-service interaction, the extension of servitization into process industry

SERVICE RESEARCH AT THE ORGANIZATIONAL LEVEL – CENTRAL TOPICS IN A NUTSHELL

- Accumulation of user understanding
 - the use value of service is always *co-created* with the customer (the basic argument of service-dominant logic)
 - the customer determines the value of service in a *specific context*
 - from usability studies to the broader examination of *user experience*
 - multiple roles of the customer: a citizen, a consumer etc.

- Implementation of user understanding in the provider's practice
 - the core question: how should firms integrate user understanding with their internal operations to secure their own profitability, immediate customer satisfaction and positive longer term impacts
 - the creation of shared understanding within the provider organization: “productization” as a learning platform

SERVICE RESEARCH AT THE ORGANIZATIONAL LEVEL – CENTRAL TOPICS IN A NUTSHELL (cont.)

- **Service management and organization**
 - development of new capabilities and culture
 - highlighting the role of strategy (strategy-in-practice)
 - practical solutions concerning the organization of service business (especially in servitizing manufacturing)
 - combining technology (ICT) and human aspects
 - business models (supply chain management, networking, ecosystems)

- **Service innovation**
 - innovations in service offerings: improvements, additions, re-combinations
 - linkage of service innovations to other types of immaterial innovations (organizational, social and systems innovations)
 - new types of innovation processes (rapid application)
 - significance of employee-driven innovation (balanced empowerment)

SOME IMPLICATIONS AND CONCLUSIONS

- **Need for multidisciplinary**
 - the central challenges in service research cannot be solved on the basis any single discipline, but we need dialogue between economics, engineering, social sciences, behavioral sciences etc.

- **Need for the reconciliation of the views of various 'schools'**
 - as regards service specific research, we need dialogue between the service marketing 'school' (highlighting the customer perspective) and the service engineering and operations management 'schools' (highlighting the provider's perspective)

- **Need for the combination of various methods**
 - both quantitative (statistical) and qualitative methods
 - modeling methods
 - narratives mapping customer experience

STRENGTHS AND EMERGING TOPICS IN VTT'S SERVICE RESEARCH BY SECTORS

- **B-to-B: industrial services and knowledge-intensive business services (KIBS)**
 - high-level research in installed-base services: 'equipment manufacturing'
 - several research initiatives in services linked to process manufacturing (e.g. forest industry)
 - active research in some KIBS sectors: software services, media and marketing, R&D institutions; also the phenomenon of 'kibsification' (e.g. security services)

- **B-to-C: public services and consumer services**
 - social and health care services (e.g. elderly care)
 - utilization of ICT in schools (e-learning)
 - transportation and logistics services
 - technical trade and retail services (e.g. future shop)

STRENGTHS AND EMERGING TOPICS IN VTT'S SERVICE RESEARCH BY ISSUES

- Value chains, networks and business models
 - *VTT's core area in service research*; traditionally in industrial services, nowadays also increasingly in the public sector (e.g. PPP models)
 - understanding and managing networked operational practices (e.g. integrated solutions in B-to-B service networks)
- Customer understanding, customer participation
 - applying the abundant research on consumer sectors to B-to-B context (e.g. diversity in the purchasing behavior and its managerial implications)
- Human-technology interaction
 - an important area in ICT-related research (e.g. a web application which combines user-created multimedia with learning processes)

STRENGTHS AND EMERGING TOPICS IN VTT'S SERVICE RESEARCH BY ISSUES (cont.)

- **Service culture**
 - managing the transition from product-oriented to service- and value-oriented business logic
 - service capability (including efforts to classify these capabilities)
- **Organizational learning**
 - combining the strategic viewpoint, impact evaluation and foresight; applying this approach both intra-organizationally and in inter-organizational collaboration
- **Uncertainty management**
 - new capabilities needed when risks in service business are also seen as opportunities

STRENGTHS AND EMERGING TOPICS IN VTT'S SERVICE RESEARCH BY ISSUES (cont.)

