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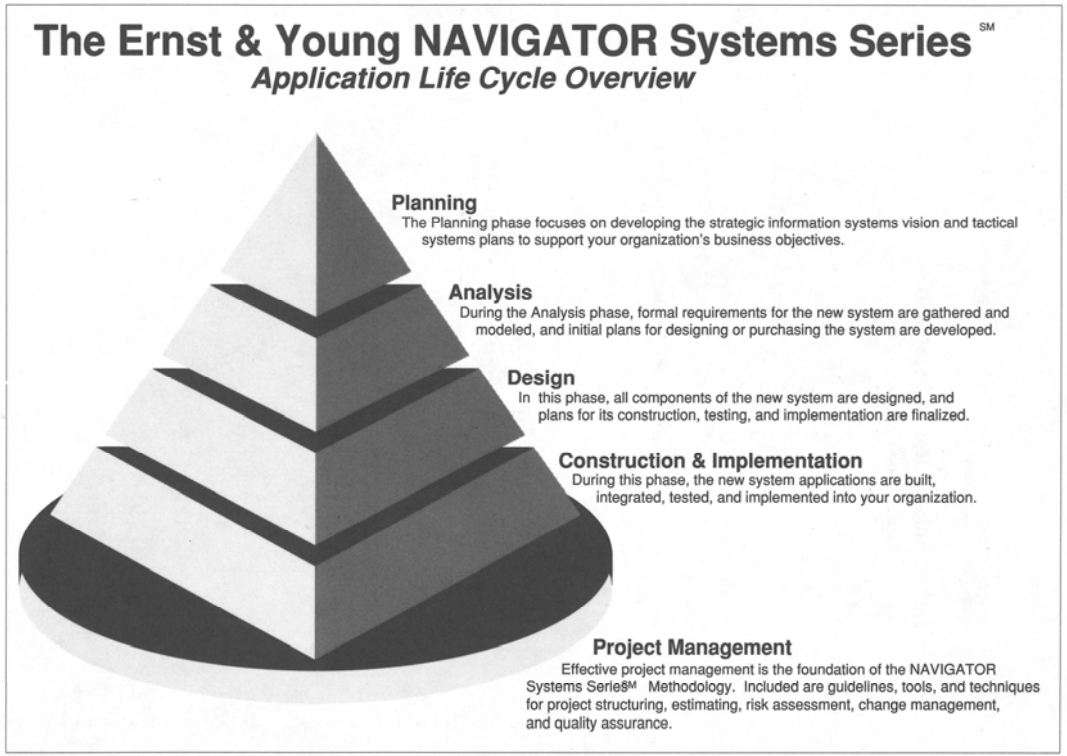
ACHIEVE YOUR VISION
A Potted History of a Requirements Management Training Course
CBI 2016 - 31st August, Paris, France

- Olivier Hayard
  - IT Governance Consultant
  - Requirements Management practitioner and teacher
- Software Engineer
- Working at Itecor since 1993
- Collaborating with EPFL since 2008

