Abstract

The Product Creation Process is described in its context. A phased model for Product Creation is shown. Many organizations use a phased model as blueprint for the way of working. The operational organization of the product creation process is discussed, especially the role of the operational leader.
The Product Creation Process in Business Context

Customer

Policy and Planning Process

Customer Oriented Process

Product Creation Process

People and Technology Management Process
Phasing of the PCP at Business Level

0. feasibility
1. definition
2. system design
3. engineering
4. integration & test
5. field monitoring

sales
logistics
production
service
development & engineering: marketing, project management, design
### Phasing the Design Control Process

<table>
<thead>
<tr>
<th>Phase</th>
<th>Core Information in Draft</th>
<th>50%</th>
<th>Most Information Available in Concept</th>
<th>Information Is Stable Enough to Use Heavier Change Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs 0</td>
<td></td>
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<tr>
<td>Spec 1</td>
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<tr>
<td>Design 2</td>
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<tr>
<td>Verif 3</td>
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<tr>
<td>Engin 4</td>
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<tr>
<td>Field 5</td>
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</tbody>
</table>

#### Legend:
- **X** core information in draft
- **■** 50%
- **□** most information available in concept
- **X** information is stable enough to use heavier change control

**Legend:**
- Full under development
- Preparing or updating work
## Advantages and Disadvantages of a Phased Process

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>blueprint: how to work</td>
<td>following blueprint blindly</td>
</tr>
<tr>
<td>reuse of experience</td>
<td>too bureaucratic</td>
</tr>
<tr>
<td>employees know <em>what</em> and <em>when</em></td>
<td>transitions treated black and white</td>
</tr>
<tr>
<td>reference for management</td>
<td></td>
</tr>
</tbody>
</table>
Characteristics of a Phase Model

- **large impact decisions**
- **phase transitions check points**
- **iteration**

- 0. feasibility
- 1. definition
- 2. system design
- 3. engineering
- 4. integration & test
- 5. field monitoring

- **needs**
- **specification**
- **design**
- **verification**
- **engineering**

- order long-lead items
- order product high-cost items
- order product announcement

- concurrency
Define a minimal set of *large-impact* decisions.

Define the mandatory and supporting information required for the decision.

Schedule a decision after the appropriate phase transition.

Decide explicitly.

Communicate the decision clearly and widely.
Evolutionary PCP model

- test and evaluate
- requirements specification
- build
- design

2% of budget (EVO)
2 weeks (XP)
up to 2 months per cyclus
Decomposition of the Product Creation Process

Operational Management
- specification
- budget
- time
- planning
- progress control
- resource management
- risk management
- project log

Design Control
- technical
- needs
- what is needed
- specification
- what will be realized
- design
- how to realize
- verification
- meeting specs
- following design
- engineering
- how to produce and to maintain

Marketing
- profitability
- saleability
- customer input
- customer expectations
- commercial structure
- product pricing
- market introduction
- introduction at customer
- feedback
Operational Organization of the PCP

The Product Creation Process

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version: 2.2 June 23, 2016

PCPoperationalOrganization
Prime Responsibilities of the Operational Leader

![Diagram showing the operational triangle with Specification, Quality, Resources, and Time]

The Product Creation Process
Gerrit Muller

version: 2.2
June 23, 2016
PCPoperationalTriangle
The Rules of the Operational Game

Define project
Update project

Assess risks
Determine feasibility
Accept or reject

Specify, resources, time

Accept

Execute project within normal quality rules

Business management

Project leader