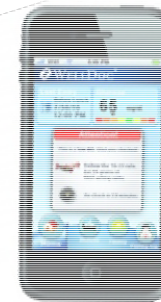# Development of a Product Vision
Market Analysis and Product Positioning

Learning Objectives

Know the definitions of and relationships among the following terms

- Idea, Need, Goal, Requirement, Constraint

- Stakeholder, Customer, User

- Problem, Solution, Product

Be able to do the following activities

- Identify existing software

- Delineate existing software

- Document a vision for a software using the RUP Vision template

Requirements Engineering: Requirements

According to the IEEE Standard Glossary Std 610.12-1990, a <u>requirement</u> is a

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 documents.

3. A documented representation of a condition or capability as in (1) or (2).

Questions for interpretation of the definition:

- What are the 3 essential characteristics of a requirement based on 1. and 2.?

- How would you define the following concepts: an idea, a need, and a goal*?

- How would you derive the following concepts: a problem, a solution?

_____

*We consider here a "goal" to be a synonym for "objective".

Requirements Engineering: Definitions

Functional Requirements

- – Functions: Input-Storage-Output
- – Usage: Process, Scenario
- – Domain: Data, Behaviour

Non-Functional Requirements

- – Quality Requirement
- – Constraint: An imposed design decision

Interfaces

- – Machine-to-Machine Interface
- – Graphical User Interface

Other

- – Product: A software that is offered for use. A product usually has multiple features.
- – Feature: A set of requirements that are implemented together and fulfil a goal.
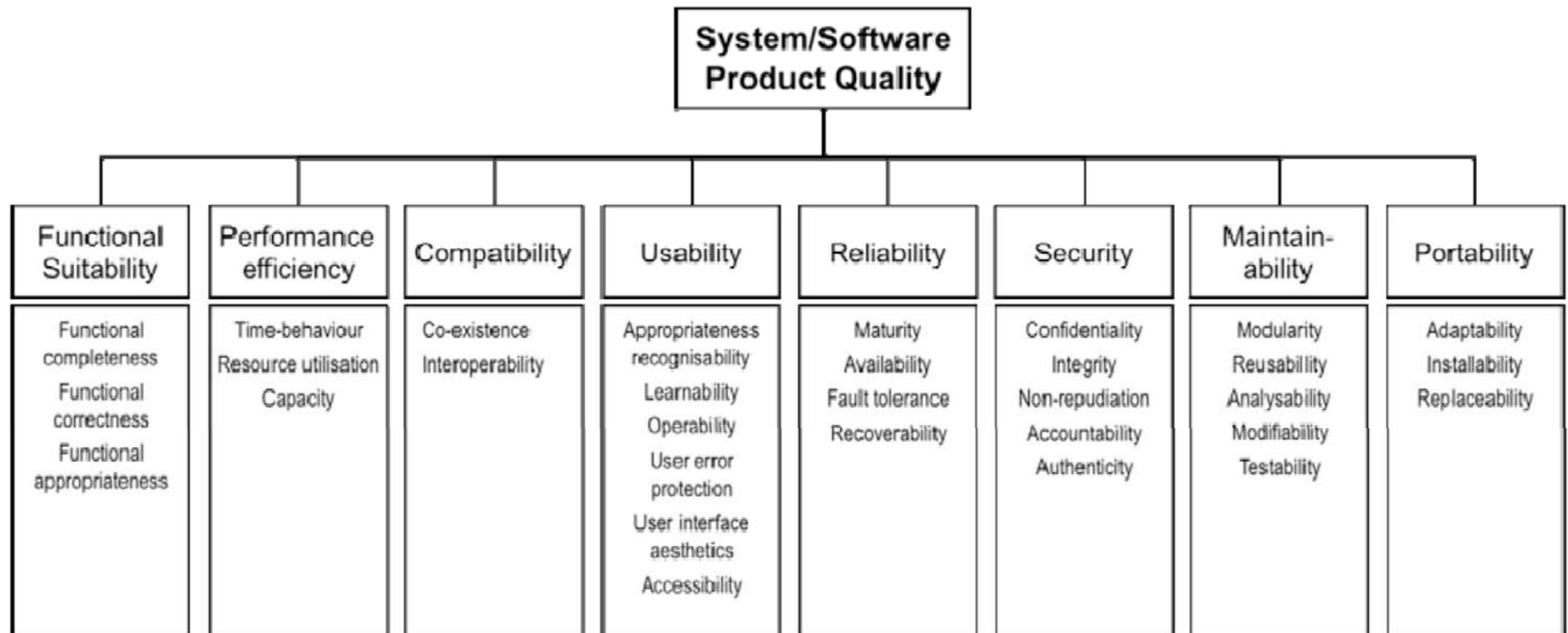
Definition of Terms