My initial professional context

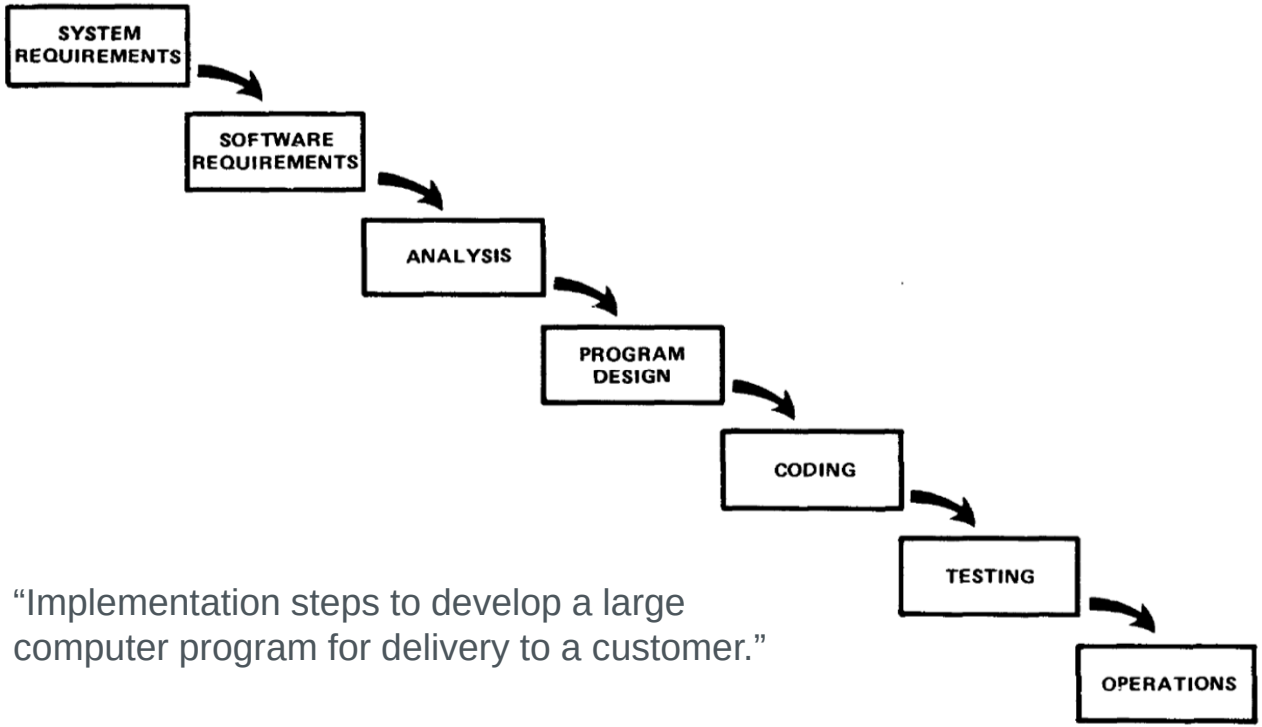
93



Ernst & Young, Ernst & Young Navigator Systems Series Release 1.0, Quick Reference Guide, 1990.

“Waterfall” context

93

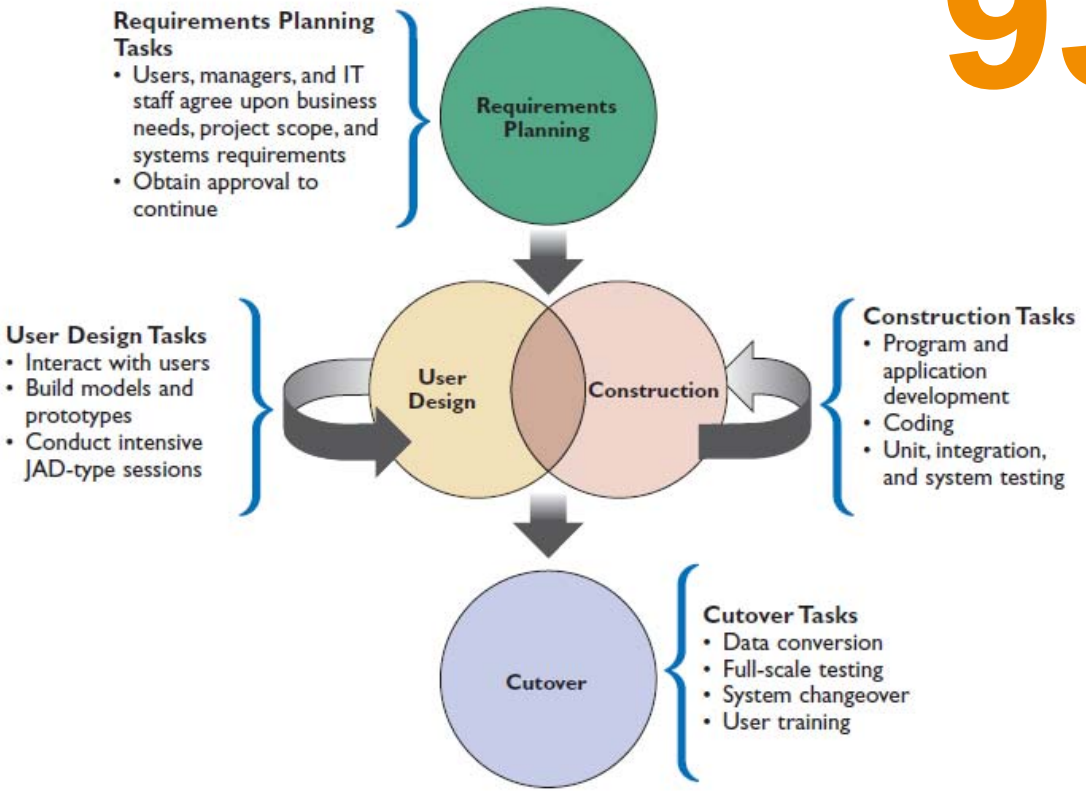


“Implementation steps to develop a large computer program for delivery to a customer.”

MANAGING THE DEVELOPMENT OF LARGE SOFTWARE SYSTEMS - *Dr. Winston W. Royce Proceedings, IEEE WESCON,* August 1970, pages 1-9.