- Innovation research at the organizational level
 - user-driven service innovation (e.g. approaches facilitating the user involvement, user involvement via social media)
 - co-development in service innovation, open innovation in services
 - generality, drivers and practices of innovation in services vs. manufacturing (SFINNO database)

- Innovation research at the societal level
 - mechanisms and actors in knowledge transfer (RTOs and KIBS)
 - applications of societal embedding – flexible stakeholder networks for scaling up societal and systemic innovations
 - fostering the collaboration between experts of different areas; linkages between foresight and innovation

VTT'S SERVICE RESEARCH IN COMPARISON WITH THE GENERAL SITUATION IN FINLAND (ANALYSIS BY TEKES)

	Strategy		Development		Execution
VTT	Fostering service infusion and growth	VTT	Stimulate service innovation	VTT	Branding and selling services
VTT	Improve well-being	VTT	Service design	VTT	Service experience through co-creation
VTT	Create and maintain service culture	VTT	Optimize service networks & value chains	VTT	Measure and optimize value of service

- need for new research
- research initiatives made
- focus of the Serve program

- VTT** good expertise in VTT
- VTT** growing expertise in VTT
- VTT** emerging expertise in VTT

Based on the categorization by Ostrom et al., 2010

METHODOLOGICAL APPROACHES

Specific strengths

- **Combination of several perspectives and approaches:**
 - innovation and foresight
 - macro and micro level (product, organizational and system levels)

- **Combination of several methodologies:**
 - quantitative and qualitative studies
 - external observation and action research

- **Development of new applications of existing methods**
 - Agora (experiential role taking)
 - impact evaluation -based learning
 - system modeling

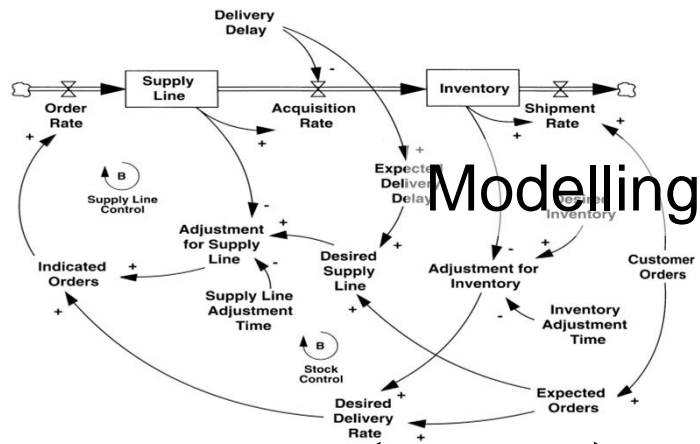
EXAMPLES OF METHODS

- **Case studies**
 - interviews and workshops
 - service design tools, service blueprinting, foresight tools

