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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status: concept
version: 0.3
The Challenge

- Manage large PCP teams of > 1000 people
- or
- Significantly increase SW productivity

from: Ad Huijser
Philips Software Conference 2001
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AHsolutionJigsaw
Simplified process view

Philips business

policy and planning

customer oriented process
(sales, service, production)

PCP

people and technology management process

customer

value
System architecture process

- Philips business
- Policy and planning
- Reality check
- System architecture process
- Context, vision
- Stakeholder interaction
- Customer oriented process (sales, service, production)
- Comparable with:
  - Project management
  - Marketing

People and technology management process

customer
What is architecting?

Understanding Why
Describing What
Guiding How

Do the right things
Do the things right
"CAFCR" model

What does Customer need in Product and Why?

Customer
  What
  Customer objectives

Customer
  How
  Application

Product
  What
  Functional

Product
  How
  Conceptual

Realization

drives, justifies, needs

enables, supports

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CAFCRannotated
Guiding how

1. Functional Decomposition

2. Construction Decomposition

3. Allocation

4. Infrastructure

5. Choice of integrating concepts

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LWAarchitectureHow
Gaudí ambition

- SEI (CMU)
- INCOSE
- IEEE1471
- Gaudí ambition

- certainty
- predictability

- technology only
- including process
- including stakeholders full life cycle
- including business and human factors

"informatica" curriculum in the Netherlands

optimization

agility

scope
Operational hierarchy

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PCPOperationalOrganization
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ISADStakeholdersArchitect
Profile of System Architect

- Current Architects
- Required Architects

- customer objectives
- application
- functional
- conceptual
- realisation

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CAFCRprofileSA
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ISADcurriculumSA
# Course status in Philips

<table>
<thead>
<tr>
<th>Course</th>
<th>Abbreviation</th>
<th>number of courses upto May 2002</th>
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<td>Frank Pijpers</td>
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GaudiCourseStatusInternal
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
<table>
<thead>
<tr>
<th>session</th>
<th>subject</th>
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<td>day 1 morning</td>
<td>positioning the System Architecture Process</td>
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<td>Product Creation Process</td>
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<td>product families, generic developments</td>
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<td>day 1 afternoon</td>
<td>role and task of the system architect</td>
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<td>documentation, reviewing and other supportive processes</td>
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<td>day 2 morning</td>
<td>requirements capturing, roadmapping</td>
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<td>day 2 afternoon</td>
<td>HRM aspects; selection, appraisal, career path, etcetera</td>
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<td>wrap up, expectations, how to continue, evaluation</td>
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