RAD

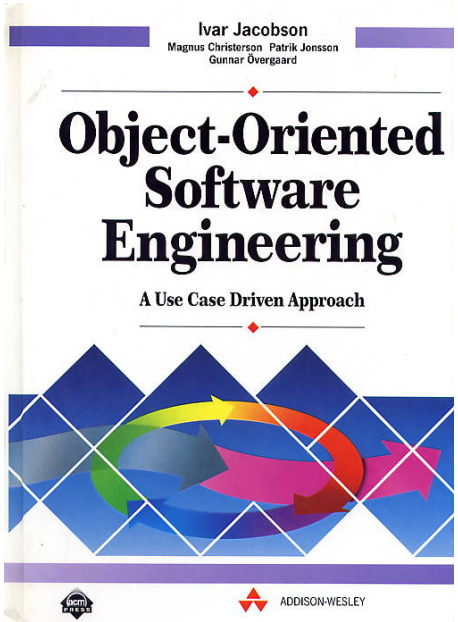
93-95



James Martin, Rapid Application Development, Macmillan, 1991

“A Use Case Driven Approach”

92



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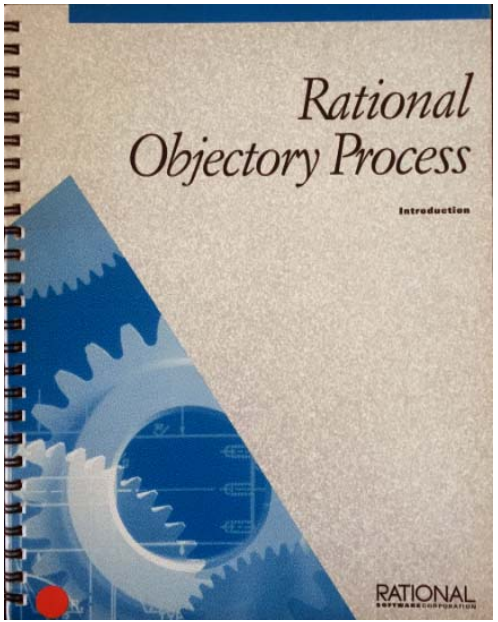
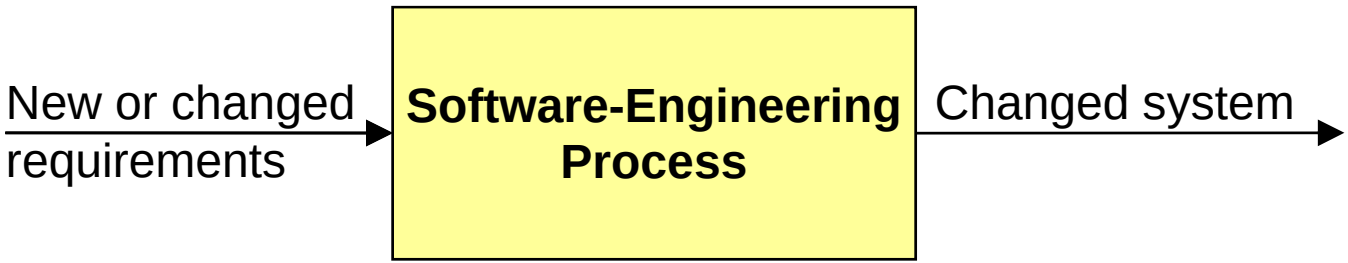


Object-Oriented Software Engineering *A Use Case Driven Approach* - Ivar Jacobson, Magnus Christerson, Patrik Jonsson & Gunnar Overgaard, Addison-Wesley , 1992
Rational Objectory Process – Introduction 4.0 – Printed version A – 1996-10-25

