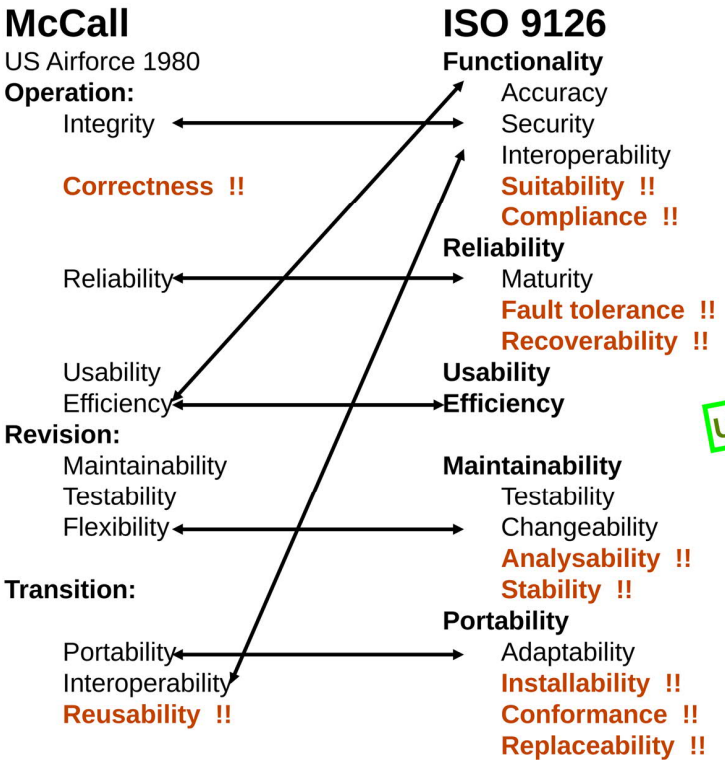
ETSN15: Exercise 4
Quality requirements

ELIZABETH BJARNASON

Quality factors

Fig 6.1 Quality factors



Use as check lists

Quality Grid

Fig 6.2 Quality grid

Quality factors for Hotel system	Critical	Impor-tant	As usual	Unim-portant	Ignore
Operation					
Integrity/security			X		
Correctness			X		
Reliability/availab.		1			
Usability		2			
Efficiency			X		
Revision					
Maintainability			X		
Testability			X		
Flexibility			X		
Transition					
Portability					X
Interoperability	3			4	
Reusability					X
Installability		5			

Concerns:

1. Hard to run the hotel if system is down. Checking in guests is impossible since room status is not visible.
2. We aim at small hotels too. They have less qualified staff.
3. Customers have many kinds of account systems. They prioritize smooth integration with what they have.
4. Integration with spreadsheet etc. unimportant. Built-in statistics suffice.
5. Must be much easier than present system. Staff in small hotels should ideally do it themselves.

From: Soren Lauesen: Software Requirements

Usability = Fit for use + Ease of use

	Usability factors				
	Ease of learning	Task efficiency	Ease of remembering	Subjective satisfaction	Understandability
Flight control system					
Web-system for new consumer business					
Hotel management system					
Accounting system					

Writing good QRs

- Clearly specify WHAT quality aspect is in focus – **measurable**
- Specify **scenario & context**, e.g. current workload on system
- Define **target as range**, rather than absolute value. QUALITY is **relative**, not absolute!
- **FIRST - Specify DESIRED quality**, NOT
  - how to implement / realise, e.g. screen layouts for usability – design-level requirements
  - through certain functionality, e.g. security protocols – product-level requirements
- **THEN** - QR -> FR and technical design **– HOW to achieve** the required quality levels!

