

# The Importance of System Architecting for Development

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## Abstract

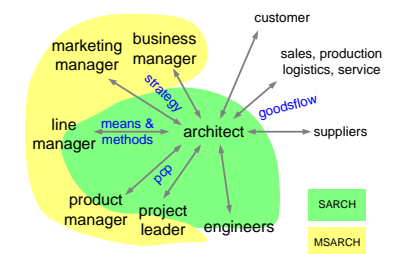
The importance of system architecting for development of products is explained. Current trends show an exponential growth of development teams, product complexity. Team size and product complexity are problematic from cost, time to market and risk point of view. The challenge is to create new products 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.

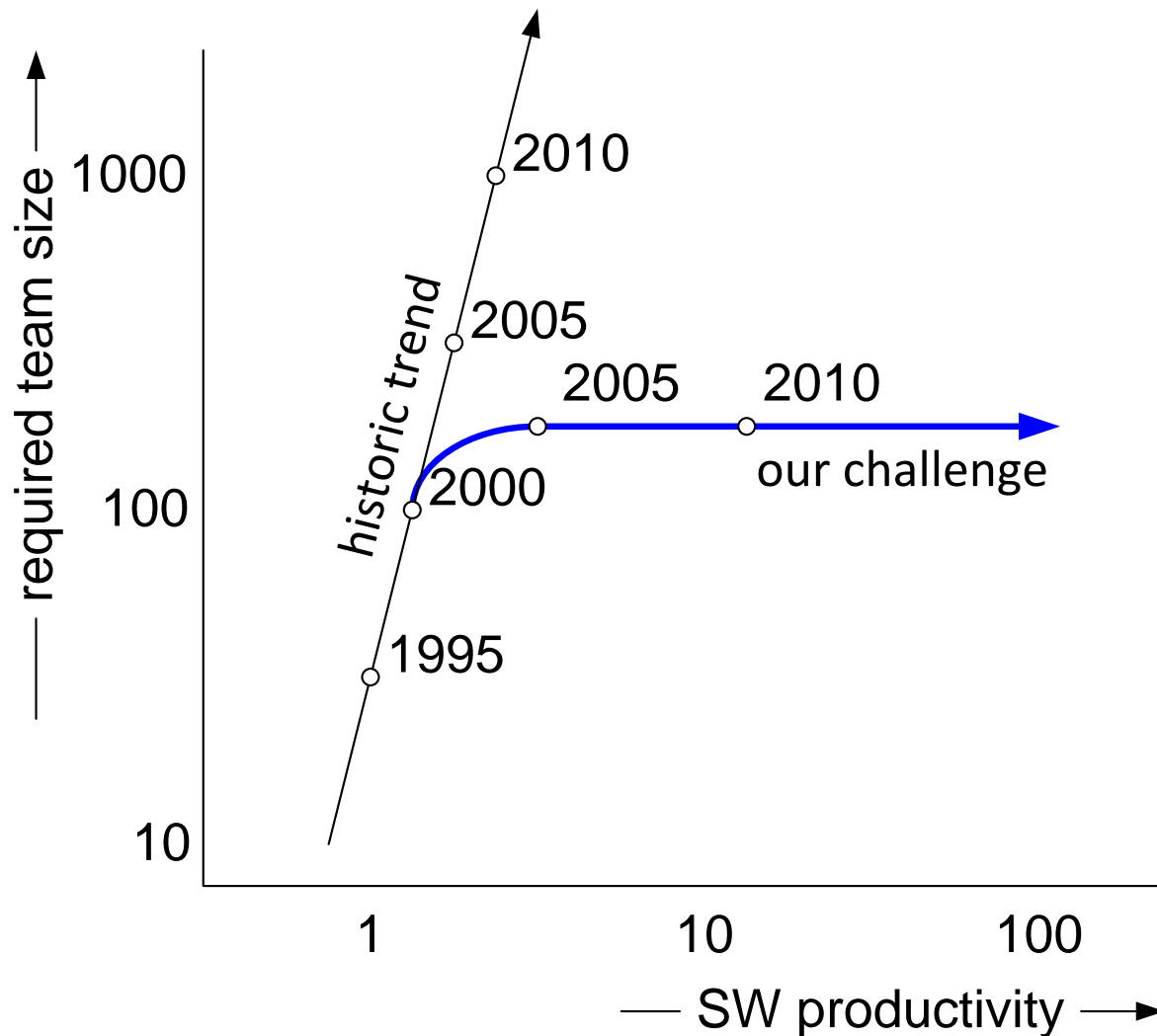
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# The Challenge