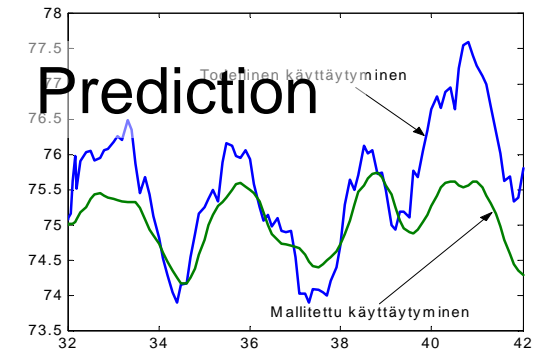
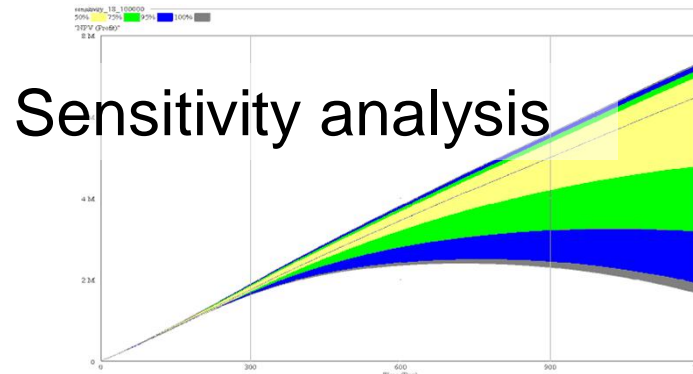
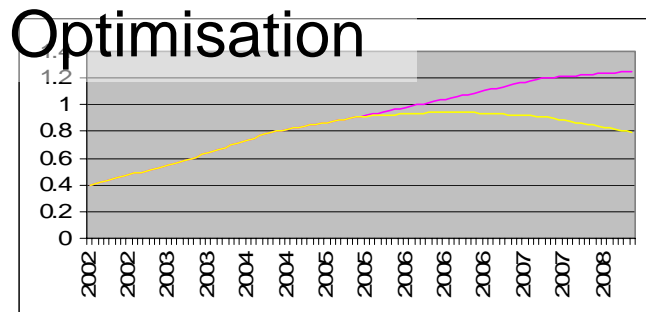
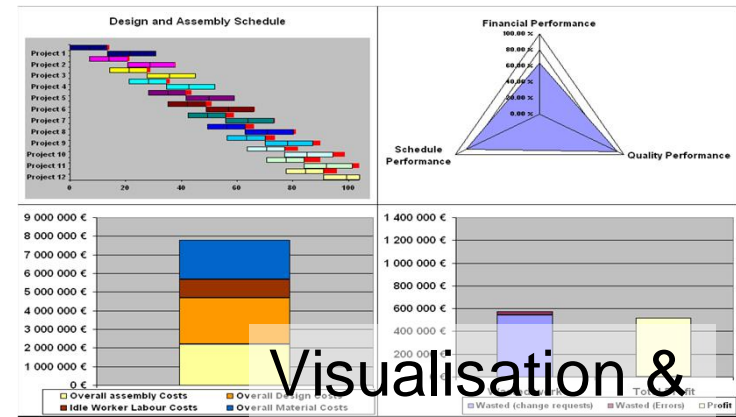
- **System dynamics and modeling**
 - used e.g. for optimization and prediction in industrial services and healthcare

- **Quantitative studies**
 - e.g. Sfinno database on innovation (includes some data on service innovation)

