

Public Private Partnership Hospital Projects

Main Issues

INSTITUT FÜR TECHNOLOGIE UND MANAGEMENT IM BAUBETRIEB (TMB)



KIT – Universität des Landes Baden-Württemberg und
nationales Großforschungszentrum in der Helmholtz-Gemeinschaft

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Background


PPP for schools



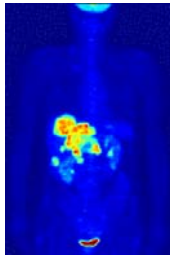


Quelle: www.gbgseelze.de

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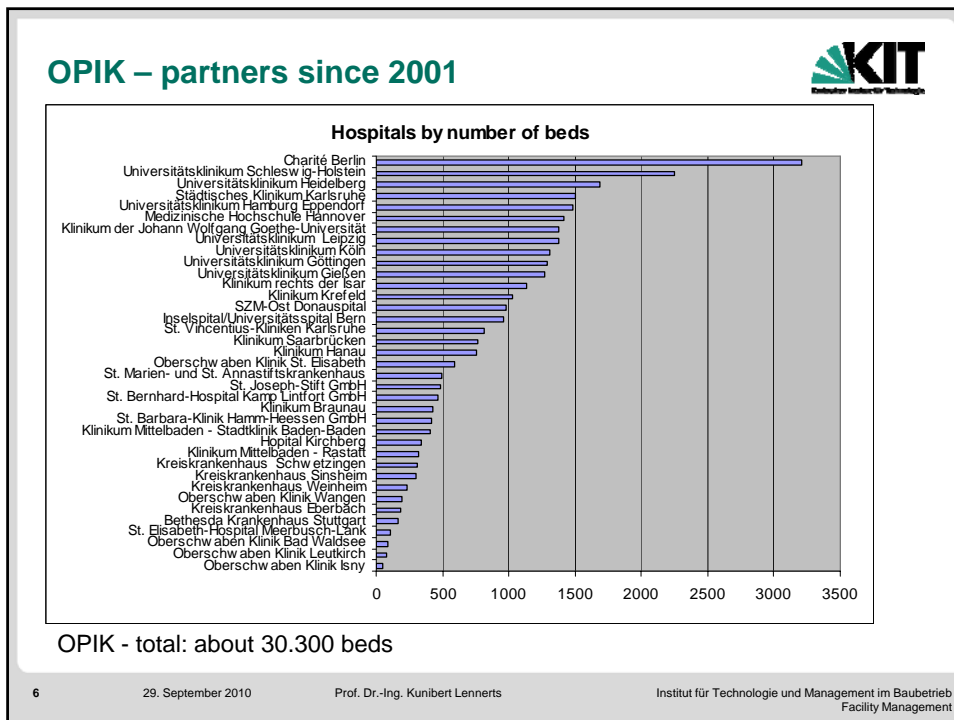
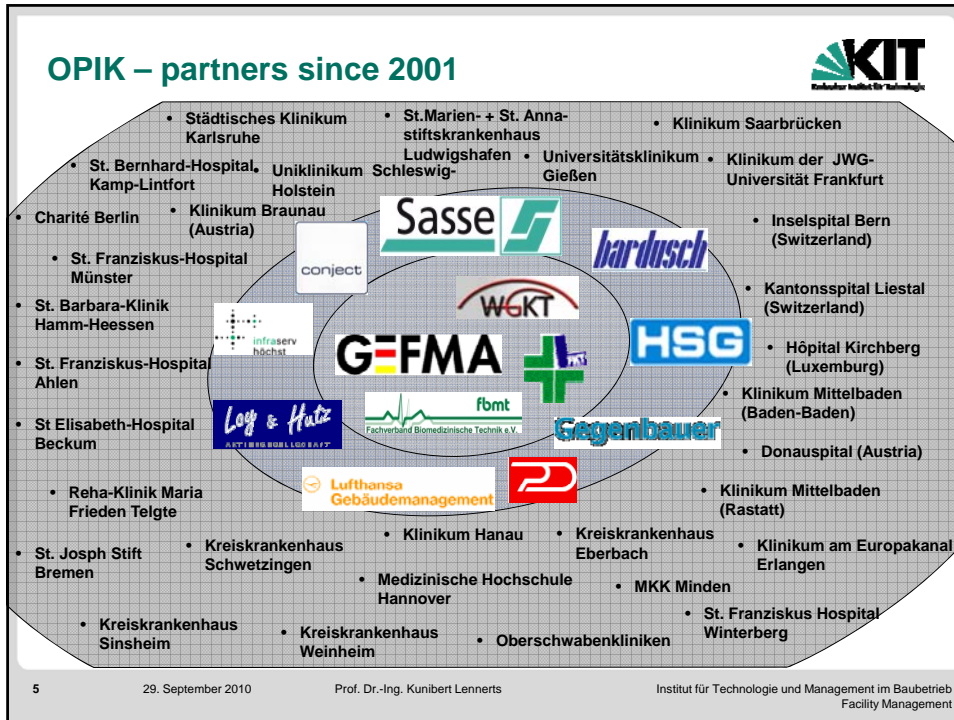
Development of biomedical equipment