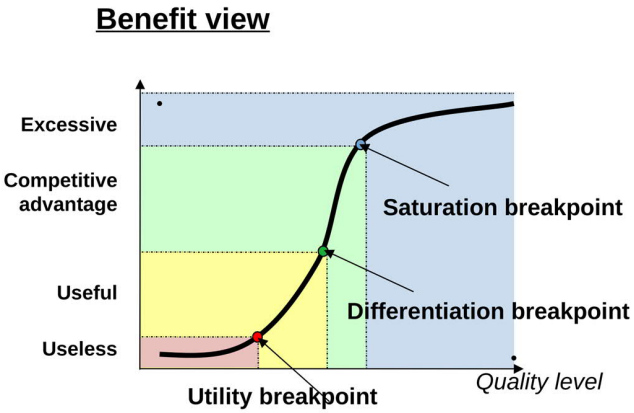
Styles for QRs

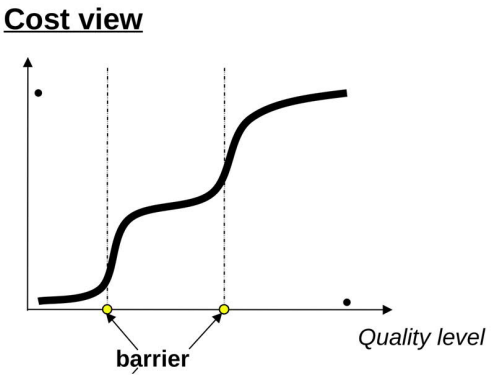
- Open metric
- Open target
- Planguage
- QUPER

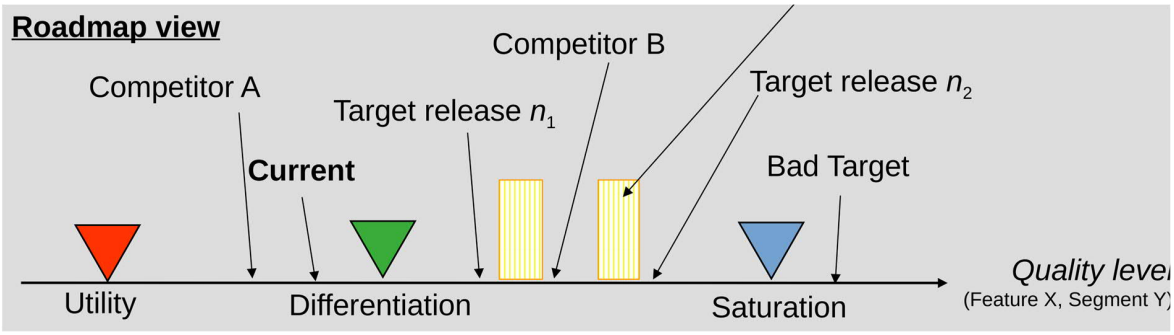
OR

- A variant of feature requirement with **measurable aspects**

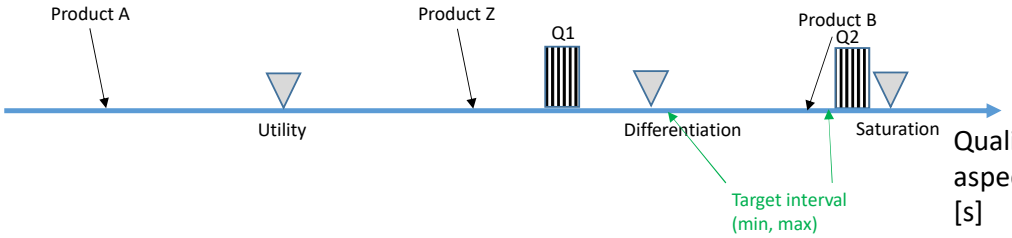
QUPER







QUPER Example



- Step 1 – **Define quality aspect**
  - Quality indicator: Time to play music [seconds]
  - Quality type: Performance
  - Definition: Measured from player invoke button pressed until music is played using 2 GB memory stick type X with 100 tracks with average duration of 3 min
- Step 2 – **Identify reference products**
  - Competitor Product A: 4 seconds
  - Competitor Product B: 2 seconds
  - Own Product Z: 3 seconds
- Step 3 – **Identify market expectations**
  - Utility breakpoint: 3.5 seconds
  - Differentiation breakpoint: 2.6 seconds
  - Saturation breakpoint: 1.8 seconds
- Step 4 – **Estimate** the closest **cost barrier** (CB1)
  - Q1: 2.7 seconds, C1: 4 weeks (SW optimization)
- Step 5 – **Estimate** the second **cost barrier** (CB2)
  - Q2: 1.9 seconds, C2: 24 weeks
- Step 6 – **Define target range**
  - Min target: 2.5 seconds – Beyond differentiation with only minor cost.
  - Max target: 2 second – Just before next cost barrier

Today's exercises

- Usability factors – 1-2
- Quality grid & QRs – 3
- QUPER – 4

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