

ICSEA 2012, November 22.



*The Seventh International Conference on
Software Engineering Advances*

EXPERT PANEL:

User-Centric Requirements of Hardware/Software Systems

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HERWIG MANNAERT



Some Definition

- A user-centered requirements process bases product requirements on the needs of real users. Those needs can be explored by means of contextual inquiry or other field research methods. User centered requirements differ from typical functional requirements in that they focus on what it is that categories of users will be able to do with the product.

| Requirement | Description | Priority |
|-------------|---|----------|
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Types and Merits

- Types of users:
 - SW application: end-users
 - SW library: software developer
 - HW module: software developer
 - HW module: hardware designer
 - ALL: business owner ?
- Merits:
 - Explicit attention for user requirements
 - Distinction between user requirements and functional requirements



Questions and Risks

- Questions:
 - Do you need both user requirements and functional requirements ?
 - What about translation from user requirements to functional requirements ?
- Risks:
 - Divert attention from the essential complexity, e.g. specification and design of planes/rockets based on various preferences of pilots/astronauts
 - Impact of *user-centered design* on technical design issues and complexity



Gaetana Sapienza, Johan Åkerberg – ABB Corporate Research Sweden

End-User Requirements

A trade-off

Presented by **Gaetana Sapienza**

Panel: *“User-Centric Requirements of Hardware/Software Systems”*

ICSEA 2012 - Nov 22, Lisbon

An Embedded Systems Products/Product Family Highlighting Few Features



Operational Life Time Up to Several Decades

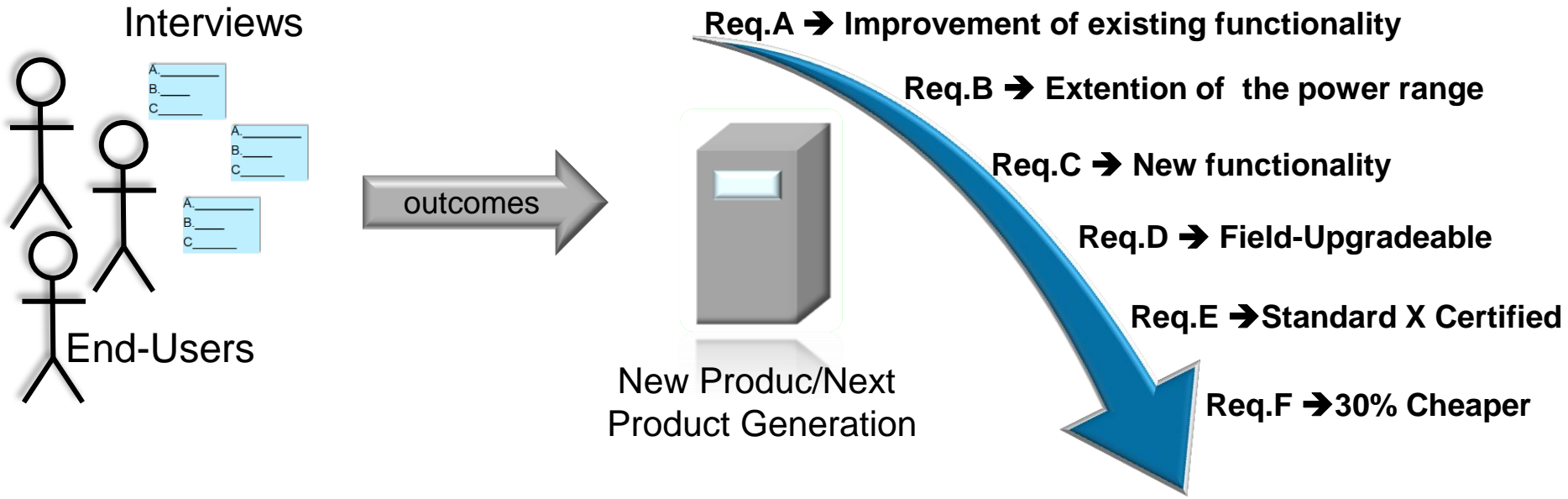
Communication/System Integration/Security

