# The Importance of System Architecting for Development

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#### **Abstract**

The importance of system architecting for development of products is explained. Current trends show an exponential growth of development teams, product complexity. Team size and product complexity are problematic from cost, time to market and risk point of view. The challenge is to create new products with manageable sized teams. System architecting is one of many measures to cope with this problem.

Architecting is explained in its context and a few main concepts are shown. A curriculum is being developed for (potential) system architects. The next step is to address the managerial context of the system architect. For this purpose a 2 day Management SARCH is developed.

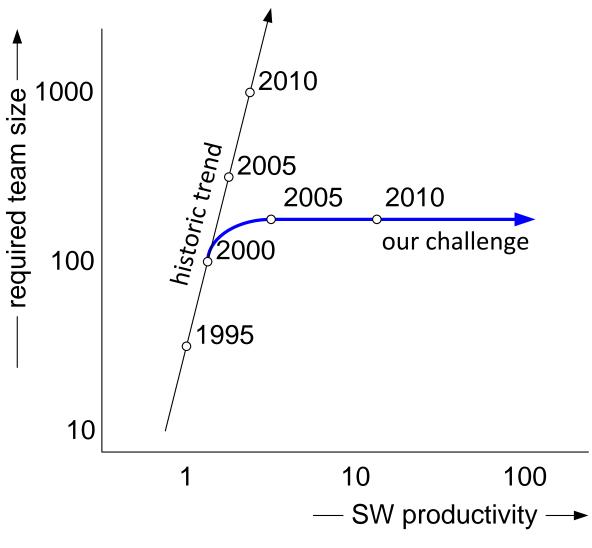
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### The Challenge