- 1958 – first endoscope
- 1967 – first human heart transplant
- 1968 – first Knochenmarktransplantation
- 1971 – first CT
- 1974 – first MRT
- 1974 – Development of first PET
- 1983 – clinical use of MRT
- 1992 – first PACS

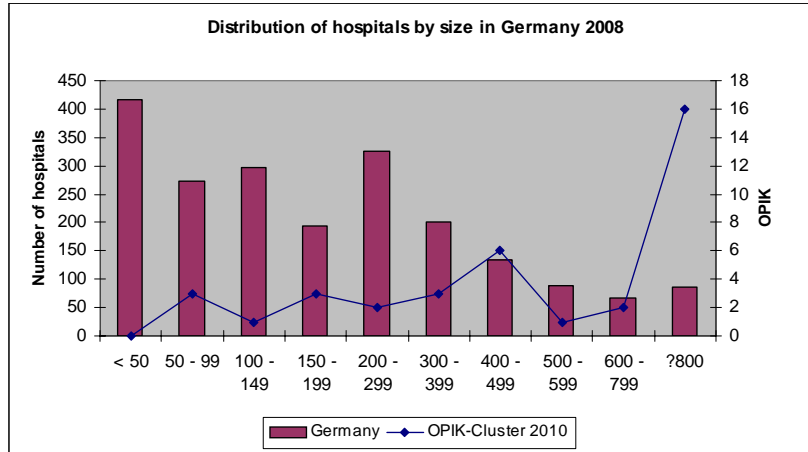



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Hospitals clustered by size – OPIK sample

Total number of hospitals in Germany in 2008: 2083



Source: Gesundheitswesen, Grunddaten der Krankenhäuser 2008, Fachserie 12 Reihe 6.1.1., Statistisches Bundesamt Wiesbaden, 2009

