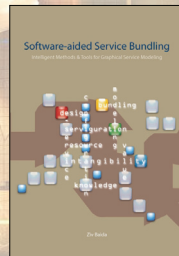


Software-aided Service Bundling – Intelligent Methods & Tools for Graphical Service Modeling

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SIKS Master Class
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Research Question

How can services be **modeled** such that the task of **designing service bundles** can be **automated**?



Service Bundling: Core Ideas

- **Reasons to bundle services**
 - Save costs (low marginal costs)
 - Increase revenues
 - Services are interdependent in demand
- **“A bundle of benefits” (Kasper et al. 1999):**
 - A customer is typically not interested in a product (service, good) itself, but in the benefits that the product presents him
- **Bundling logics**
 - Pure vs. mixed bundling, legislation,...

Two Perspectives: Customer & Supplier

Customers:
needs
and
demands

Suppliers:
actual
service
offerings

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Two distinct perspectives are required because customers typically use a different terminology and have a different view on their needs than suppliers

Bundling as Configuration

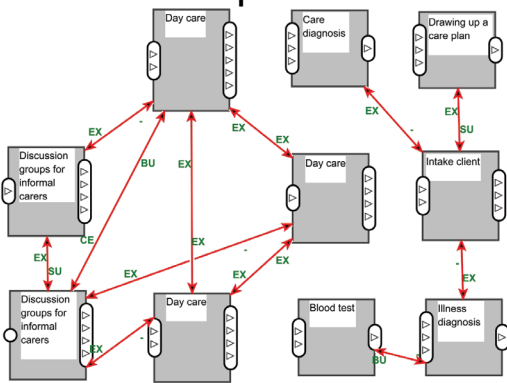
- **Services, described as components:**
 - Day care, home food catering, discussion group,...
- **Constraints:**
 - Service dependencies
 - Inherent (no loops, connect outcome to input, etc)
- **Customer requirements**
 - Social support, max ... euro/year

Customer: Hierarchy of Needs, Wants & Demands

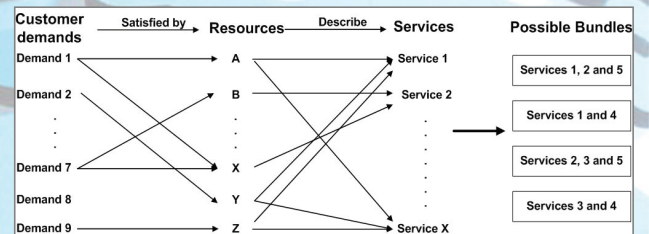
Kotler (1988) distinguishes **needs, wants and demands**

- A human **need** is a state of felt deprivation of some basic satisfaction
- **Wants** are desires for specific satisfiers of these deeper needs
- **Demands** are wants for specific products that are backed up by an ability and willingness to buy them

Supplier: Services as Components



Serviguration: From Customer Needs to Service Bundles



Dementia: Current State

- Variation, fragmentation and continuing change of care and welfare services
- Clients cannot see the wood for the trees



- ➔ No utilization of available services
- ➔ Lack of support, social isolation, overburden and illness of carers



Case Study Information

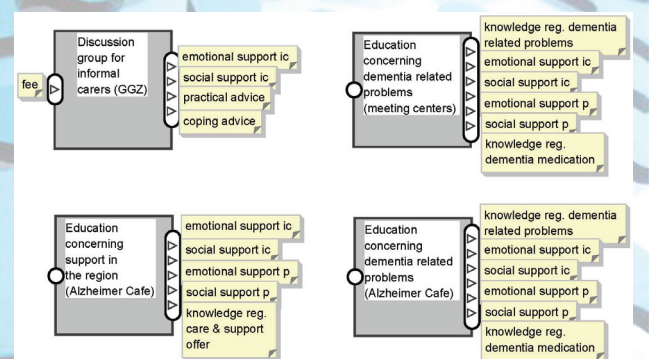
- 38 services
- Numerous service providers
- Theoretically 274,877,906,943 (2³⁸-1) different service bundles
- NDP as starting point



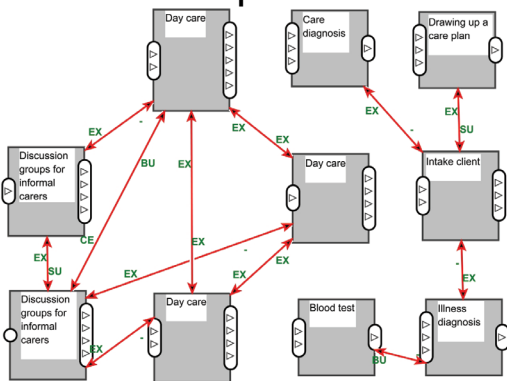
Customer: Hierarchy of Needs

Having to face everything on your own	Help with practicalities in the daily life with a patient	Education concerning practicalities in daily life with a patient
		Assistance with housekeeping Assistance with financial administration Food catering Wheelchair rental
	Social support	Companions contact for informal carers of people with dementia (via the Internet or in the physical world; one-on-one or in groups)
		Discussion group for informal carers of people with dementia (via the Internet or in the physical world)
	Support in coping with the changing behavior of a patient	Discussion group concerning how to cope with the changing behavior of a patient
		Information concerning how to cope with the changing behavior of a patient

Supplier: Actual Services



Supplier: Services as Components

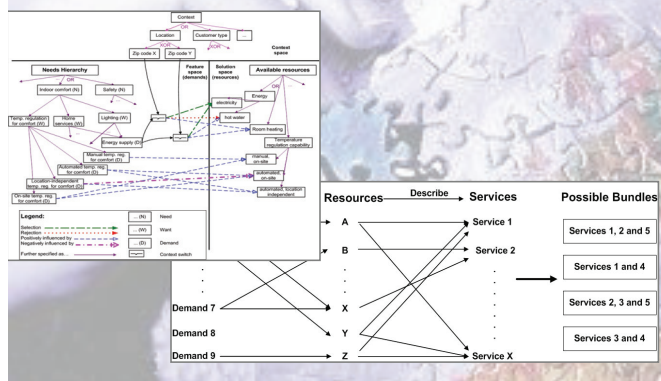


Customer Context

1. Global assumptions
 - Patient: dementia patient
2. Condition under which a given benefit (resource) can satisfy a demand
3. Condition under which a whole service qualifies as a solution



Serviguration: From Customer Needs to Service Bundles



Case Study Results (1)

1. Ontology validation
 - Generated bundles were good solutions
 - All suitable bundles were generated
2. Functionality is not a good criterion
3. Software tool to support communication with domain experts



Case Study Results (2)

1. The service ontology facilitates focusing on customers
2. The service ontology as a means to learn a domain in detail
3. Information gathering emphasized system importance

Service bundling itself is a service.
Who will offer it???



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