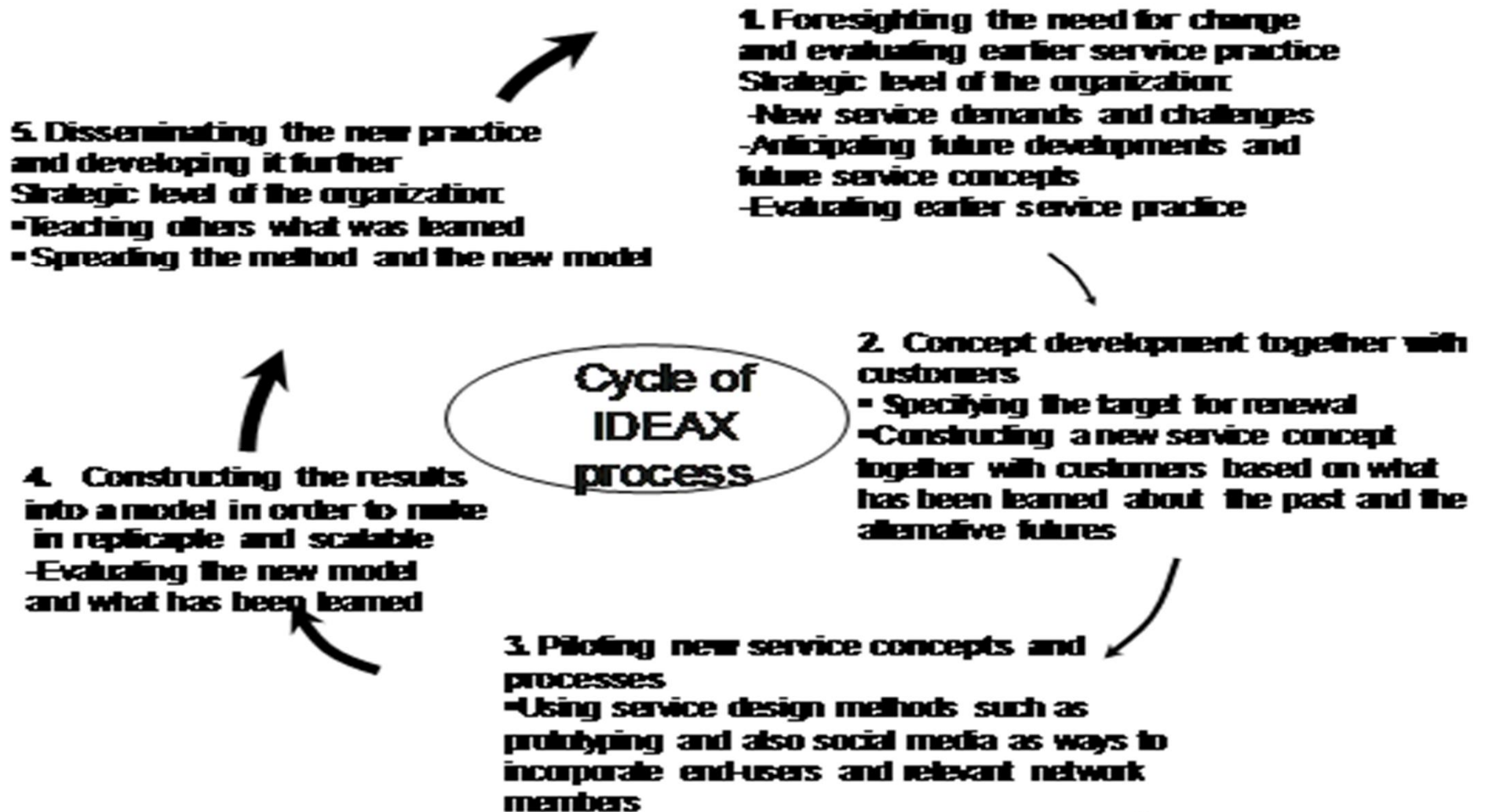
EXAMPLES OF METHODS: System dynamics of operational, tactical and strategic business processes