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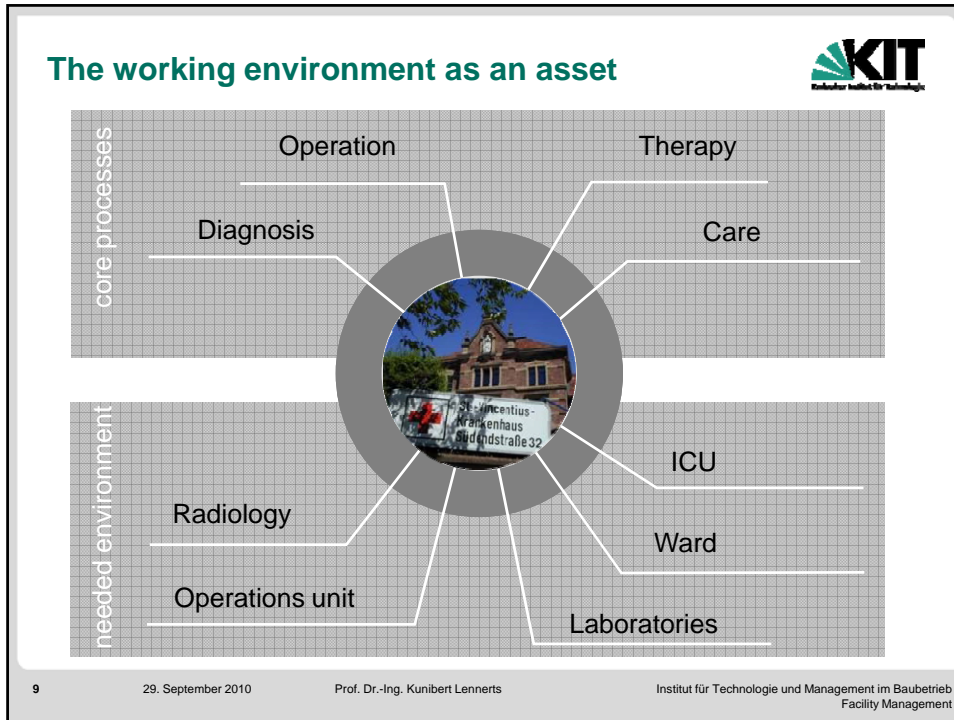
Product orientation

