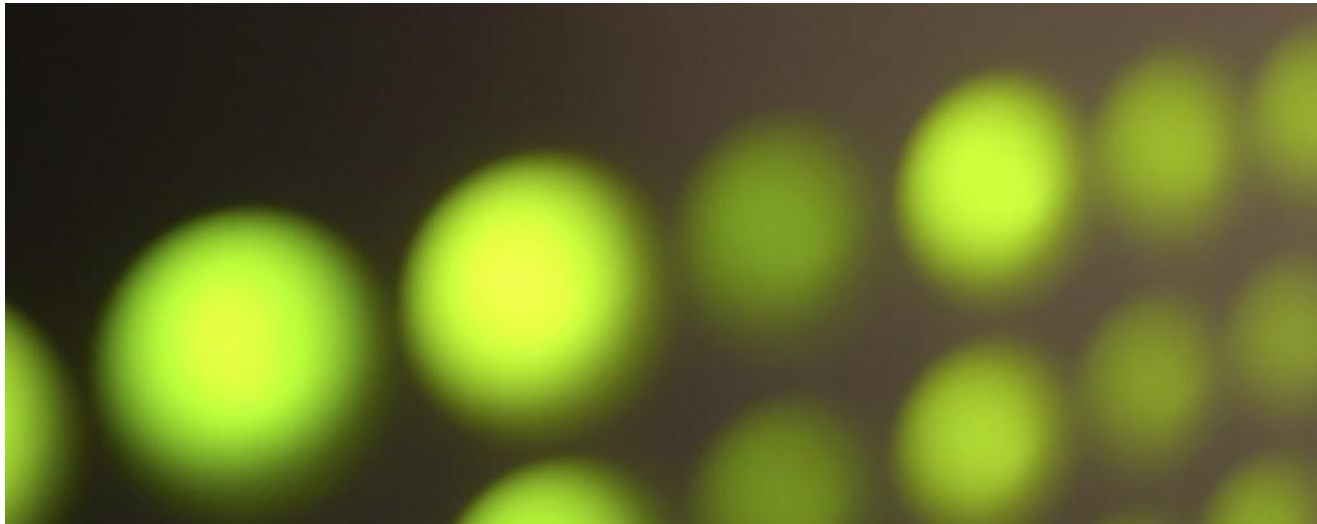

Requirements Management, the quality warranty

Sven Krause, 2011





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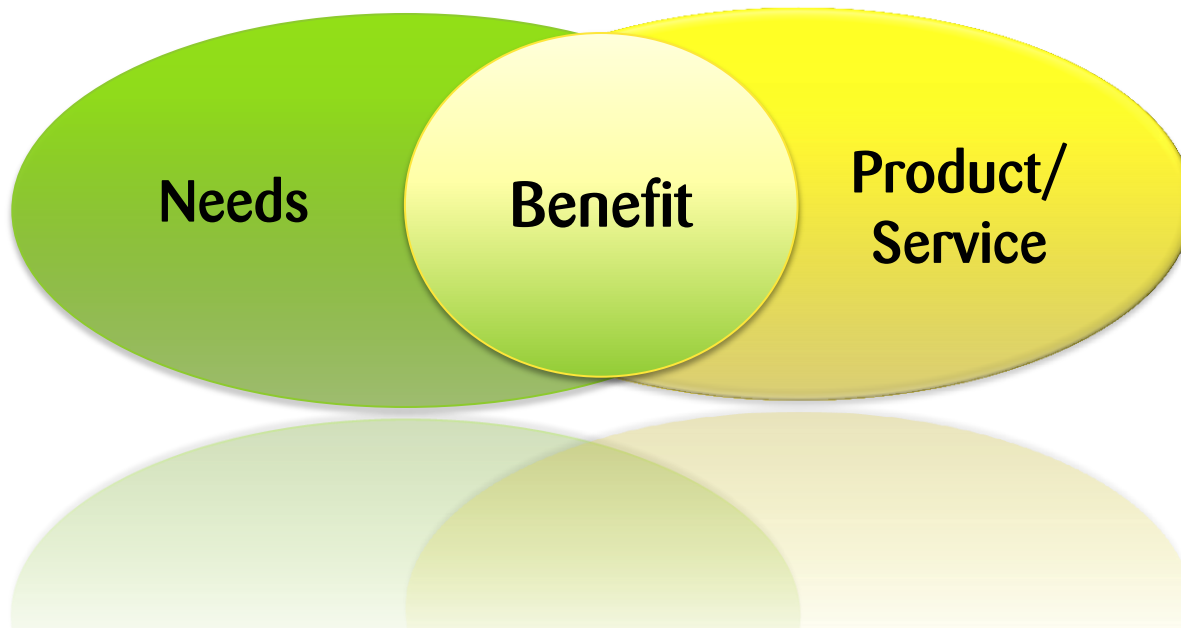
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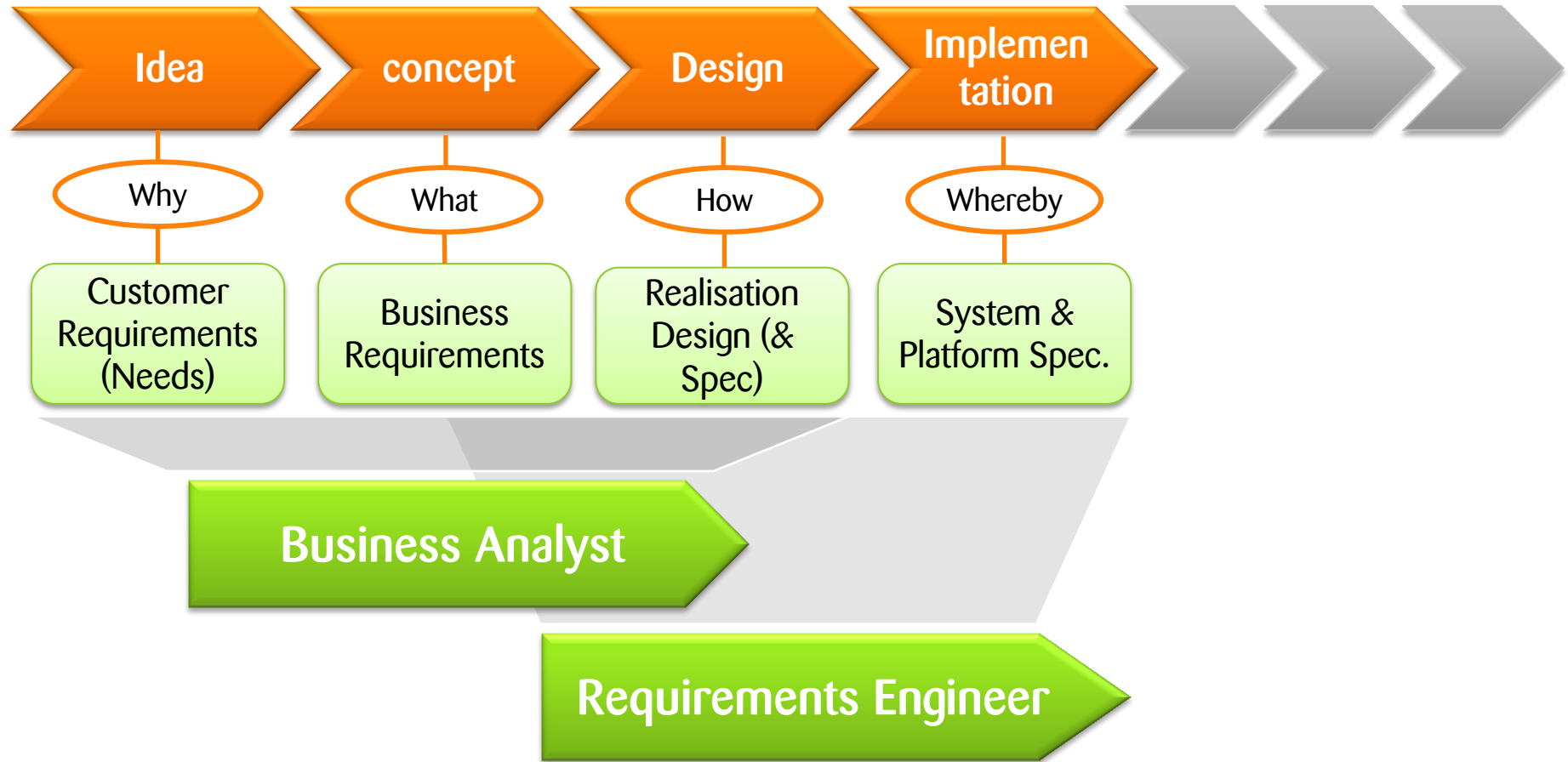
Zühlke is an independent technology and consultancy company providing bespoke software solutions, product innovation and management consulting. We advise, develop and integrate to efficiently deliver solutions of the highest quality. Over the past 40 years we have built an enviable track record and are now an internationally renowned solution provider with teams in Austria, Germany, Switzerland and United Kingdom.