Glossary:

https://www.ireb.org/content/downloads/1-cpre-glossary/ireb_cpre_glossary_16_en.pdf

IREB — International Requirements Engineering Board

Martin Glinz

A Glossary of Requirements Engineering Terminology

Version 1.6 May 2014

With Dictionaries of Terminology in Dutch, French, German, Hungarian, Italian, Polish, Portuguese (Brazil), Russian, Spanish and Swedish

Quality Requirements

Common types of software qualities

System/Software Product Quality							
Functional Suitability	**Performance efficiency**	**Compatibility**	**Usability**	**Reliability**	**Security**	**Maintain-ability**	**Portability**
Functional completeness Functional correctness Functional appropriateness	Time-behaviour Resource utilisation Capacity	Co-existence Interoperability	Appropriateness recognisability Learnability Operability User error protection User interface aesthetics Accessibility	Maturity Availability Fault tolerance Recoverability	Confidentiality Integrity Non-repudiation Accountability Authenticity	Modularity Reusabillity Analysability Modifiability Testability	Adaptability Installability Replaceability

ISO/IEC FDIS 25010-2010: System and Software Quality Models.

Requirements Engineering: Customer vs. User

According to the Merriam-Webster dictionary, a <u>customer</u> is
  – someone who buys goods or services from a business

According to the Merriam-Webster dictionary, a <u>user</u> is
 – a person or thing that uses something

Questions for interpretation of the definitions:
  – How does a X interact with the software?
  – What does the software do to offer personalized services to X?
  – Can a customer and the user be the same person?

Requirements Engineering: Goals

Common types of goals that customers or users achieve with software

- fulfilled goal = advantage, benefit = strength of the product
- (potentially) unfulfilled goal = disadvantage (risk) = weakness of the product
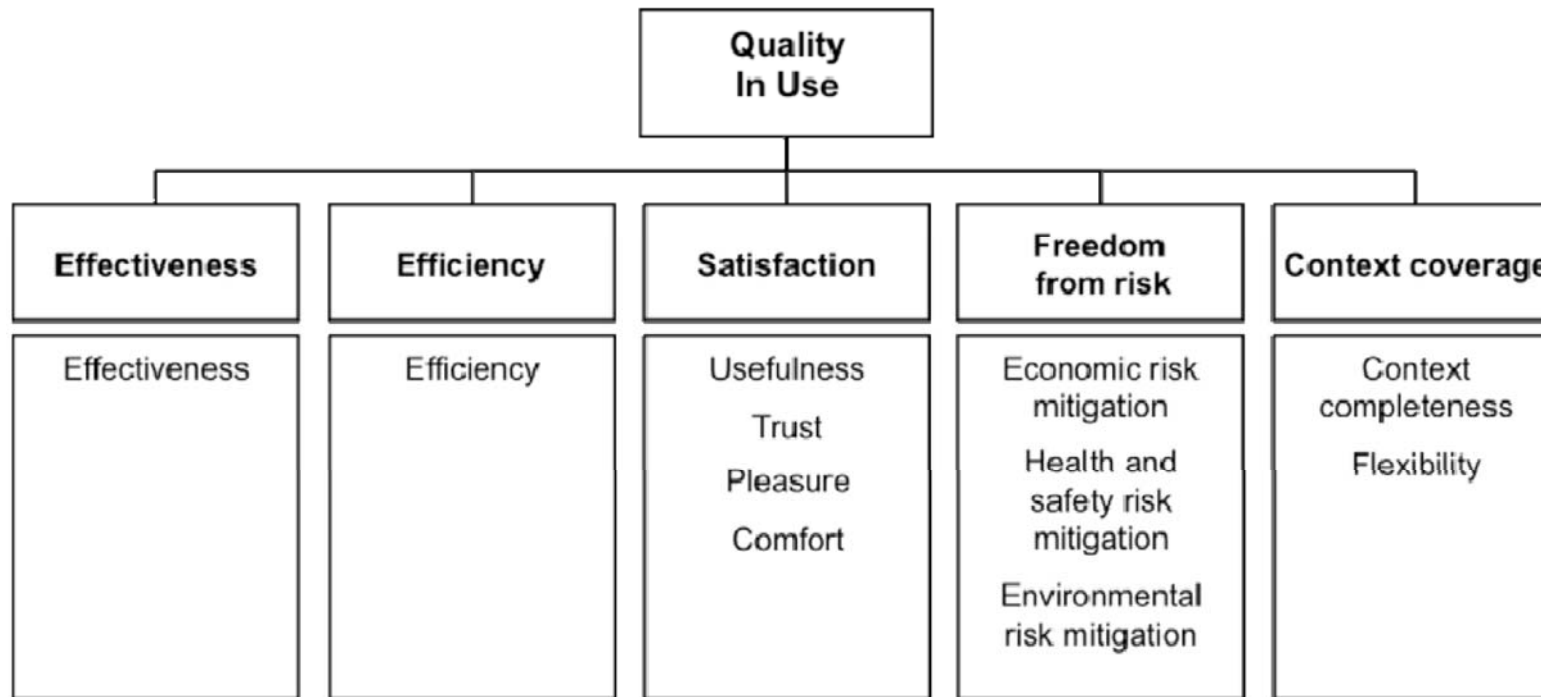
Other: Compliance