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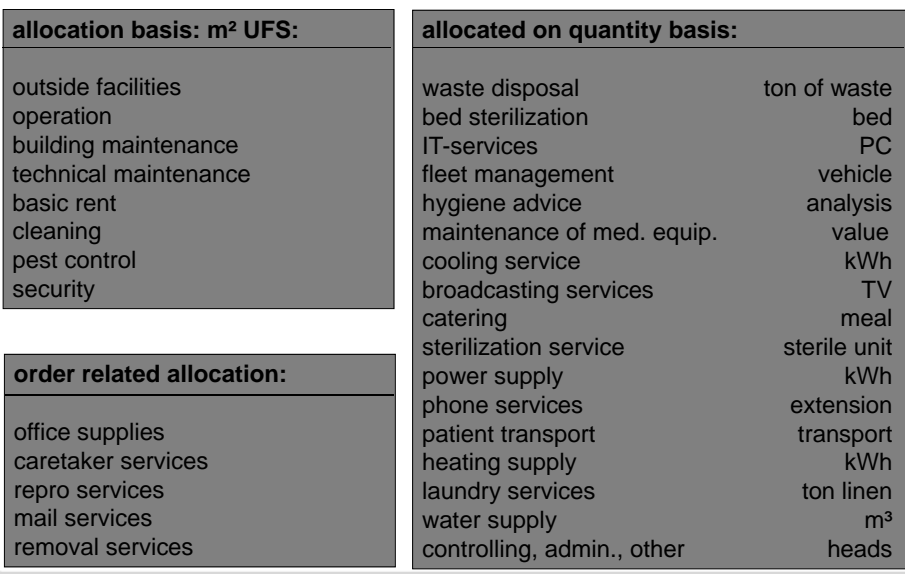
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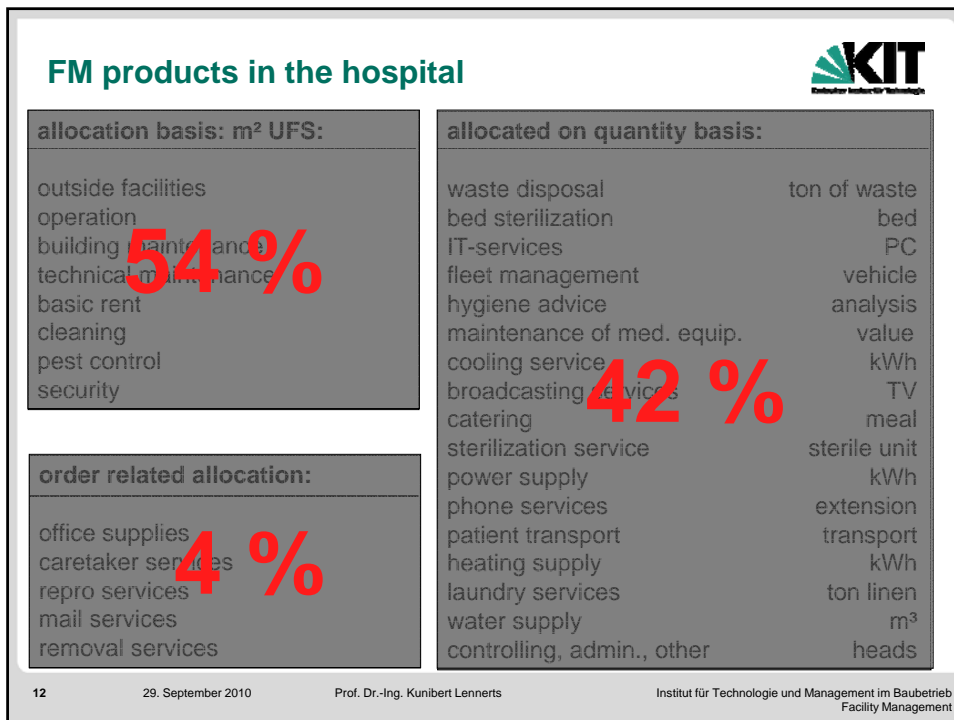
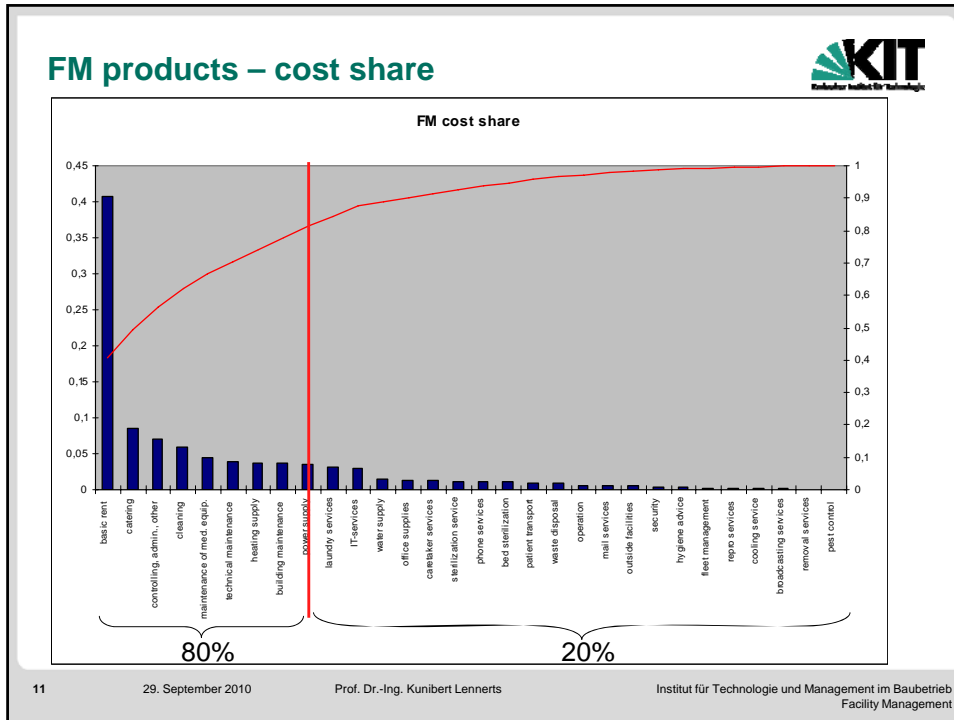