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- Introduction, overview and fundamentals
 - Eliciting requirements
 - Documenting requirements
 - Checking and reconciling requirements
 - Managing requirements

Benefit instead of reactive power!

„An achievement reaches a use then only if it satisfies a need. Each part of an achievement, which parts of needs passes, is only partly useful “





Definition of Requirements Engineering



Requirements Engineering is a cooperative, iterative, incremental process, the goals of which are to make sure that

1. all relevant requirements are known and understood to a level of detail that is necessary
2. the involved stakeholders achieve an satisfactory level of agreement about the known requirements
3. all requirements are document according to documentation guidelines or specified according to specification guidelines.

According to IEEE a requirement is

1. A condition or capability needed by a user to solve a problem or achieve an objective
2. A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document
3. A documented representation of a condition or capability as in (1) or (2)

The 3 kinds of requirements



Functional requirement

A functional requirement defines a function that has to be offered by the system to be created or one of its components.

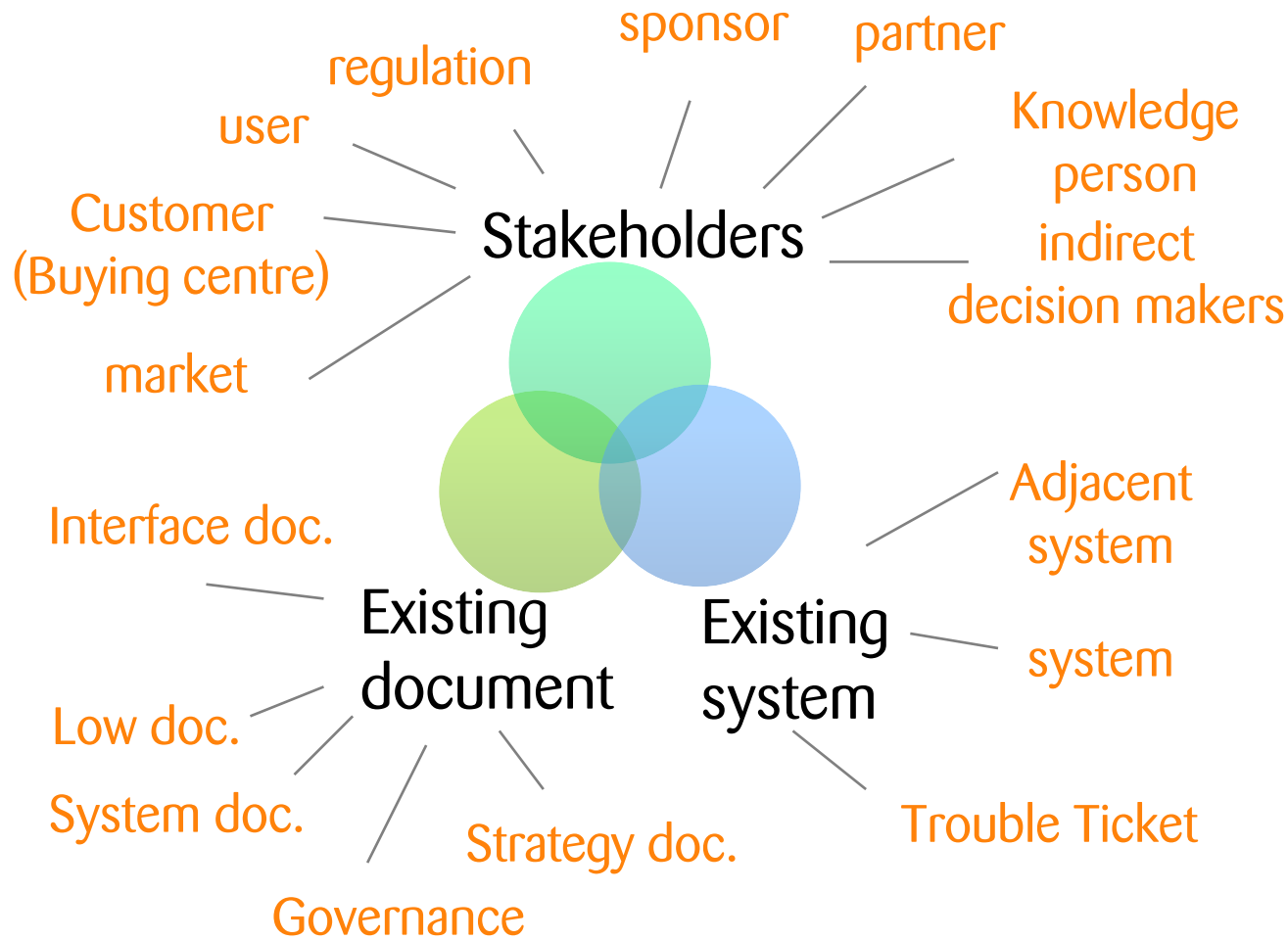
Quality requirement

A quality requirement defines a qualitative property that the system to be created or one of its functions has to offer.

Constrains

A constraint is an organizational or technical requirement that restricts degrees of freedom for designing and implementing the system to be created.