ISO/IEC FDIS 25010-2010: System and Software Quality Models.

Technical Market Analysis

Objectives: to understand the requirements and goal-related SWOT of software products that your target customers and users may want to have.

Internal factors: processes, capabilities, technology, finances, infrastructure, intellectual property rights, team, organization, leadership, benefits, services, handling of the markets

Strengths (capitalize on, preserve) - - -	Weaknesses (minimize, eliminate) - - -
Opportunities (exploit, achieve) - - -	Threats (avoid) - - -

Environmental factors: market potential, social trends, competition, economic trends, technological / ecological / political trends, suppliers, investors, employment market, market partners and their needs

Technical Market Analysis

Approach:

1. Analyze the customers

    a. Who is your typical customer, incl. background and problems?

    b. How many customers are there, and will they become more?

2. Identify and evaluate the alternatives (whether products or not)

    a. What are the alternatives that solve the problems?

    b. What are the strengths and weaknesses of each alternative?
        What features are used to generate these strengths and weaknesses?

    c. How important are these strengths and weaknesses to the customer?

3. Consolidate the strengths, weaknesses, opportunities, and threats (SWOT)

    a. Which goals have been or will become important but have been ignored?

    b. What features could you implement to offer a more attractive product at a lower cost than your competitors?

4. Iterate until you have sufficiently covered the alternatives, have identified the customer you want to target, and know how you will satisfy that customer.

Target Customer

Alina

– Is 10 years old

– Loves her Samsung tablet (even-
   though she did not receive the one she
   really wanted)

– Moved from Sweden to Switzerland
   and misses her friends so much that
   she uses her holidays to join school in
   Sweden

– Has parents that love her over all
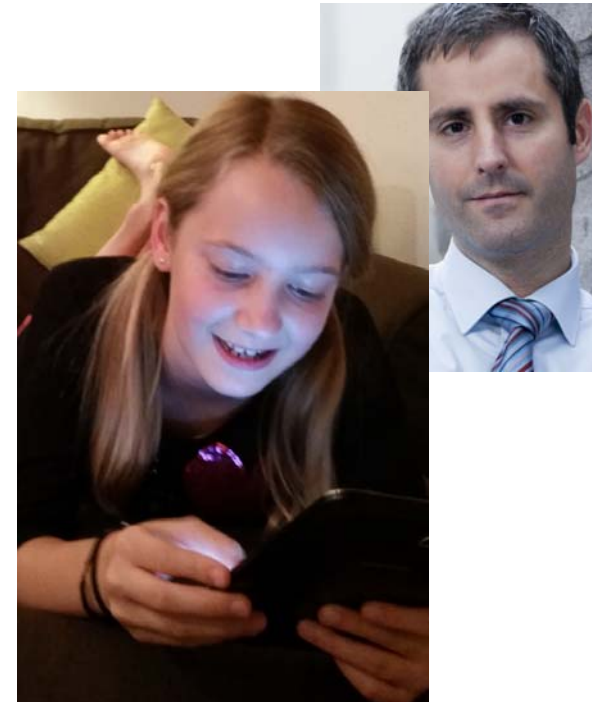
Product Positioning

https://play.google.com/store/apps/details?id=air.MSPMobile

What does this product do?