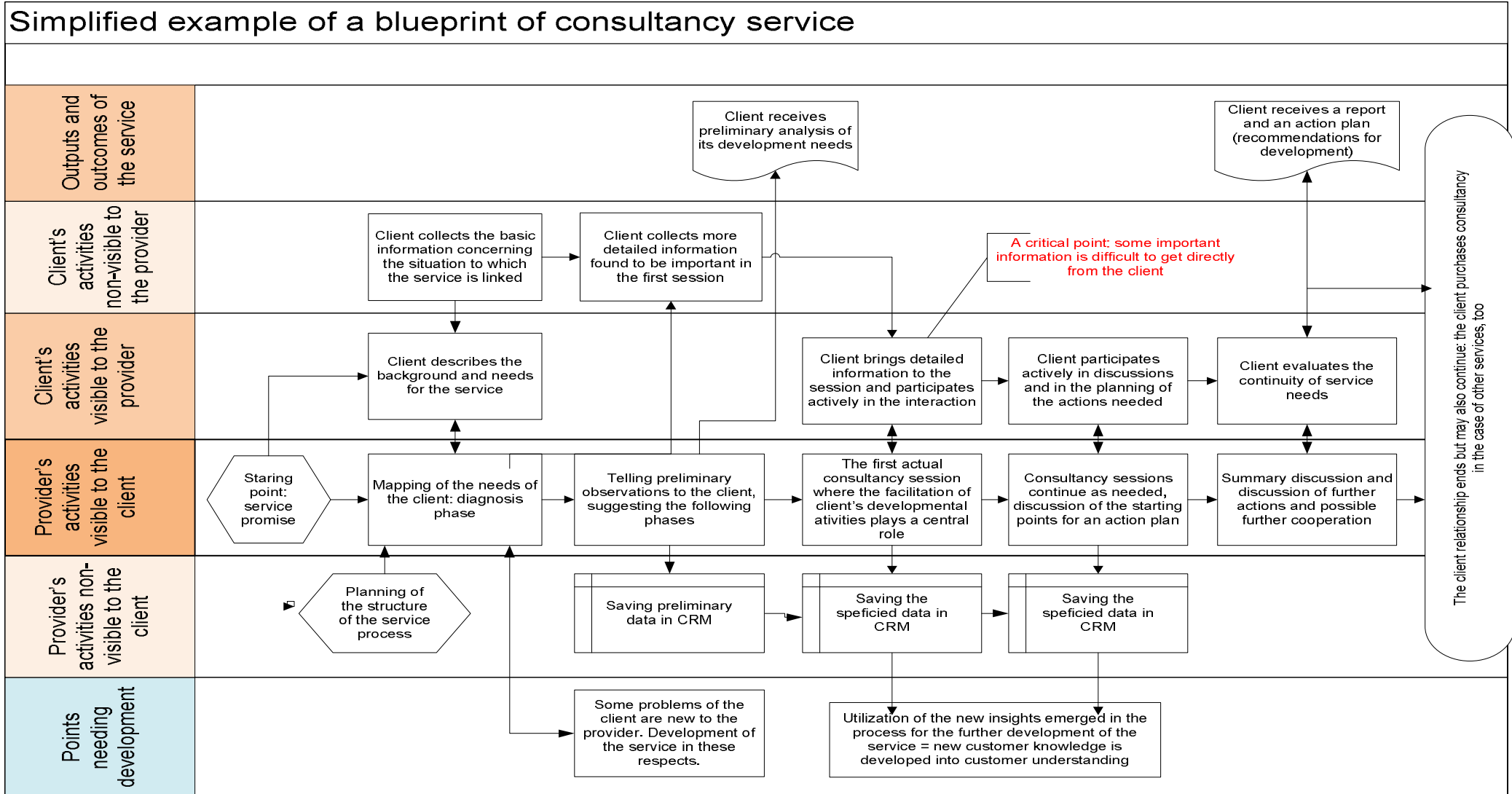
Source:
Peter Ylén
VTT



EXAMPLES OF METHODS: Supporting the organizational learning



EXAMPLES OF METHODS: Service blueprinting for the illustration of the customer 'path'



SOCIETAL IMPACT: VTT's COOPERATION WITH SECTORS AND CLUSTERS

- Sector-specific forums:
 - BestServ: technology industries
 - ServTech: technical trade

- Projects in SHOK programs
 - Tivit: Next Media (ongoing)
 - Fimecc: Futis and UXUS (ongoing)
 - Rym: New WOW (ongoing)
 - Forest Cluster: SePPI (in preparation)

- Research projects funded by Tekes always include companies.

SOCIETAL IMPACT: VTT'S WAY OF WORKING WITH COMPANIES AND PUBLIC ORGANIZATIONS

- tackling real-life problems, learning and seeking solutions together with companies and organizations (action research approach)
- results presented in a form which companies and organizations can concretely utilize
- providing newest scientific knowledge in the project area in a summarized form to practitioners
- benchmarking: companies participating in a project cooperate and learn from each other (e.g. in steering group workshops)

COLLABORATION IN SERVICE RESEARCH

- **Europe:** VTT is a member of RESER (European Association for Research on Services). Collaboration is particularly close with the universities of Roskilde, Karlstad, Cambridge, Manchester, Alcala (Madrid), Amsterdam and Lille, and Fraunhofer Institute.
- **USA:** On-going collaboration with the universities of Stanford, San Jose and Hawaii, and with IBM Almaden Research Centre.
- **Japan:** Tokyo Institute of Technology and AIST (National Institute of Advanced Industrial Science and Technology)

Domestically, collaboration is broad. Examples are Aalto University (BIT Research Centre and Service Factory), Tampere University (Synergos) and Lappeenranta University (SC Research).