Quality/Efficiency/ Reliability

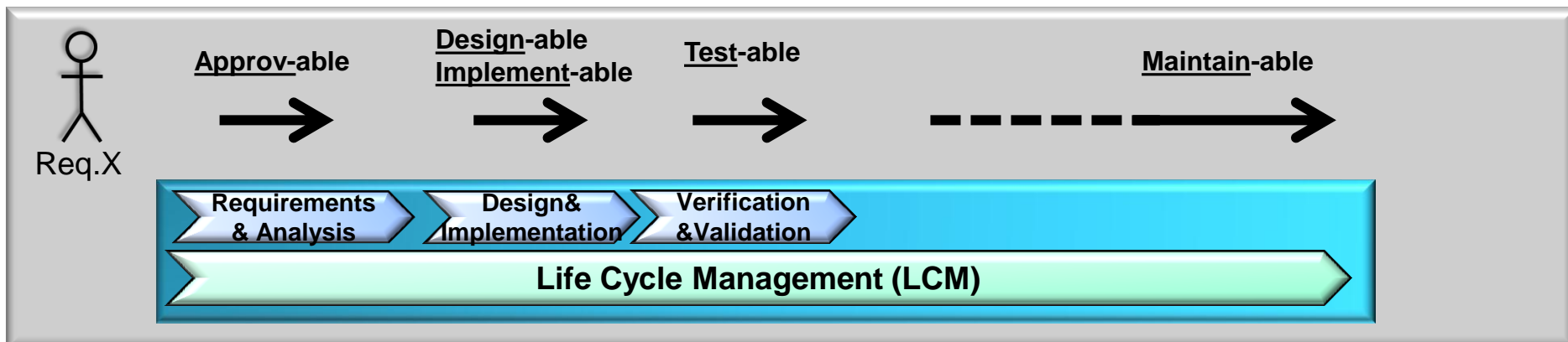
Highly Competitive

...and more

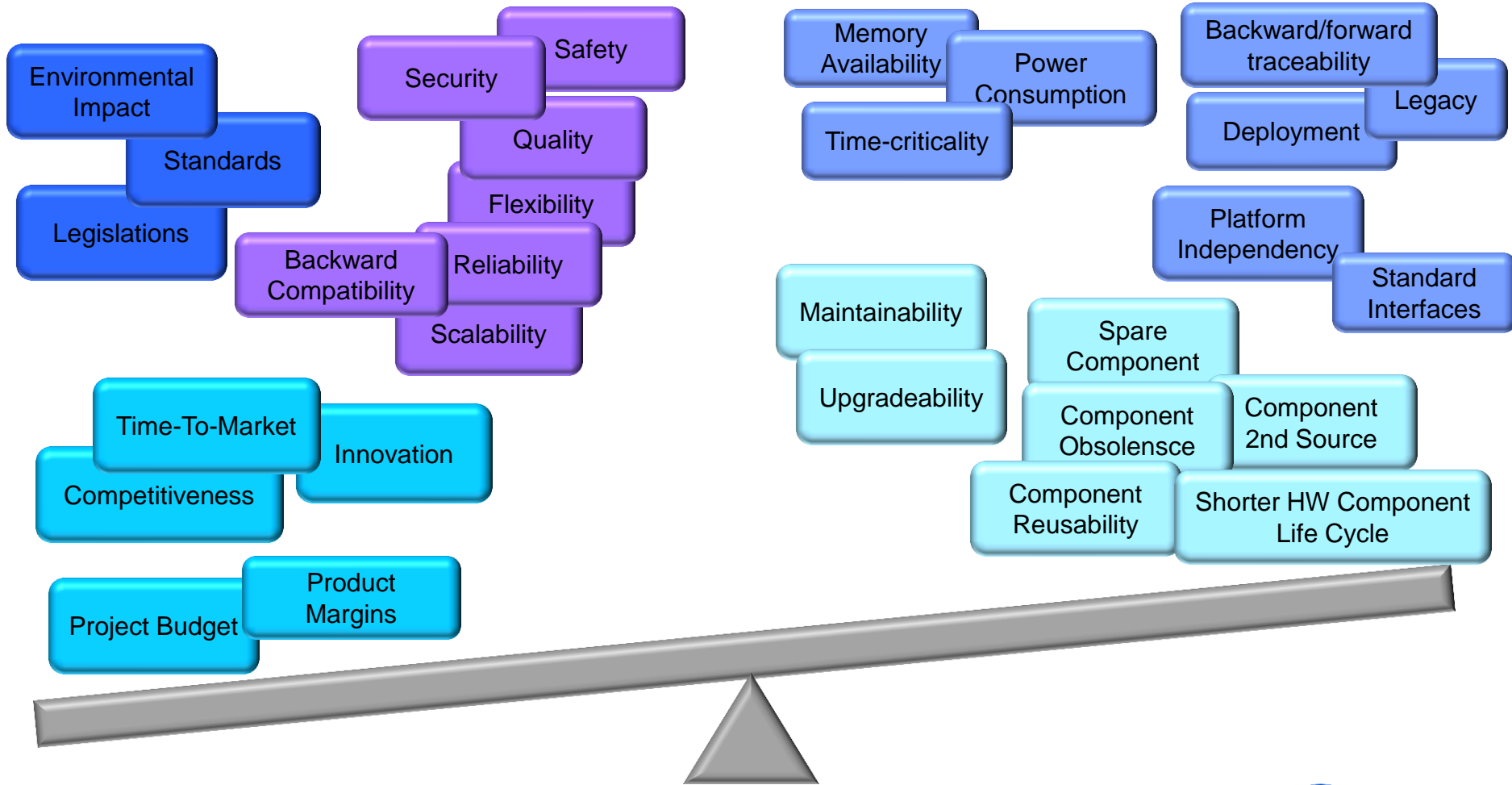
The End-User Requirements – Focus On What about the new product/next product generation?



Simplified Overview - The Ideal Path



Balancing End-User Requirements With respect to Overall Requirements and Constraints



**How to efficiently trade-off End-User Requirements
in order to meet the End-User Satisfaction**



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User-Centric Requirements of Cloud Services