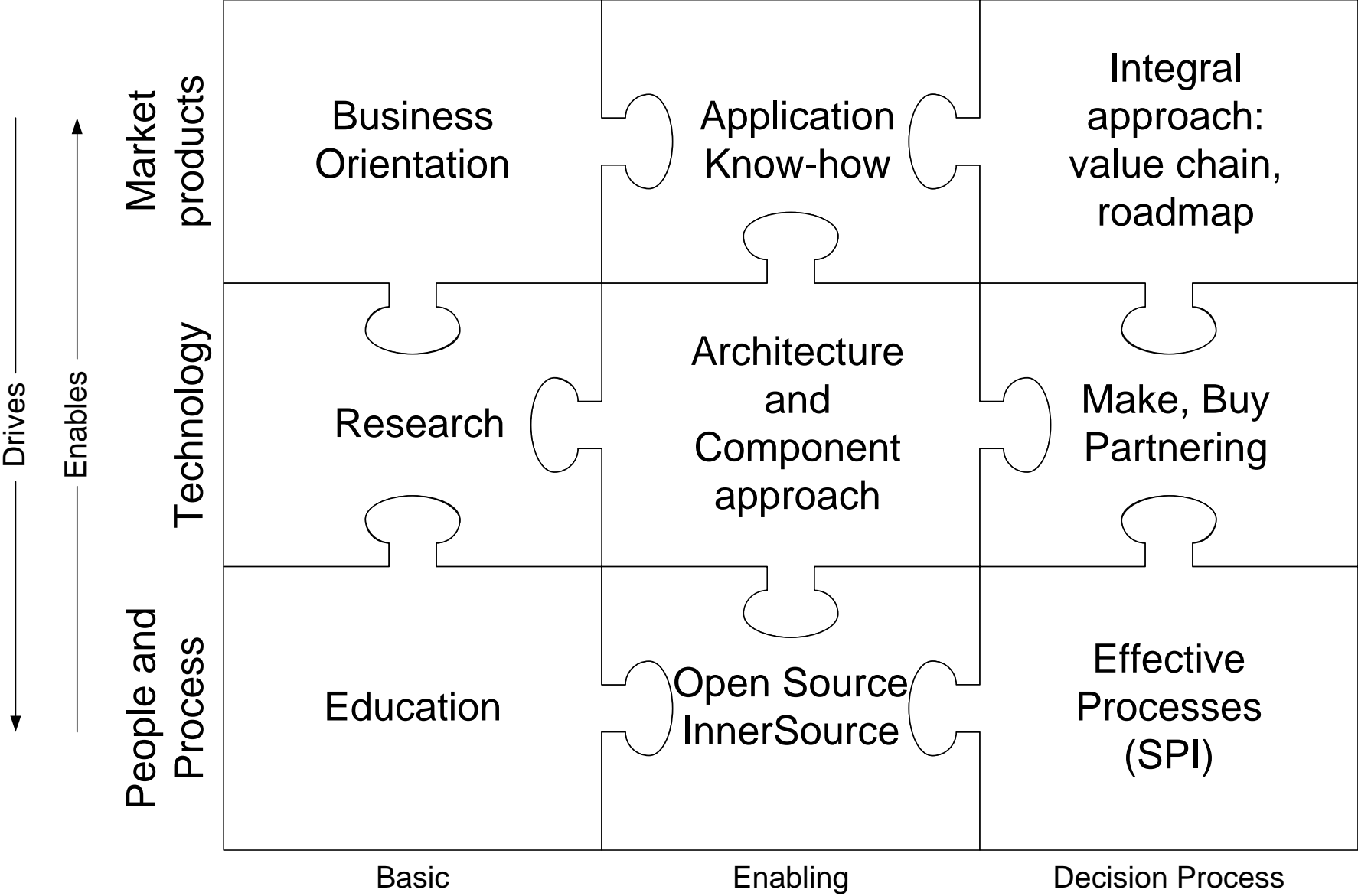
Manage large PCP  
teams of > 1000 people

or

Significantly increase  