Sources of requirements

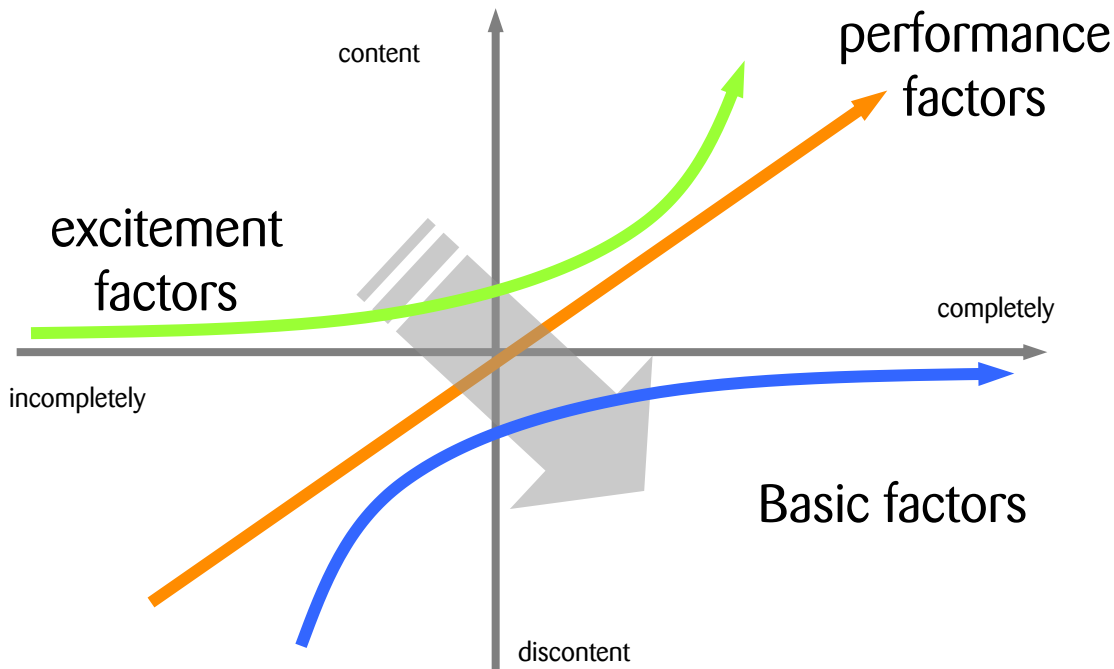


Categorization of requirements

Kano model



During elicitation of requirements it is important to know which of the requirements are most important to achieve customer satisfaction.



Eliciting requirements



Documenting requirements



Checking and reconciling requirements



Managing requirements



Documentation is a key supporting feature for goal oriented communication

- It is necessary to document important information
- Any more or less formal way of capturing requirements is called a documentation technique (from writing various styles to using formal diagrams)
- Many people come in contact with the documentation
- A documentation support is necessary because requirements are long-lasting, they may be legally relevant and they should be accessible to all people

Common reference structures for requirements documents

- IEEE 830–1998 (Reference structure for "Software Requirements Specification")
- IEEE 1233–1998 (Reference structure for "System Requirements Specification")
- Volere...



Adobe Acrobat
Document

Basics for Checking and of Reconciling Conflicting Requirements



Basics for Checking Requirements



The major goal of checking requirements is to find out whether they conform to quality criteria (e.g. correctness or completeness) that have been set beforehand.

Basics of Reconciling Conflicting Requirements



The goal for reconciling conflicts within the requirements is to create a common and agreed understanding of the requirements among all relevant stakeholders.