PROMOTING SERVICE RESEARCH VIA AN INTRA-ORGANIZATIONAL NETWORK

- SSB (Service Science and Business) network was established in VTT at the beginning of 2009 to be a resource integrator in the area of services.
- The idea was to make service researchers working in different knowledge centers of VTT aware of each other's interests, projects and theoretical frameworks.
- Another central motive behind the network has been to develop new knowledge and skills in the area of services through multidisciplinary interaction.
- Workshops have been a central tool in the development of knowledge.

PROMOTING SERVICE RESEARCH VIA AN INTRA-ORGANIZATIONAL NETWORK (cont.)

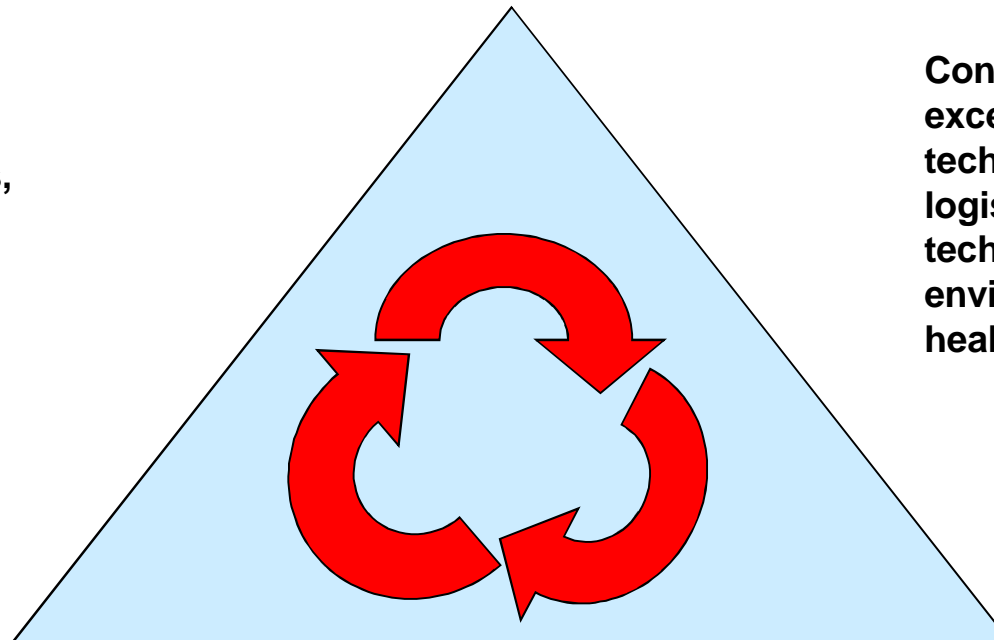
- The network has also been outward oriented:
 - inputs have been acquired from external speakers
 - results of VTT's service research has been disseminated both to academia and to companies.

- Currently SSB is focused on three tasks:
 - collecting together know-how concerning user-based service development
 - developing ways to combine different methodological approaches
 - supporting PhD students who work in VTT (for this purpose SSB has a subgroup of 16 students)

THREE PILLARS IN VTT'S SERVICE RESEARCH: FOCUS ON REAL-LIFE ISSUES, LINKAGE TO SCIENTIFIC COMMUNITY AND UTILIZATION OF EXCELLENCE IN TECHNOLOGY

Real-life issues: tightening international competition, challenges of environmental and social sustainability, changing societal structures (e.g. PPP models), servitization of manufacturing, increasing demand for knowledge-intensity, increasing openness and networking, the growing role of users etc.

**Scientific discourses:
e.g. evolutionary and institutional economics,
organization and management theories,
learning theories,
innovation theories,
systems theory,
design science, action
research – more
specifically, service
marketing and service
engineering**



**Continuously accumulating
excellence in different
technologies: ICT,
logistics, industrial process
technologies, bio and
environmental technologies,
healthcare etc.**



**VTT creates business from
technology**