SW productivity

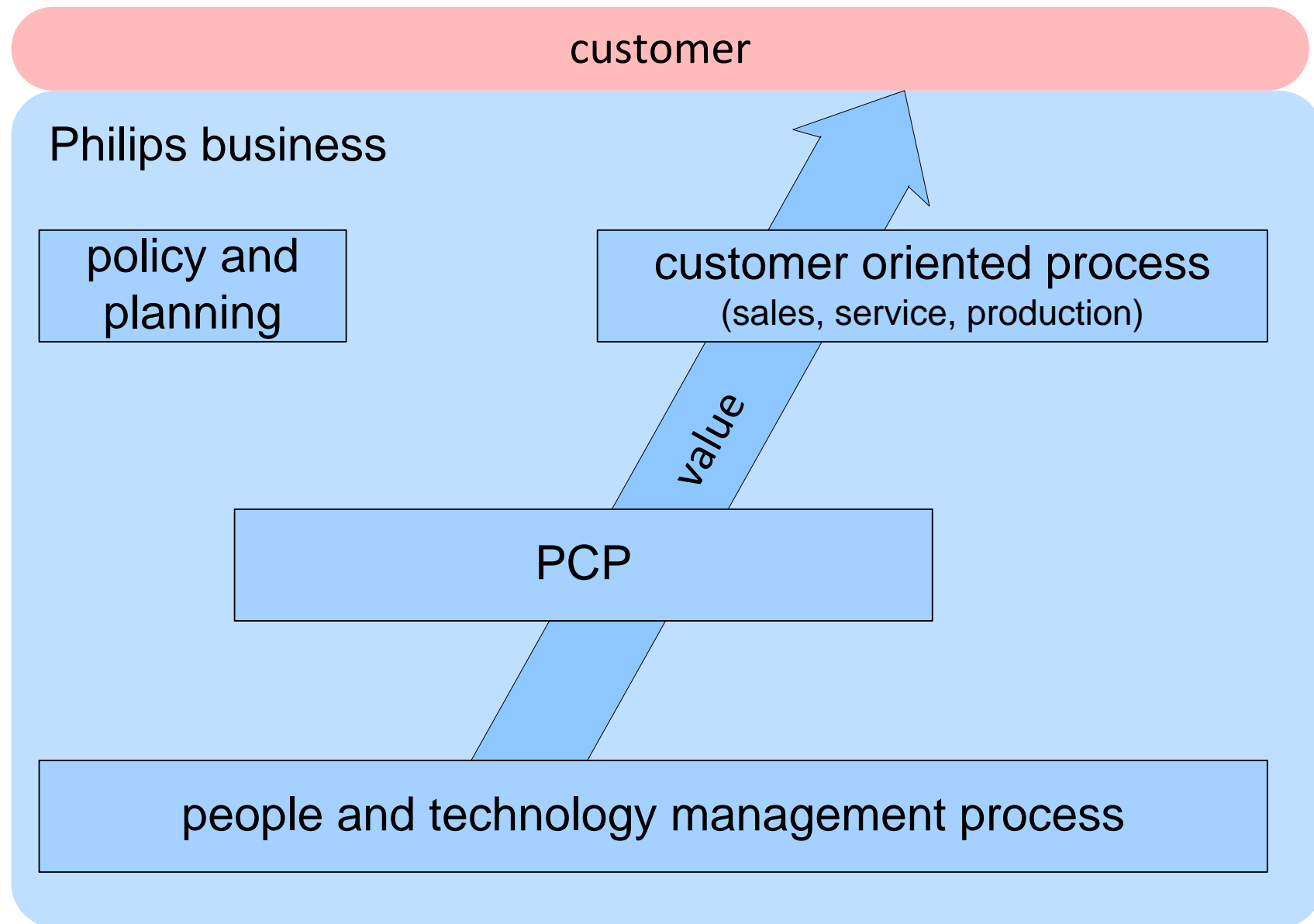
from: Ad Huijser  
Philips Software Conference 2001