Manage large PCP teams of > 1000 people

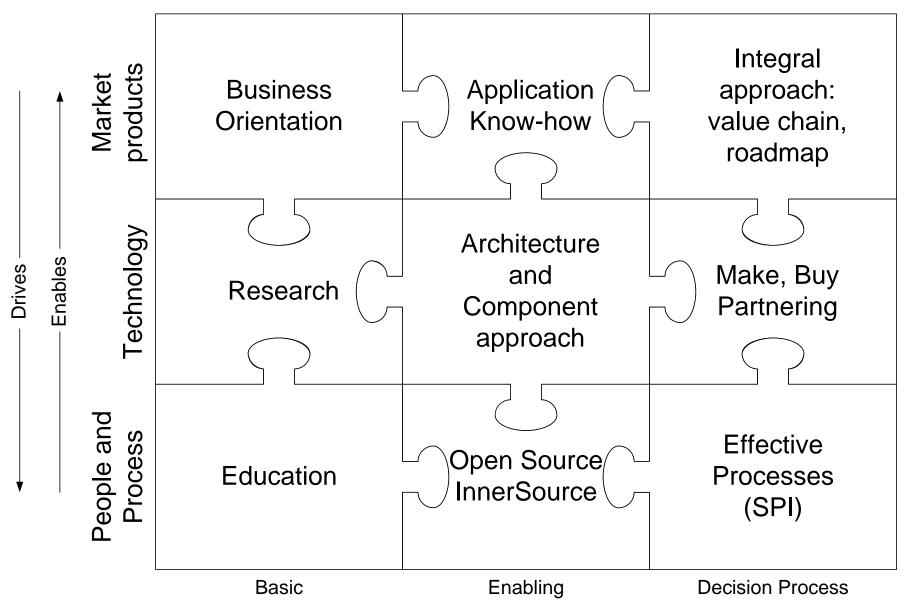
or

Significantly increase SW productivity

from: Ad Huijser Philips Software Conference 2001

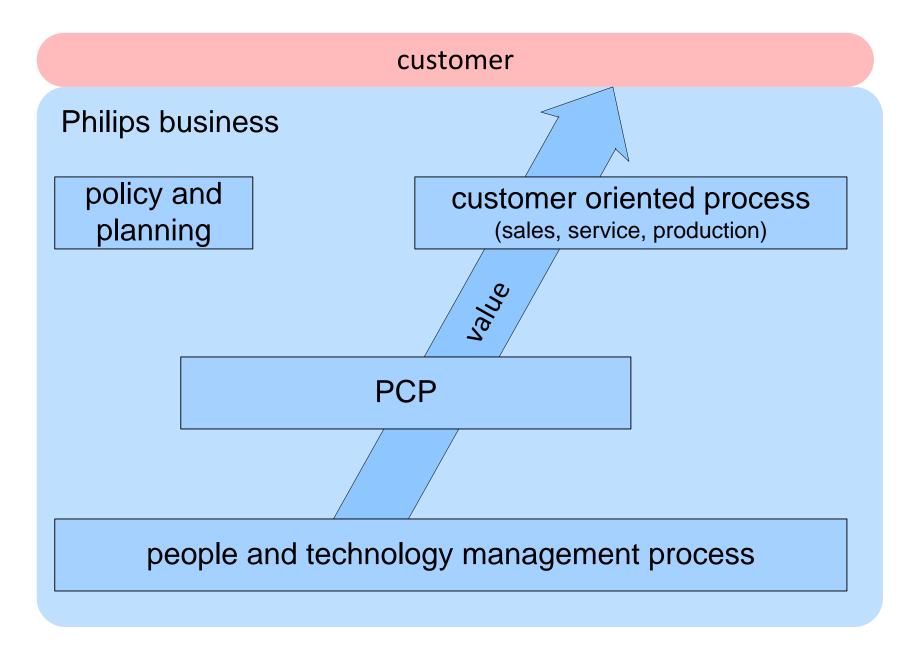


### When all pieces fit ...



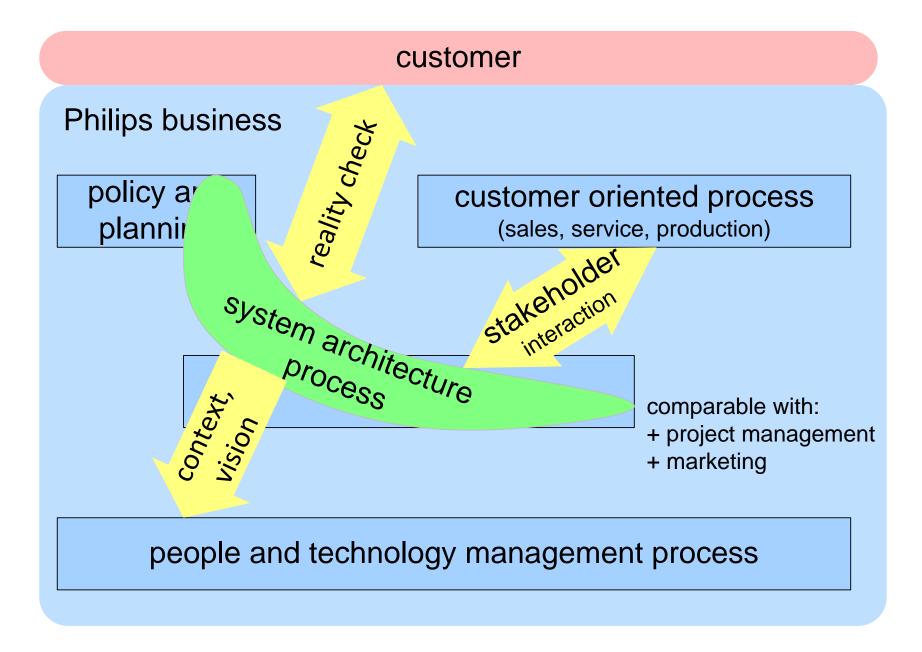
2001 Conference Software from: Ad Huijser Philips