Panel SoftNet 2012

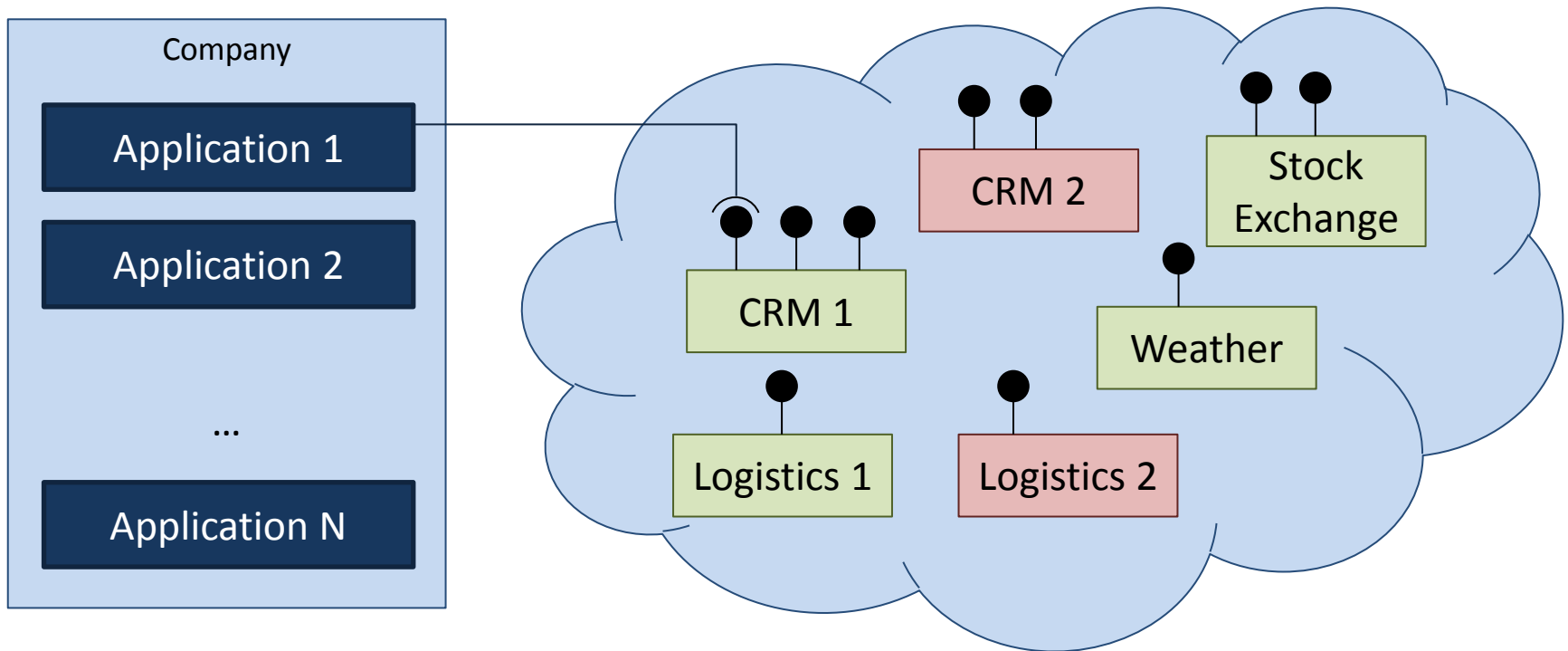
22. November 2012

Gebhart Quality Analysis (QA) 82

Dr. Michael Gebhart

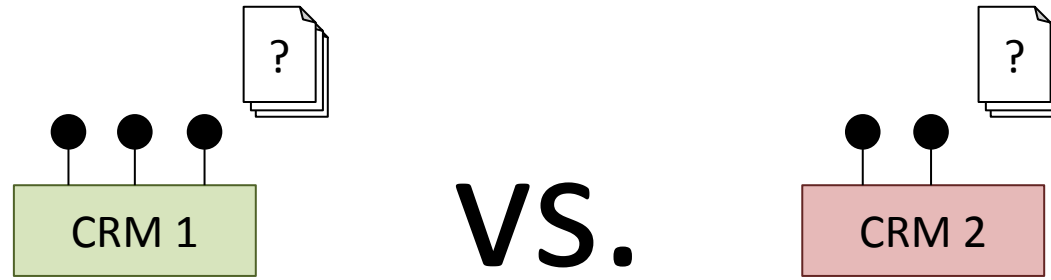
<http://www.qa82.com>

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- Companies increasingly use cloud services
 - Cloud service can represent entire business processes
- Gebhart Quality Analysis (QA) 82 focuses on determining the integration efficiency of cloud services into an existing service-oriented architecture
 - Based on the design of service interfaces etc.
- Enables a systematic decision for a certain cloud service

Open Questions



- What are other requirements of cloud service users / consumers for a good public cloud service?
- What does the term “Quality” mean for cloud services?
 - Controversial question
- What does it depend on?
- What are the necessary information to determine whether the requirements are fulfilled?
 - What cannot be described by a Service Level Agreement (SLA)?



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Gebhart Quality Analysis (QA) 82

<http://www.qa82.com>

<http://www.qa82.de> (German)



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Quality Analysis in the context of SOA and cloud

Certification of high-quality services

Training for an engineering methodology based on SoaML

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