FM products in the hospital



allocation basis: m ² UFS:	allocated on quantity basis:
outside facilities	waste disposal ton of waste
operation	bed sterilization bed
building maintenance	IT-services PC
technical maintenance	fleet management vehicle
basic rent	hygiene advice analysis
cleaning	maintenance of med. equip. value
pest control	cooling service kWh
security	broadcasting services TV
	catering meal
	sterilization service sterile unit
	power supply kWh
	phone services extension
	patient transport transport
	heating supply kWh
	laundry services ton linen
	water supply m ³
	controlling, admin., other heads
order related allocation:	
office supplies	
caretaker services	
repro services	
mail services	
removal services	


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Cost tool

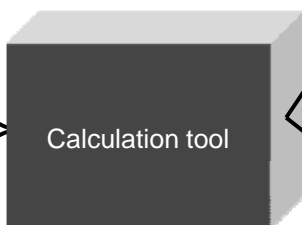
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OPIK – Cost tool

Dimension variables for hospitals

- Turnover
- Number of beds
- Space
- Number of patients and patient days



Calculation tool

Performance and cost data for FM

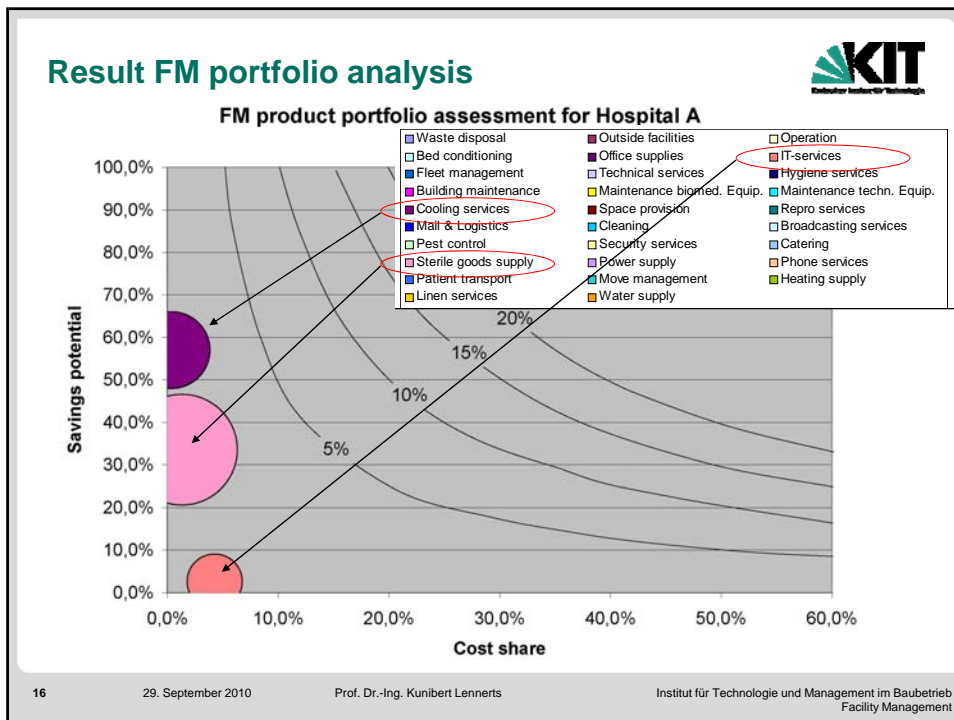
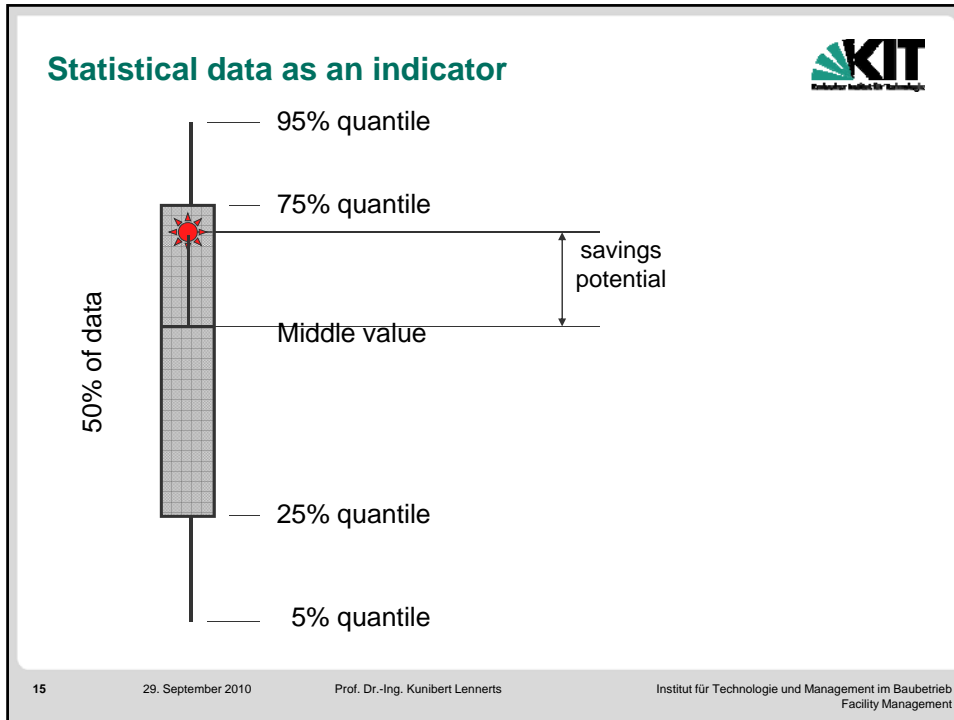
FM product quantities:

