

# Conceptualizing Product Service Networks

**PSS 101**

## PSS 101 - methods for Conceptualizing Product Service Networks

### About

This project aims to develop a framework of methods, techniques and tools supporting the design and development of Product-Service Systems (PSS). In particular, the framework is intended to improve conceptualization and communication between all parties involved in networked collaboration on PSS development across industries.

### Background

Product-Service Systems are typically developed in heterogeneous networks of Small and Medium Enterprises and departments in larger organizations with some kind of end-user involvement. These networks do not function as well as they should; partly because companies need to reshape their organizations to effectively deal with the demands of these networks and processes, partly because new techniques are needed to determine end-user needs, and involve end-users themselves in different ways. Although various design techniques address this problem, they are used in isolation and consequently industry faces difficulties with adopting them in developing PSS as a whole.

### Questions

This networked collaboration around the development of Product-Service Systems is the core issue in PSS 101. Main questions are:

- What barriers obstruct conceptualization and implementation in organizations (networks)? How can these be overcome?

- How must existing design research and design techniques be adapted to fit PSS?
- What new requirements do PSS impose on state of the art design methods in user-centered/interaction/experience design?
- How can existing methods be adapted to fit PSS?
- What are the needs for the next generation of users ('generation Y') in their interaction with PSS? How can appropriate interaction styles support this?

### Results

**Phase 1:** historical review and first formulation of framework for conceptualization and implementation of PSS.

This framework guides the development and coherence of all research questions, tool development, and the industrial case studies in phase 2.

**Phase 2:** iterative design and evaluation in case studies

Three case studies are conducted in complementary fields with the industrial partners.

Each case has a focus on developing PSS involving a PSS providing company and a network of its users. Tools and techniques are designed to support the exploration, conceptualization, and implementation process.

**Phase 3:** consolidation of final framework of methods, techniques, and tools.

### Facts

Duration: January 2011 to January 2015.

Funding: Fonds Economische Structuurversterking (FES).  
CReative Industry Scientific Programme (CRISP).



## Partners

- Delft University of Technology (Faculty of Industrial Design Engineering and Faculty of Technology, Policy & Management)
- Design Academy Eindhoven
- STBY
- 4C-MG
- Exact
- Océ Industries
- Zuidzorg

