Communicating via CAFCR; illustrated by security example

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Abstract

One of the main bottlenecks of developing complex products is communication between the many involved stakeholders. The "CAFCR" model is explained as one of the means to help communicating. The views of the "CAFCR" model are integrated amongst others by many qualities. This is illustrated by means of a mobile infotainment product and zooming in on the quality security. The bilateral communication is analyzed and the importance of interaction for fruitful communication is explained.

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Example product: mobile infotainment

Users can access infotainment appliances such as:
- Watch video
- Browse photo's
- Calendar
- And much more...

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CVCProductChain
Value chain

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CVCvalueChain
Stakeholders and concerns

- Government
- Management
- Economics
- Logistics
- Retailer
- Operator
- Culture
- Preservation
- Liability
- Security
- Network providers
- Pay for use
- Accessibility
- Maximize use
- Entertainment
- Ease of use
- Privacy
- Consumers
- Content providers
- Infrastructure maintenance crew
Internal stakeholders

- **Customer**
  - (purchaser, decision maker, user, operator, maintainer, ...)

- **Company**
  - Policy and planning
    - (business, marketing, operational managers)
  - Customer oriented process
    - (sales, service, production, logistics)
  - PCP
    - (project leader, product manager, engineers, suppliers)
  - People and technology management process
    - (capability managers, technology suppliers)

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The “CAFCR” model

- Customer
  - What
  - How
- Product
  - What
  - How

What does Customer need in Product and Why?

drives, justifies, needs
enables, supports

Customer
- Customer objectives
- Application
- Functional
- Conceptual
- Realization

Product
- How

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CAFCRannotated
Integrating CAFCR

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

- **Customer What**
  - Customer objectives

- **Customer How**
  - Application

- **Product What**
  - Functional
  - Conceptual

- **Product How**
  - Realization

- **Context understanding**
- **Intention**
- **Objective driven**
- **Opportunities**
- **Constraint awareness**
- **Knowledge based**
The abstracted customer

Who is the customer?

decision maker(s)
purchaser
operator
maintainer
user
department head

CEO: Chief Executive Officer
CFO: Chief Financial Officer
CIO: Chief Information Officer
CMO: Chief Marketing Officer
CTO: Chief Technology Officer

chain of retailers
content provider
network provider
system integrator

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CVCwholsTheCustomer
Quality needles as generic integrating concepts

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Security as example through all views

<table>
<thead>
<tr>
<th>C (Customer)</th>
<th>A (Application)</th>
<th>F (Functional)</th>
<th>C (Conceptual)</th>
<th>R (Realization)</th>
</tr>
</thead>
<tbody>
<tr>
<td>objectives</td>
<td>selection</td>
<td>functions</td>
<td>cryptography</td>
<td>specific</td>
</tr>
<tr>
<td></td>
<td>classification</td>
<td>for</td>
<td>firewall</td>
<td>algorithms</td>
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<tr>
<td></td>
<td>people</td>
<td>administration</td>
<td>security zones</td>
<td>interfaces</td>
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<tr>
<td></td>
<td>information</td>
<td>authentication</td>
<td>authentication zones</td>
<td>libraries</td>
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<td></td>
<td>authentication</td>
<td>intrusion</td>
<td>registry</td>
<td>servers</td>
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<td></td>
<td>badges</td>
<td>detection</td>
<td>logging</td>
<td>storage</td>
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<tr>
<td></td>
<td>passwords</td>
<td>logging</td>
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<td>protocols</td>
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<tr>
<td></td>
<td>locks / walls</td>
<td>quantification</td>
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<tr>
<td></td>
<td>guards</td>
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<tr>
<td></td>
<td>administrators</td>
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</tr>
</tbody>
</table>

**desired characteristics, specifications & mechanisms**

<table>
<thead>
<tr>
<th>not trusted</th>
<th>social contacts</th>
<th>missing functionality</th>
<th>holes between concepts</th>
<th>bugs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>open passwords</td>
<td>functionality</td>
<td>concepts</td>
<td>buffer overflow</td>
</tr>
<tr>
<td></td>
<td>blackmail</td>
<td>wrong quantification</td>
<td></td>
<td>non encrypted</td>
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<tr>
<td></td>
<td>burglary</td>
<td></td>
<td></td>
<td>storage</td>
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<td></td>
<td>fraud</td>
<td></td>
<td></td>
<td>poor exception</td>
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<td>unworkable</td>
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<td></td>
<td>handling</td>
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<tr>
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<td>procedures</td>
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</tr>
</tbody>
</table>

**threats**
Role of the views

**Customer objectives**

- social contacts
- open passwords
- blackmail
- burglary
- fraud
- unworkable procedures

**Application**

- sensitive information
- selection
- classification
- cryptography
- firewall
- security zones
- cryptography
- firewall
- security zones

**Functional**

- functions for
- quantification
- logging
- specific
- algorithms
- interfaces
- libraries
- servers
- protocols

**Conceptual**

- context
- understanding
- insight
- right decisions
- right questions
- not trusted
- fraud
- unworkable procedures

**Realisation**

- process and design
- competence
- right decisions
- right questions
- understanding
- insight
- context
- selection
- classification
- cryptography
- firewall
- security zones
- cryptography
- firewall
- security zones
Active listening: the art of the receiver to decode the message

from: "Listening and communicating" by Lia Charité, www.liacharite.nl
Intense interaction needed for mutual understanding

to calibrate:
repeat many times with different examples, illustrations, and explanations
Mutual understanding as function of time

![Graph showing the level of mutual understanding over time with intense interaction, no interaction, and intense interaction phases.](image-url)
Story telling method

What does Customer need in Product and Why?

Customer What
Customer How
Product What
Product How

Customer objectives
Application
Functional
Conceptual
Realization

market vision

a priori solution knowledge

story
analyze design

analyze design

case
design

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SHTfromStoryToDesign
## How do these stakeholders communicate?

<table>
<thead>
<tr>
<th>stakeholder</th>
<th>primary thought</th>
<th>threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>consumer</td>
<td>privacy</td>
<td>kill usability</td>
</tr>
<tr>
<td>content provider</td>
<td>DRM, consumer == pirate</td>
<td>kill usability kill market</td>
</tr>
<tr>
<td>Chief Financial Officer</td>
<td>how to stay in control</td>
<td>kill usability</td>
</tr>
<tr>
<td>operational manager</td>
<td>result in time, accessibility</td>
<td>security</td>
</tr>
<tr>
<td>web engineer</td>
<td>PHP only supports alphanumerical password</td>
<td>poor password protection</td>
</tr>
<tr>
<td>crypto engineer</td>
<td>128 bit keys</td>
<td>no attention for key handling process</td>
</tr>
</tbody>
</table>
CAFCR, as shared reference, enables:
+ Positioning of concerns, problems and solutions
+ Checklists per view
+ Reasoning top down and bottom up