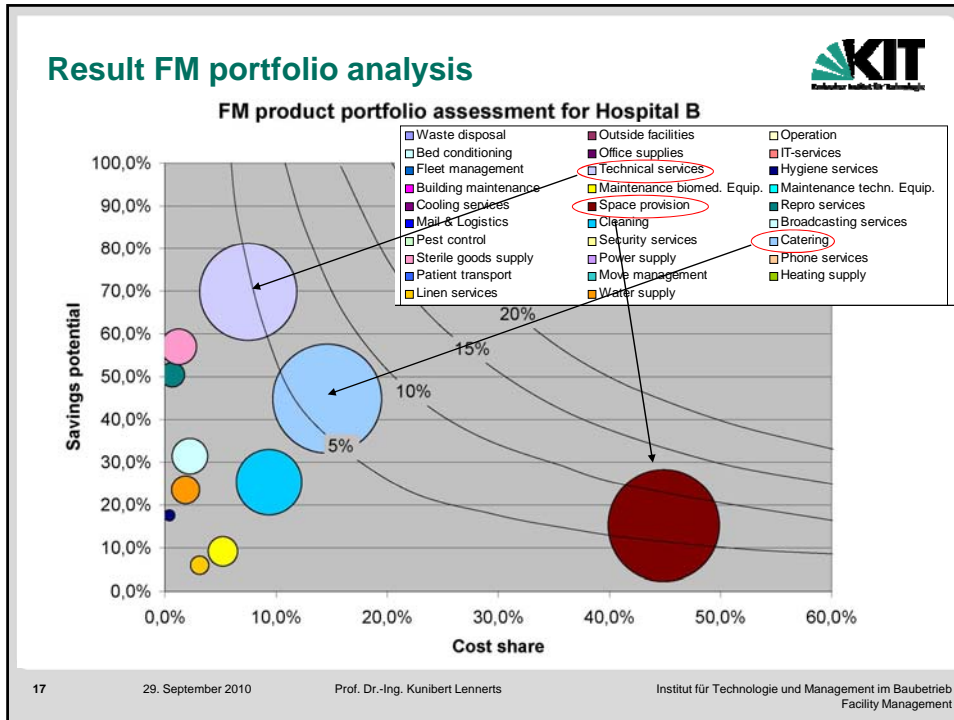

- Number of meals
- Amount of energy
- Sterile goods entities
- ...