# When all pieces fit ...

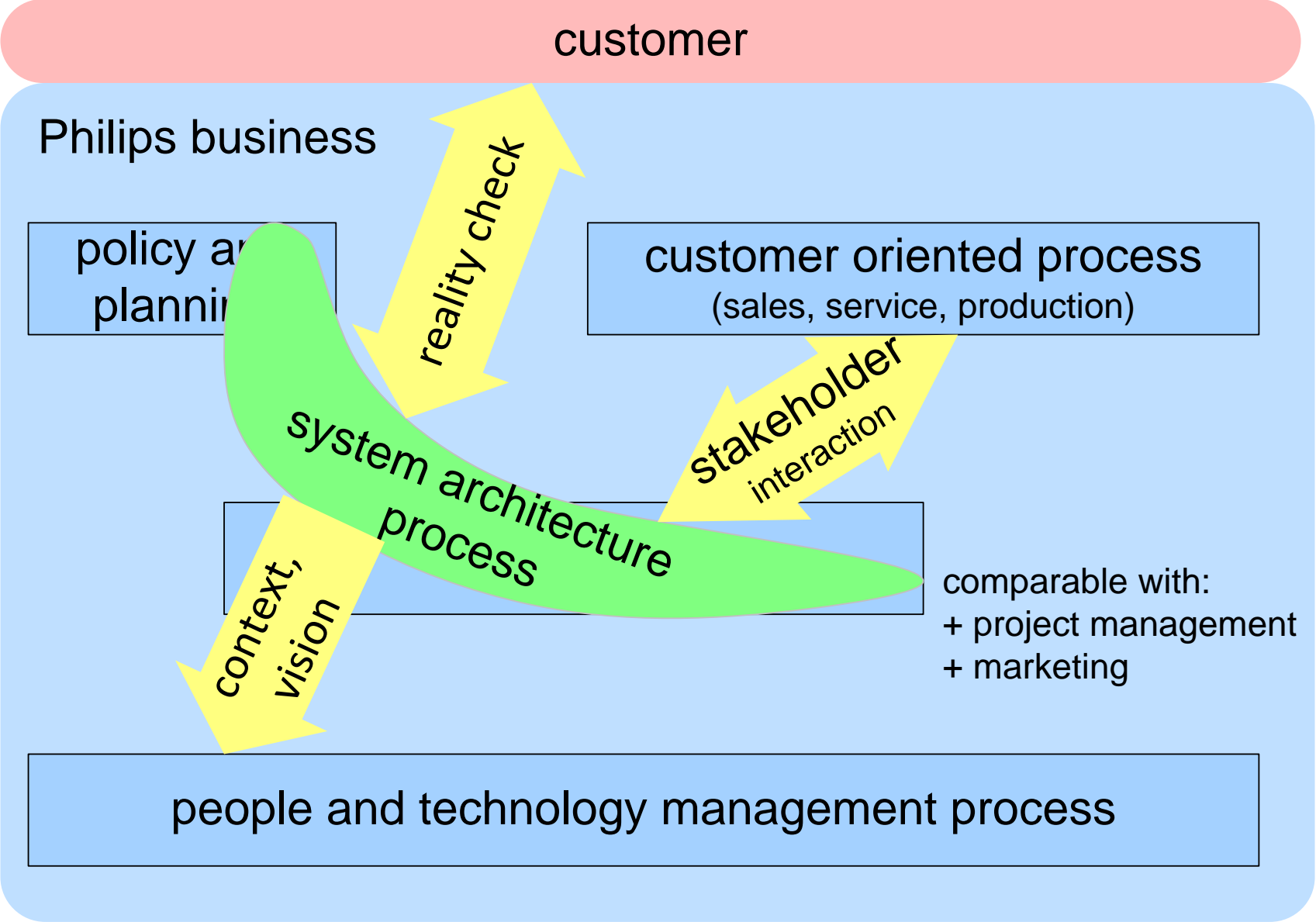


from: Ad Huijser Philips Software Conference 2001

# Simplified process view



# System architecture process



# What is architecting?

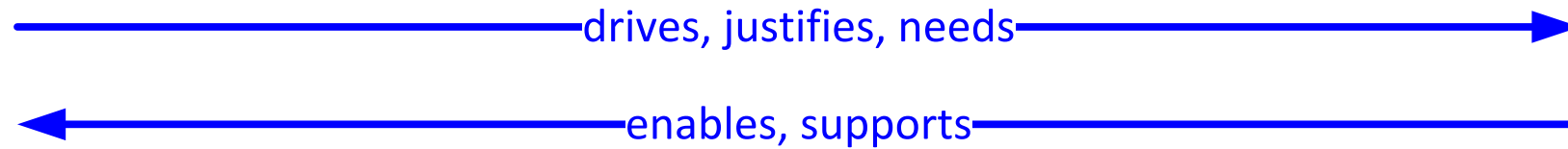
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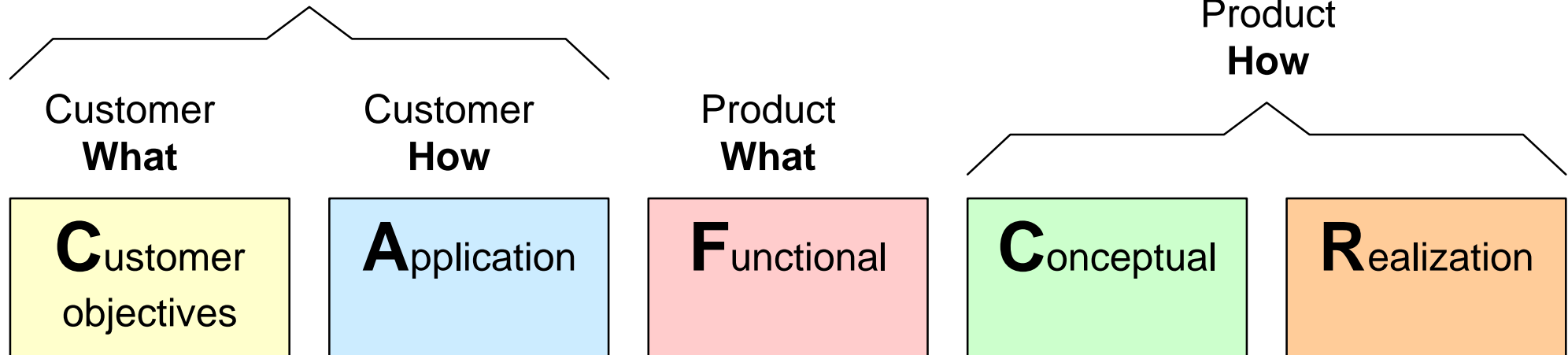
*Do the right things*