### Simplified process view





### System architecture process





# What is architecting?

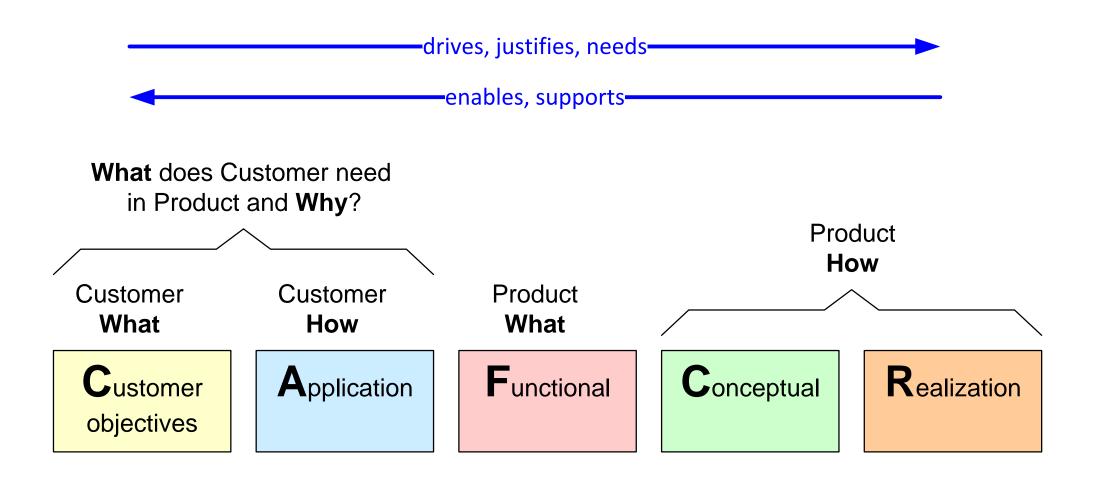
Understanding Describing Guiding How

Do the right things

Do the things right

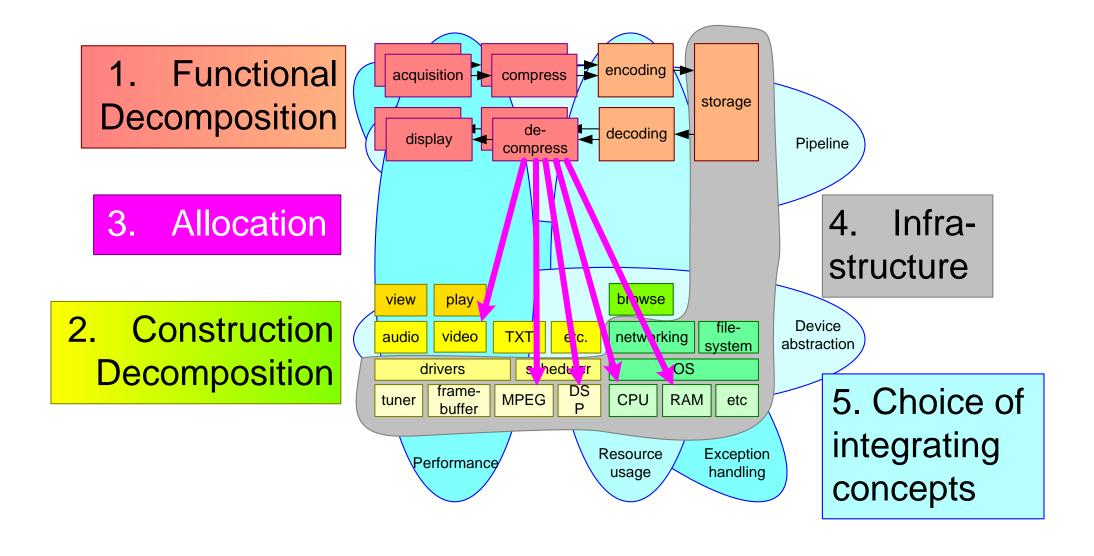


### "CAFCR" model



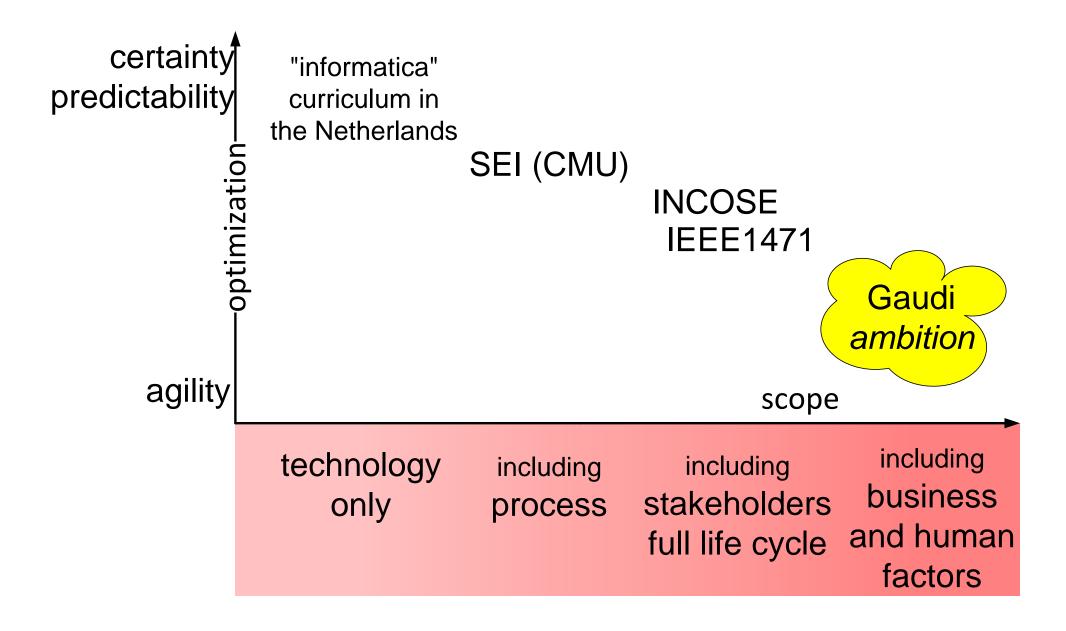


### Guiding how



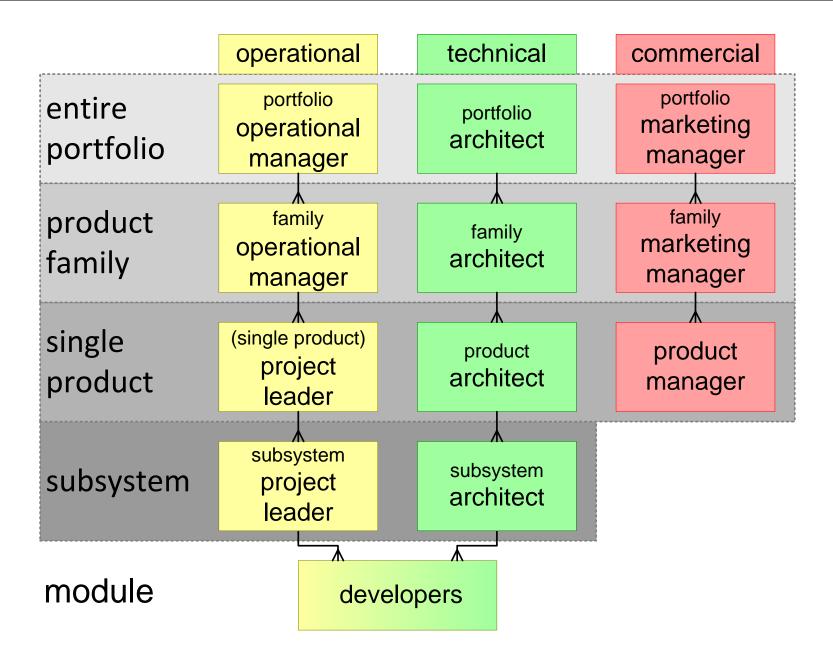


#### Gaudí ambition



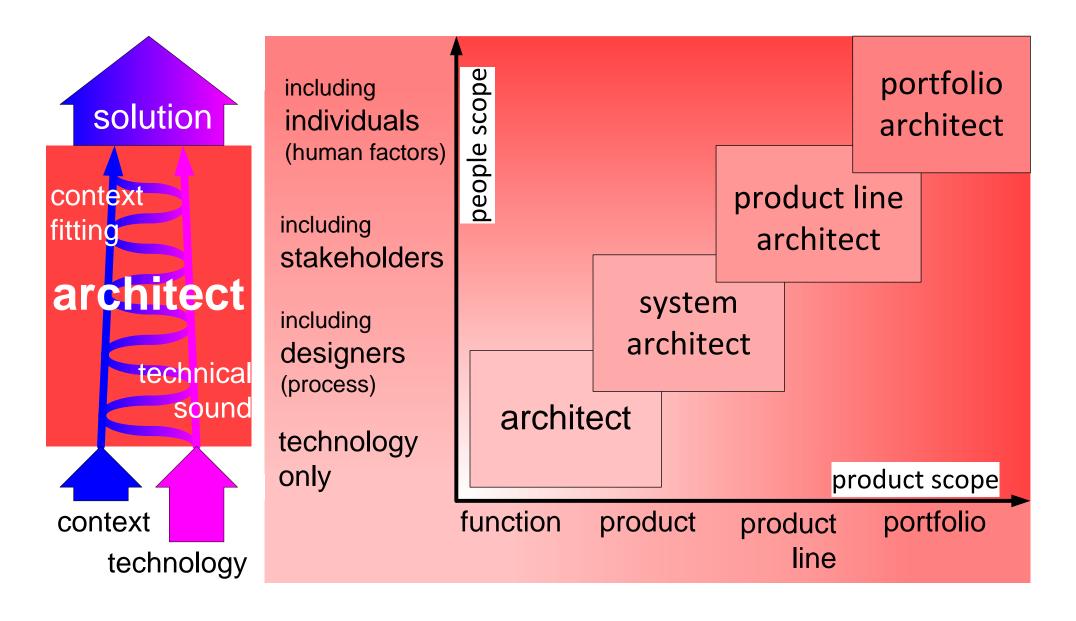


### Operational hierarchy



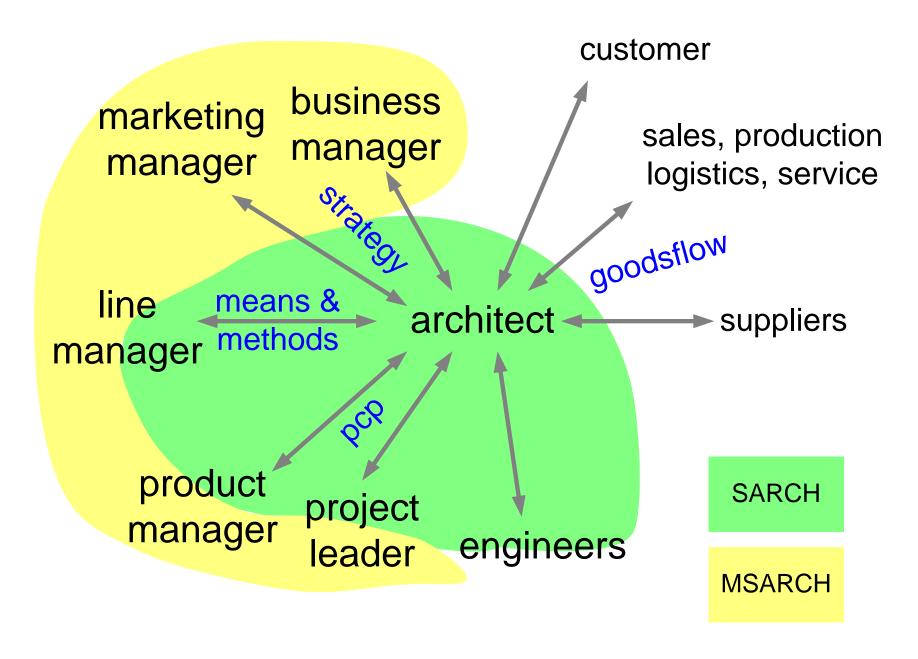


### **Architecting Scope**





#### Stakeholders Architect





### Profile of System Architect





### Draft System Architect Curriculum

business & application root generalist psycho-social insight technical technical skills know-how know-how process insight broaden non technical scope specific broaden system design stimulate personal increase skills technologies technology methodology development