FM costs:

- Total costs
- Differentiation
 - per account
 - Personnel/ material

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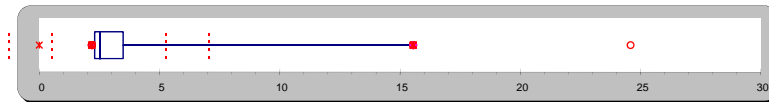
Benchmarking

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Product prices - Benchmarking (I)

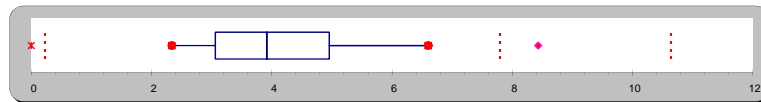
Product: Catering - Euro per Meal

Minimum	5 % Quantil	25 % Quantil	Median	75 % Quantil	95 % Quantil	Maximum
2,16	2,18	2,30	2,53	3,49	15,55	24,59



Product: Cleaning - Euro per m² (UFA) and month

Minimum	5 % Quantil	25 % Quantil	Median	75 % Quantil	95 % Quantil	Maximum
1,52	2,34	3,06	3,92	4,96	6,60	8,43



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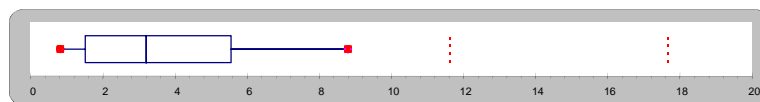
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Product prices - Benchmarking (II)

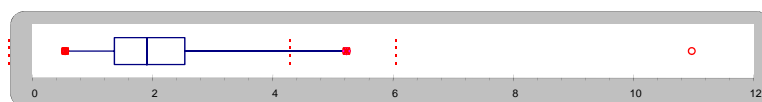
Product: Maintenance building - Euro per m² (UFA) and month

Minimum	5 % Quantil	25 % Quantil	Median	75 % Quantil	95 % Quantil	Maximum
0,34	0,81	1,51	3,20	5,55	8,79	8,86



Product: Maintenance technical facilities - Euro per m² (UFA) and month

Minimum	5 % Quantil	25 % Quantil	Median	75 % Quantil	95 % Quantil	Maximum
0,30	0,55	1,36	1,91	2,54	5,22	10,97



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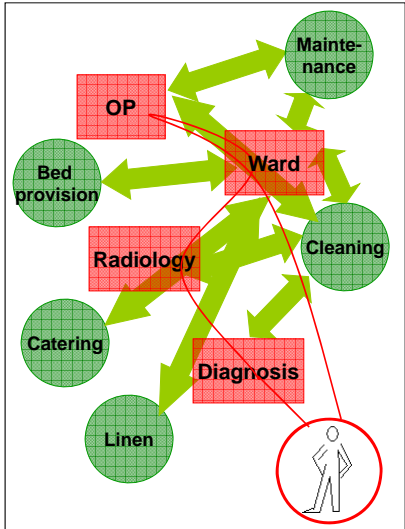


DRG - Linkage

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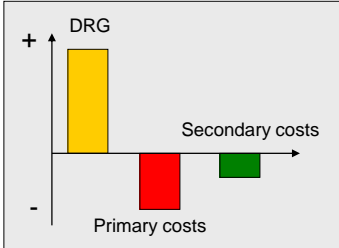


Analysis: DRG-Portfolio of a hospital



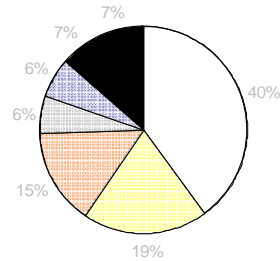
Each DRG results in a process measurable in time and location for each patient. This has cost effects.