*Do the things right*

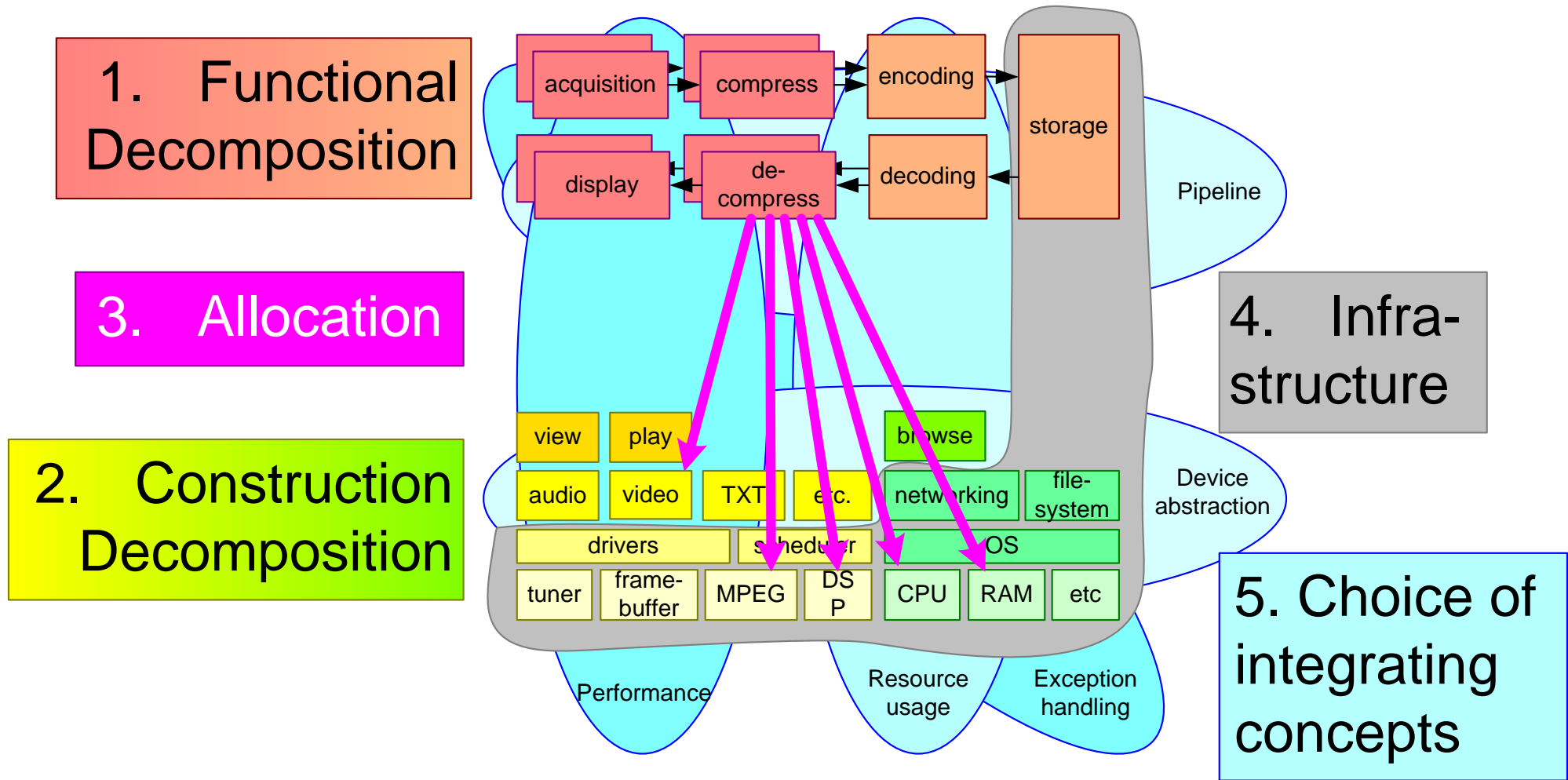
# "CAFCR" model



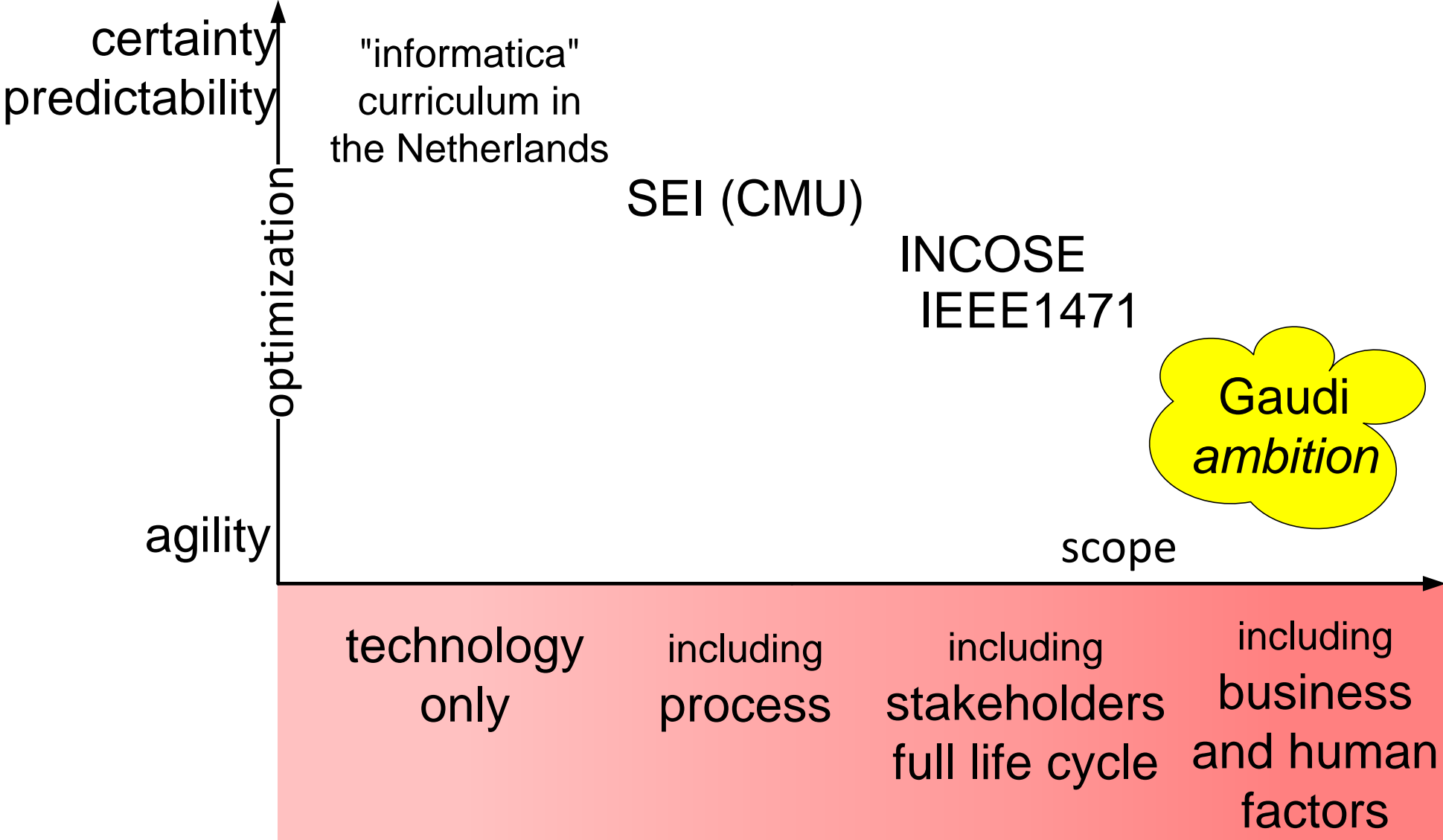
**What** does Customer need  
in Product and **Why?**