## People

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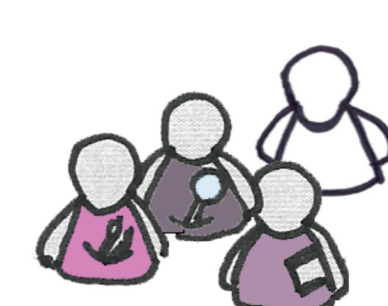
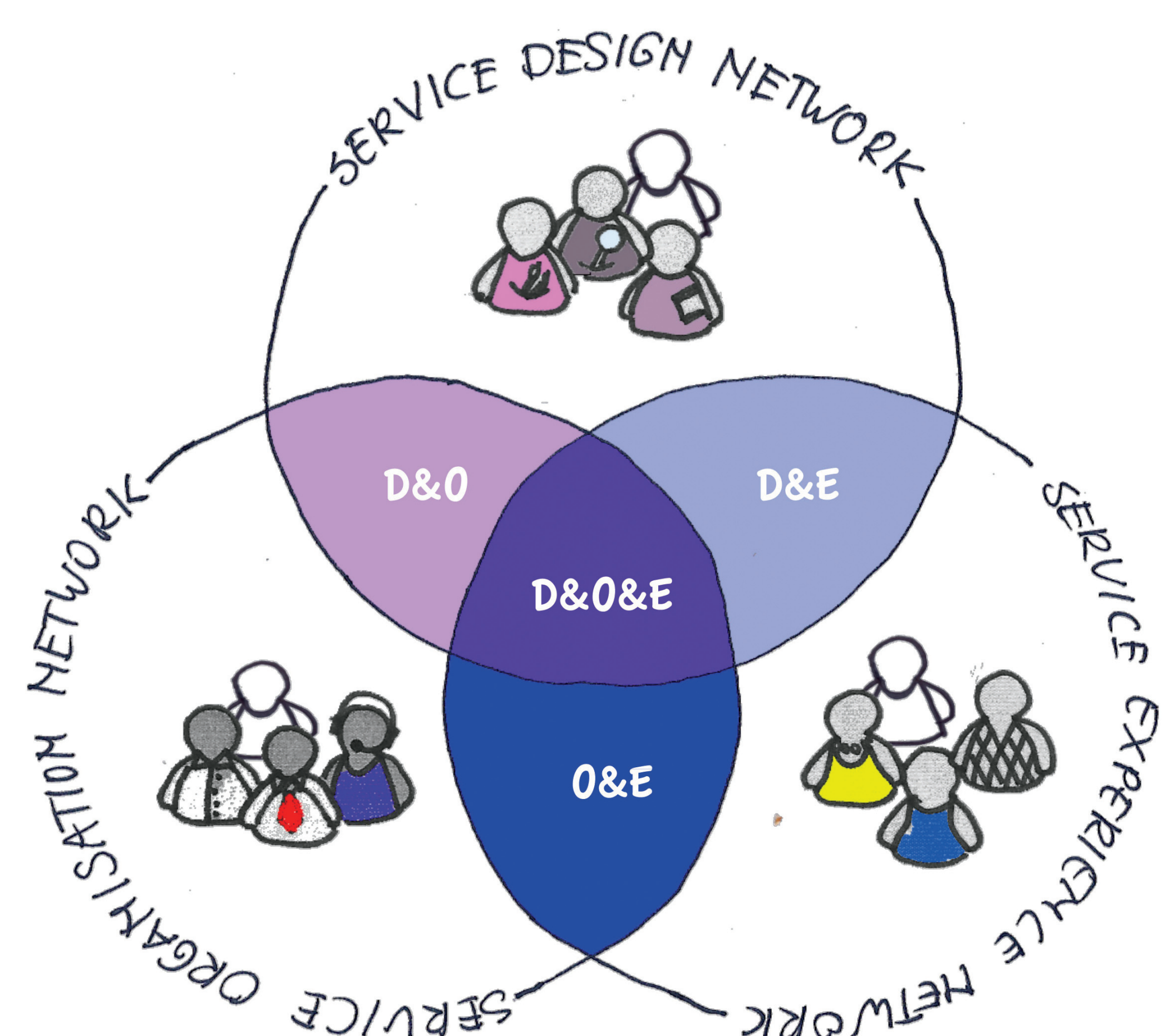
**Klaas-Jan Wierda**, Océ Industries, researcher.

## Case

This project aims to construct a framework of methods, techniques and tools enabling conceptualization and communication of product-services combinations with end-users. This framework should make links between knowledge (theory), skills (methods and tools) and practice (point of reference for practitioners as well as pointers towards applicability). Historical cases have already been reviewed and used to construct an initial framework. This initial PSN framework shows 3 fields illustrating the relevant networks and 4 overlapping fields illustrating the collaboration of the networks. These networks are labeled Service Design Network, Service Organisation Network, and Service Experience Network.

A first iteration of the framework has been established by reviewing best practices in lead cases in product and service design. The current version is guiding the retrospective case studies (Zuidzorg, Océ, Achmea). In the next phase, new tools are developed and tested within the upcoming case studies. The new framework aims to guide and tune existing human-centred design tools (e.g. participatory design and context mapping) towards product-service development. It also aims to establish a technological base for *product-service design thinking*, which can be applied in the context of Product Service Networks.

Case: An initial Product Service Networks framework



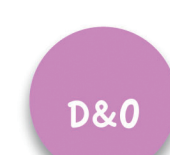
**Service Design Network:**  
Network of design professionals, researchers, consultants (business/strategy) and others responsible for designing product service systems and environments. Deploy design thinking, design skills, research skills and facilitating skills.



**Service Organisation Network:**  
Network of policy makers (responsible for service policy, vision and innovation), managers (managing service provision & development), providers (responsible for the service interfaces) and others. Working in public, private and volunteer organisations responsible for product service systems.



**Service Experience Network:**  
Network of people (consumers, professionals) using and experiencing product-service-systems.



**Collaboration between Design and Organisation Networks:**  
Design Networks designing, facilitating and consulting Organisation Networks in product-service-system development.



**Collaboration between Design, Organisation and Experience Networks:**  
Networks co-creating product-service-systems.



**Collaboration between Organisation and Experience Networks:**  
Organisation Networks engaging, connecting and supporting (and/or co producing) with Experience Networks in (new and continuous) product service system development.



**Collaboration between Design and Experience Networks:**  
Design Networks recognising, understanding and visualising Experience Networks in product service system development.