business methodology and methods scope architecture school **MPEG COPA SARCH ESA SW** RF hands-on SARCH advanced SARCH ESA silicon value engineering UML ESA stakeholders ESA system cost engineering and more **QFD EMC** design for manufacturing roadmapping technology management mechatronics systems engineering industrial vision SPI/CMM change management reliability integral architecting early machine control optics integration available process control draft performance external HW/SW negotation marketing effective leading advanced presentation leadership missing communication presentation conflict management coaching safety and more and more and more and more and more



### Course status in Philips

Course	Abbreviation	number of courses upto May 2002	appr. total participants	Lecturers
System Architecture	SARCH	15	230	Gerrit Muller 2002 H2: others
Embedded Systems Architecting; Stakeholders	ESA	5	80	Pierre America Frank Pijpers
System Architecting for Managers	MSARCH	1	12	Gerrit Muller



### Goals of 2-day Management SARCH course

### managerial awareness of:

- + what is architecting
- + business impact of architecting
- + role and profile of an architect

to

- + enable integral approach
- + stimulate architects to substantially contribute:
  - \* at business level
  - \* to strategic goals
  - \* from technological strength



# Program of 2-day Management SARCH

session	subject
day 1 morning	positioning the System Architecture Process Product Creation Process
	product families, generic developments
day 1 afternoon	role and task of the system architect profile of the system architect
	documentation, reviewing and other supportive processes
day 2 morning	requirements capturing, roadmapping
day 2 afternoon	HRM aspects; selection, appraisal, career path, etcetera wrap up, expectations, how to continue, evaluation