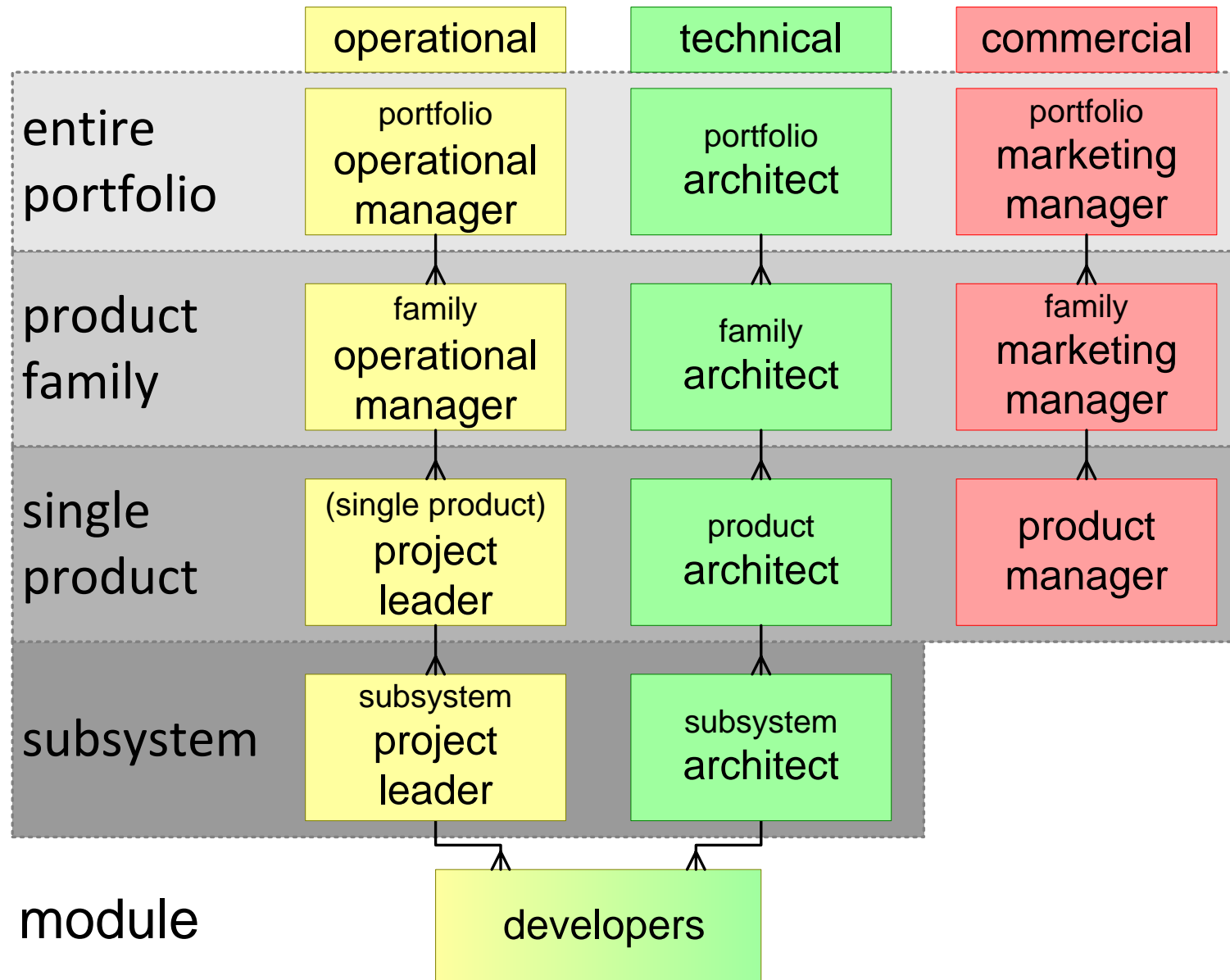
# Guiding how



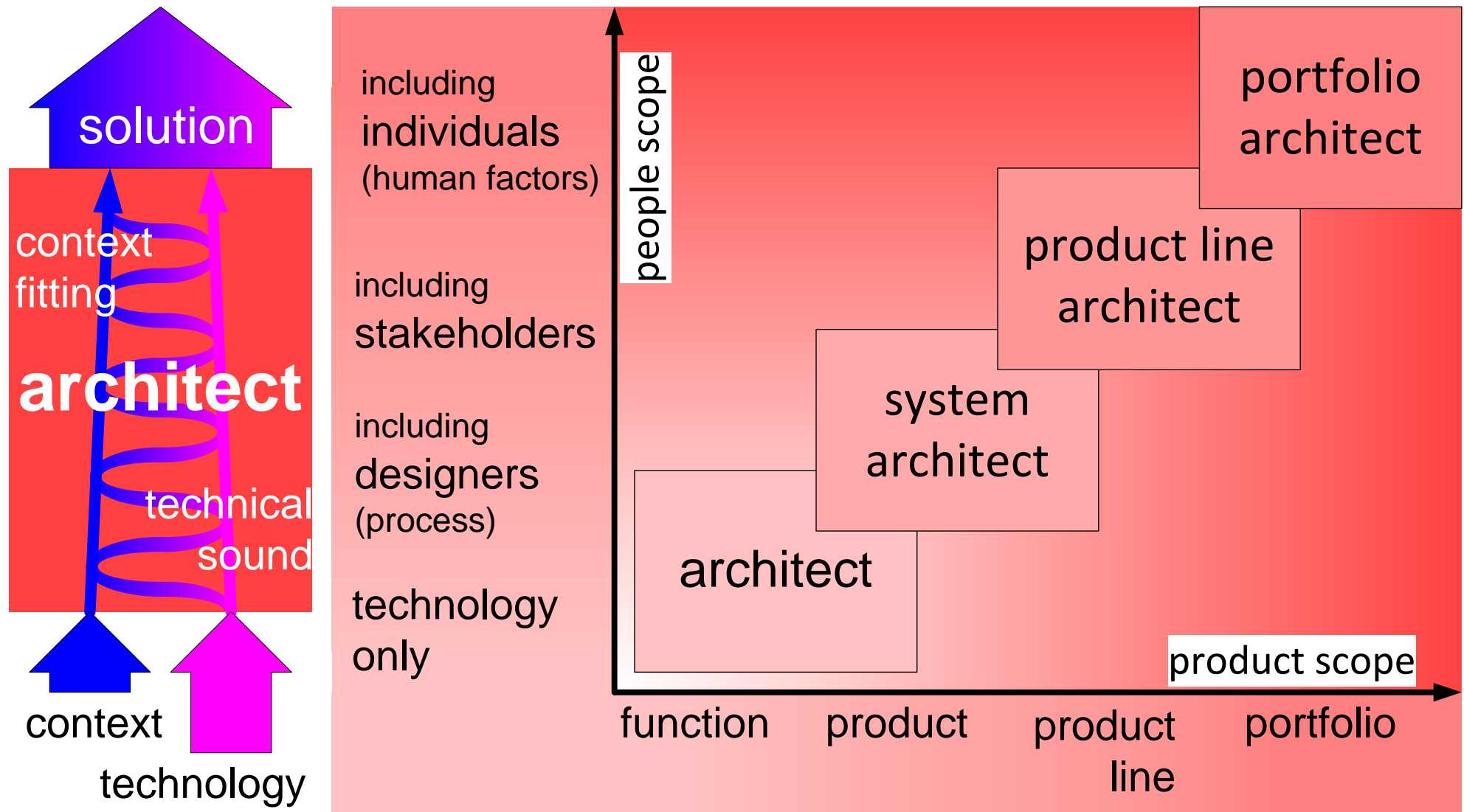
# Gaudí ambition



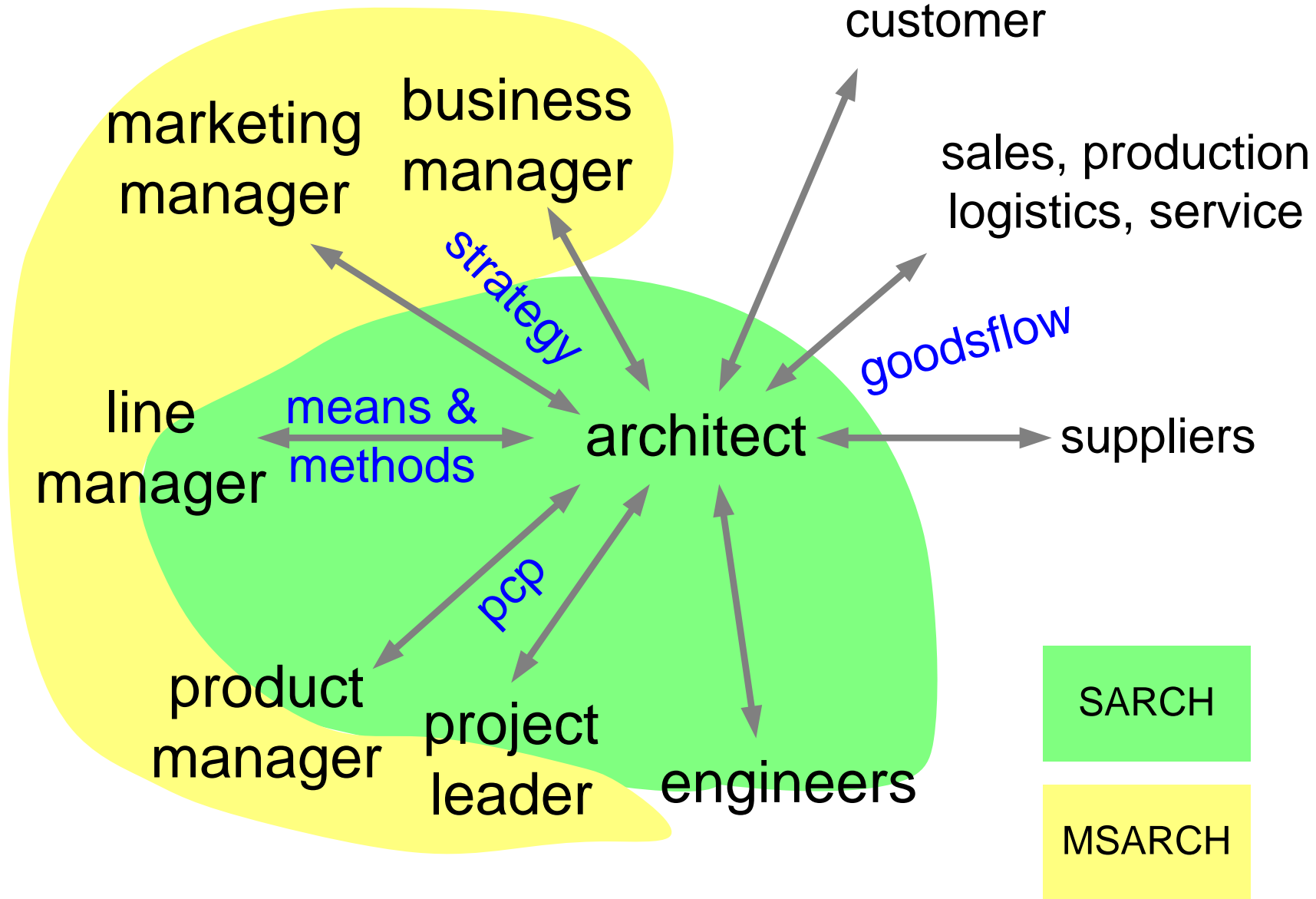
# Operational hierarchy



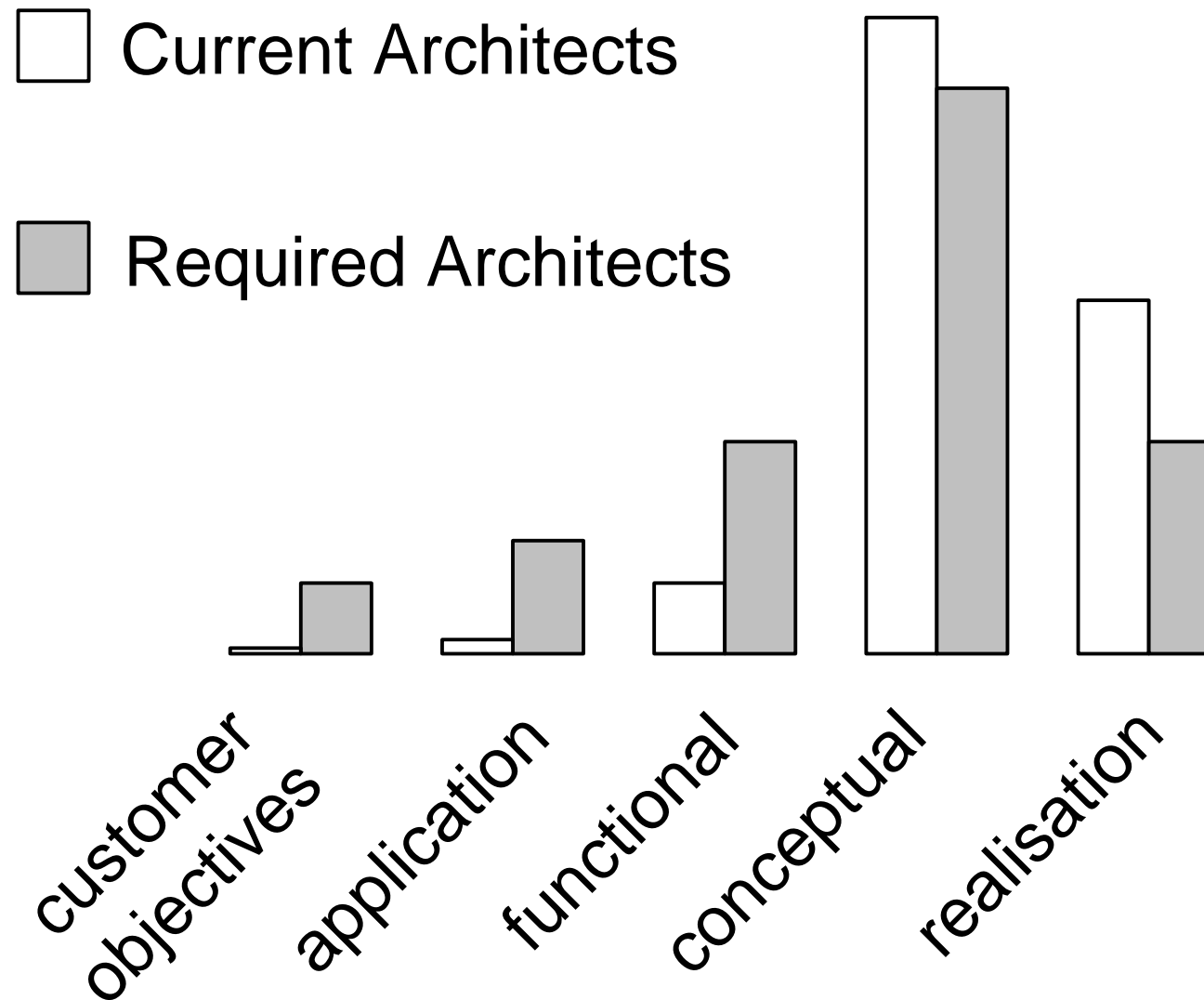
# Architecting Scope



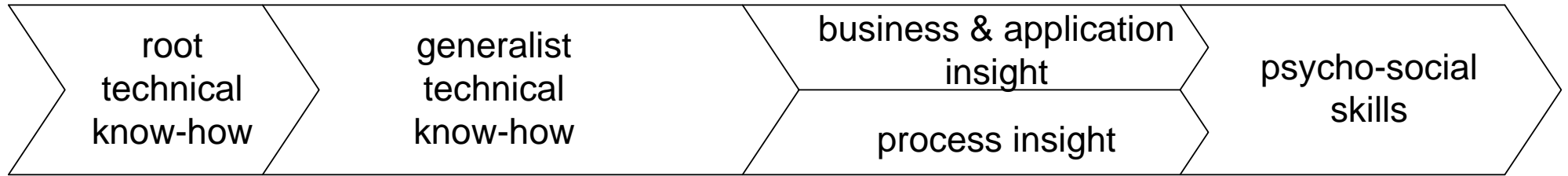
# Stakeholders Architect



# Profile of System Architect



# Draft System Architect Curriculum



specific technologies and methods

broaden technology scope

system design methodology

broaden non technical scope  
increase skills  
business methodology

stimulate personal development

architecture school

MPEG  
RF  
UML  
and more  
EMC

ESA SW  
ESA silicon  
ESA system  
mechatronics  
industrial vision  
optics

COPA  
value engineering  
cost engineering  
QFD  
design for manufacturing  
systems engineering  
reliability  
machine control  
process control  
performance  
HW/SW  
effective leading  
communication  
safety  
and more

SARCH  
ESA stakeholders  
roadmapping  
SPI/CMM  
integral architecting  
integration

hands-on SARCH  
technology management  
change management

advanced SARCH

available  
external  
missing

early draft

and more

presentation  
and more

negotiation  
advanced presentation  
conflict management  
and more

marketing  
leadership  
coaching  
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

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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

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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