These principles ensure that during checking a maximum number of errors in the requirements can be identified.

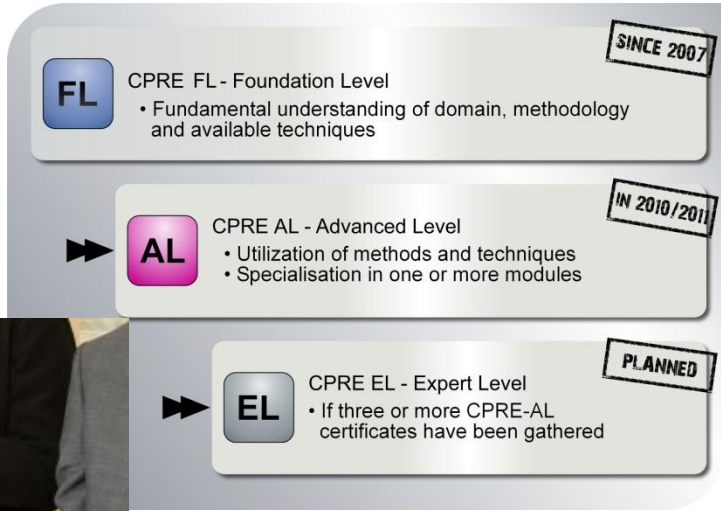
- Involve the right stakeholders
- Separate error discovery and error correction
- Check from different points of view
- Switch between different styles of documentation
- Construct development artefacts based on the requirements
- Repeat checks

Requirements constantly change and evolve over the life cycle of a system. We need a change mgt process:

- Classification of each incoming change request
- Determining the effort needed for the change
- Judging cost and benefit of the change request
- Defining new requirements based on the change request
- Deciding whether to accept or decline the change request
- Prioritize the accepted change requests
- Allocate changes to a baseline (and projects affected by this baseline)

-
- RE is the systematic, disciplined procedure with elicit, documents, checks and reconcile, and manage from requirements.
 - A goal is about to understand and describe, what customers wish or need.
 - With RE the risk is to be minimized that a system or a product is developed, which is not useful or pleases to the customer.
 - Problem definition (what) and description of solution (How) alternate during the development process and depend on the point of view of the Stakeholders.

CPRE – Certified Professional Requirements Engineer



<http://certified-re.de/>