Who might want to have it?

What are its strengths and weaknesses?

MovieStarPlanet

MovieStarPlanet ApS   Simulation   ★★★★☆ 542,852 👤

PEGI 3

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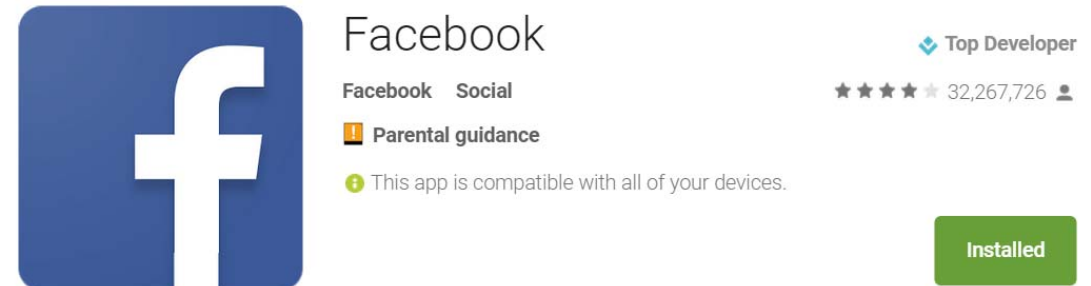
Read more

Product Positioning

https://play.google.com/store/apps
/details?id=com.facebook.katana

What does this product do?

Who might want to have it?

What are its strengths and
weaknesses?

Product Positioning

http://www.amazon.de/Switel-DC551-schnurloses-Analog-DECT-Telefon-Mehrfarbig/dp/B006IMO2IU
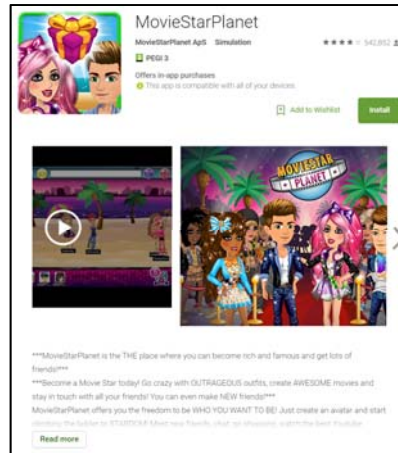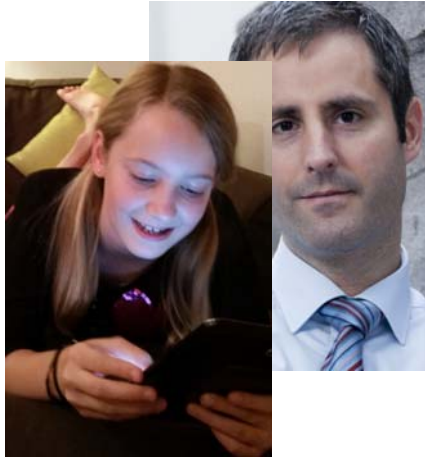
What does this product do?

Who might want to have it?

What are its strengths and weaknesses?

Technical Market Analysis

Needs	Movie Star Planet	Facebook	Telephone	
Total				

1st Definition of Your Software: the Vision

Problem statement

the problem of	(what is the problem of the customers?)
affects	(who are the customers?)
the impact of which is	(why is the problem important for a customer?)
a successful solution	(when would the problem be considered to be solved?)

Position statement

for	(who are the users?)
who	(what are the users doing?)
the	(what is the name and type of your software?)
that	(what are the key features of your software?)
unlike	(what are the alternatives?)
our solution	(what are the unique advantages of your software?)

Open Unified Process Vision Document:
http://epf.eclipse.org/wikis/openup/core.tech.common.extend_supp/guidances/templates/resources/vision_tpl.dot

Example: Operating Theatre Monitor

https://youtu.be/CBsOiabbNIc