Costs



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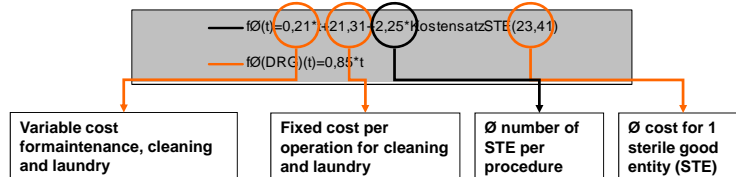
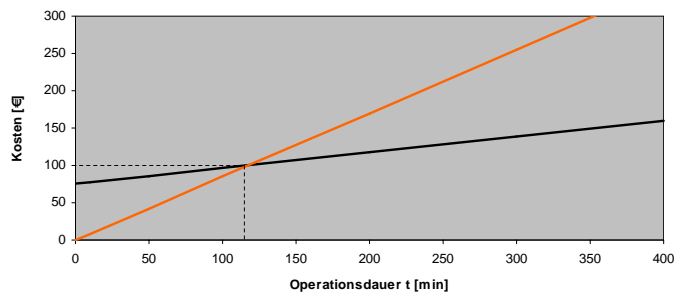
Example operation unit – average FM cost share



- Sterile goods supply
- Cleaning
- Maintenance of biom. equipment
- Maintenance
- Laundry services
- Administration, controlling, other
- Other

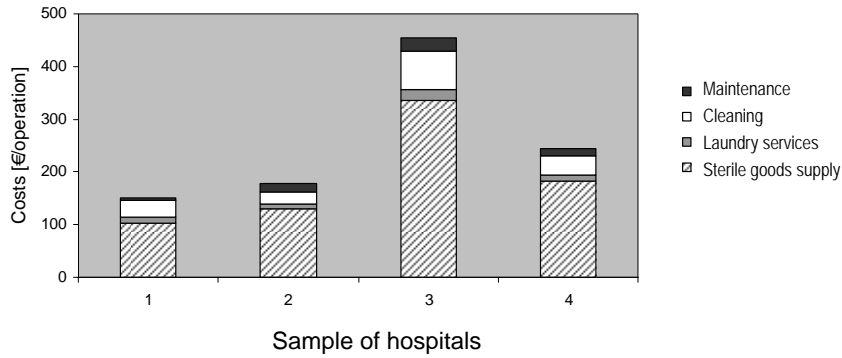
5 FM products cause about 85% of the total FM cost in the operation unit.

Process oriented FM cost function



Cost risks comparing the linear DRG-approach and the process oriented function, especially for short operations!

Hip-joint implant – FM cost shares in the OR



Source: Diez, K.: Ein prozessorientiertes Modell zur Verrechnung von Facility Management Kosten am Beispiel der Funktionsstelle Operationsbereich im Krankenhaus, 2009

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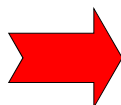
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Cost allocation: proceeds and costs

Hospital	1	2	3	4
	$f_{KH1}(t) = 0,19 \cdot t$	$f_{KH2}(t) = 0,23 \cdot t$	$f_{KH3}(t) = 0,42 \cdot t$	$f_{KH4}(t) = 0,18 \cdot t$
	+19,22	+12,84	+33,46	+23,39
FM-cost function	$+5,5 \cdot 18,75$	$+5,5 \cdot 23,60$	$+5,5 \cdot 60,99$	$+5,5 \cdot 33,16$
Average OR-time [min]	156	158	207	222
Number of performed operations	388	153	111	56
Costs per operation hip-joint-implant [€]	151,50	179,13	455,21	244,96
% share of patients with DRG I48Z	73	67	16	5
InEK-proceeds I48Z (85%) OR [€]	188,53	188,53	188,53	188,53
Win/Loss	+37,03	+9,40	-266,68	-56,43
% share of patients with DRG I05Z	10	28	52	38
InEK-proceeds (85%) OR [€]	249,14	249,14	249,14	249,14
Win/Loss	+97,63	+70,01	-206,07	+4,18

ICPM 5.820.*



Process-oriented cost per operation are lower than proceeds by InEK !

Source: Diez, K.: Ein prozessorientiertes Modell zur Verrechnung von Facility Management Kosten am Beispiel der Funktionsstelle Operationsbereich im Krankenhaus, 2009

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Conclusion



PPP in the area of healthcare should be driven by transparency and flexibility!



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