Research Question and Hypothesis

by Gerrit Muller     Buskerud University College

e-mail: gaudisite@gmail.com

www.gaudisite.nl

Abstract

The research question and objectives with respect to architecting methods are defined. The scope is product-family and product level primarily. An hypothesis is formulated, that is based on a multi-view framework allowing many submethods to be used. Criteria for architecting methods are articulated.

A rich collection of submethods fitting in a multi-view framework complemented with reasoning methods enables successful architecting of technology and software intensive complex systems in heterogeneous environments by means of generic insights grounded in specific facts.

What architecting methods enable the creation of successful products in dynamic markets developed in a heterogeneous industrial context?

1. Product is a commercial success
2. Product family is sustainable commercially successful
3. Architects benefit from deploying submethods
4. Project leaders, product managers and engineers are able to use the outcome of the submethods
Research question

What **architecting methods** enable the **creation of** successful **products** in **dynamic markets** developed in a **heterogeneous industrial context** satisfied customers thriving business in time within economic constraints uncertainty rules need for innovation agility required normal distribution of engineering skills some poor, some excellent, mostly average views, stakeholders, applications, concerns, needs, expectations, interests, functions, features, qualities, requirements, systems, technologies, standards, disciplines, suppliers, sites, cultures, employees, education, tools, legacy, other vendors, legislation
A rich collection of submethods fitting in a multi-view framework complemented with reasoning methods enables successful architecting of technology and software intensive complex systems in heterogeneous environments by means of generic insights grounded in specific facts.
Successful architecting and architecting method

Architecting

Problem know how
Preceding architecture
Solution know how

PCP team
- Architect
- Project leader
- Engineers
- Product manager

Stakeholders
- Expectations
- Needs
- Concerns
- Constraints

Result
Satisfies

Legend
- Human context
- Business context
- Technology context

Research Question and Hypothesis
Gerrit Muller
version: 4.5
March 6, 2013
CAMsuccessfulArchitecting
From hypothesis to criteria

- Stakeholders: expectations, needs, concerns, constraints
- PCP team: architect, project leader, engineers, product manager
- Architected architecture
- Stakeholders' satisfaction
- Resulting architecture satisfies stakeholders
- 1. Product is a commercial success
- 2. Product family is sustainable and commercially successful
- Method enables PCP team to create architecture
- Result: satisfies
- Resulting architecture satisfies stakeholders
- 3. Architects benefit from deploying submethods
- 4. Project leaders, product managers, and engineers are able to use the outcome of the submethods
<table>
<thead>
<tr>
<th>research question</th>
<th>What architecting methods enable the creation of successful products in dynamic markets developed in a heterogeneous industrial context</th>
</tr>
</thead>
<tbody>
<tr>
<td>hypothesis</td>
<td>A rich collection of submethods fitting in a multi-view framework complemented with reasoning methods enables successful architecting of technology and software intensive complex systems in heterogeneous environments by means of generic insights grounded in specific facts</td>
</tr>
</tbody>
</table>
| criteria          | 1. product is a commercial success  
2. product family is sustainable commercially successful  
3. architects benefit from deploying submethods  
4. project leaders, product managers and engineers are able to use the outcome of the submethods |