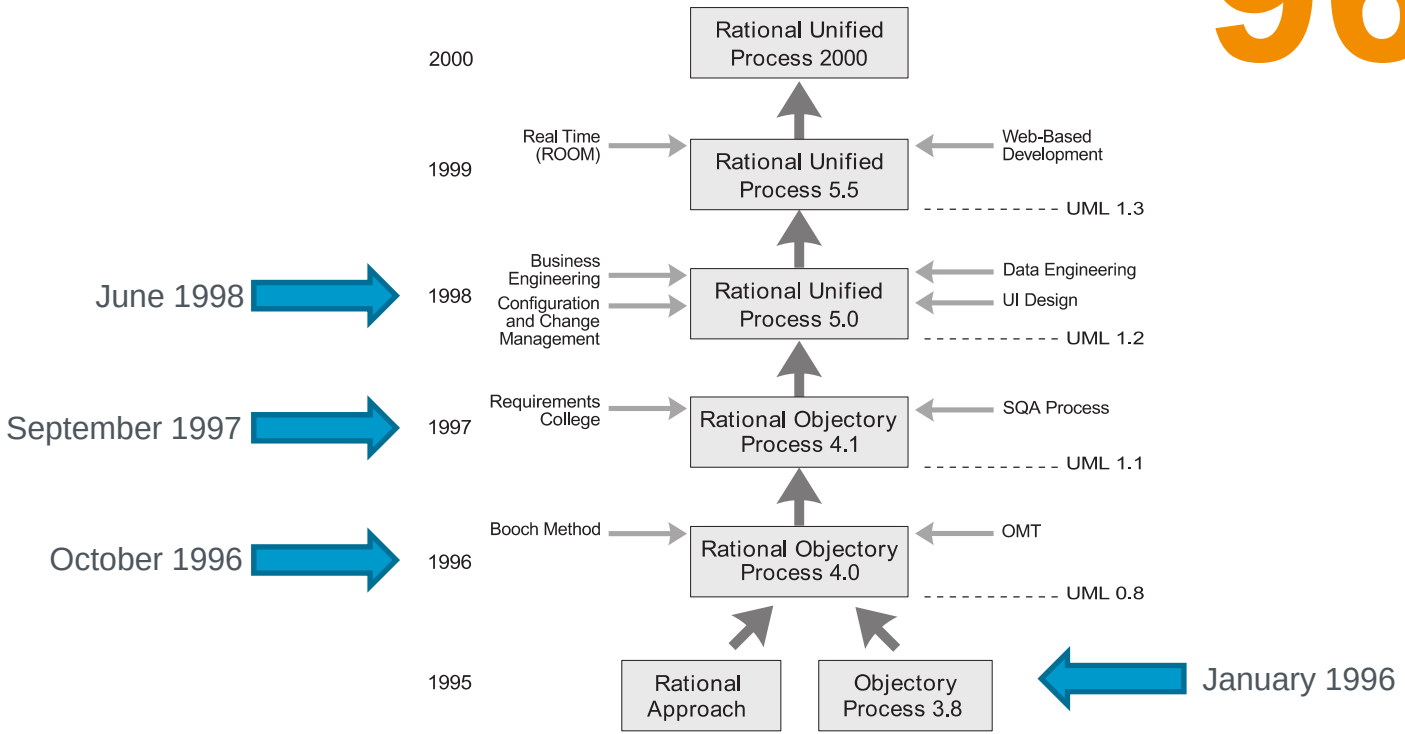
An engineering perspective...



“The software-engineering process is the process of developing a system from requirements, either new (initial development cycle) or changed (evolution cycle).”

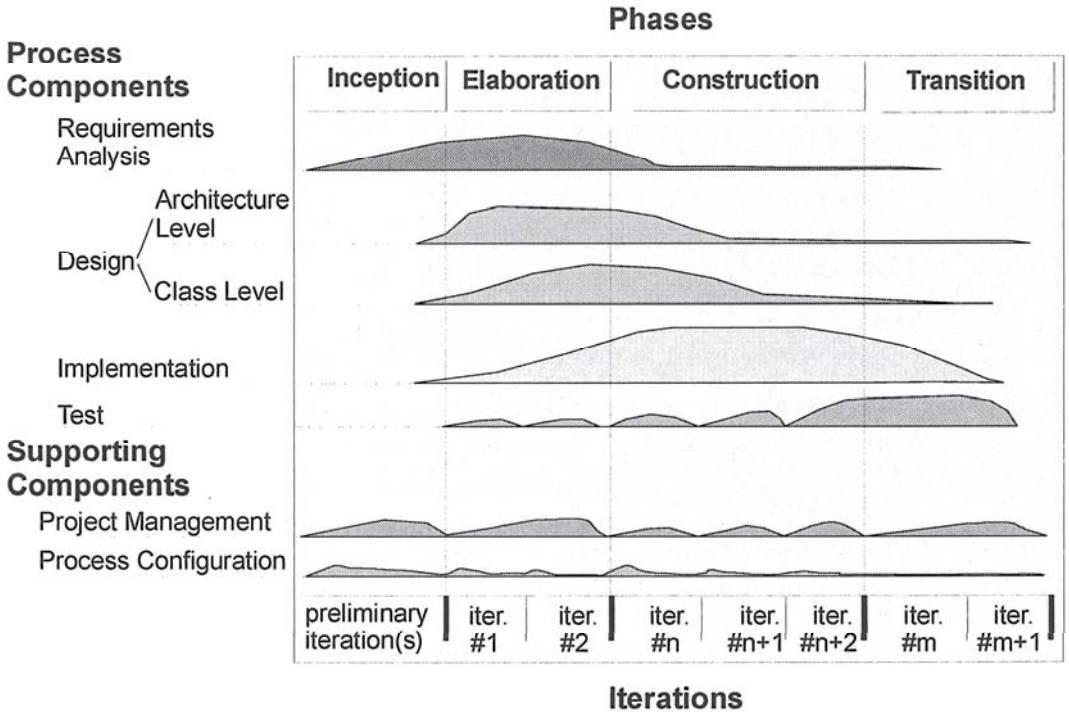
The emergence of the RUP

96-98



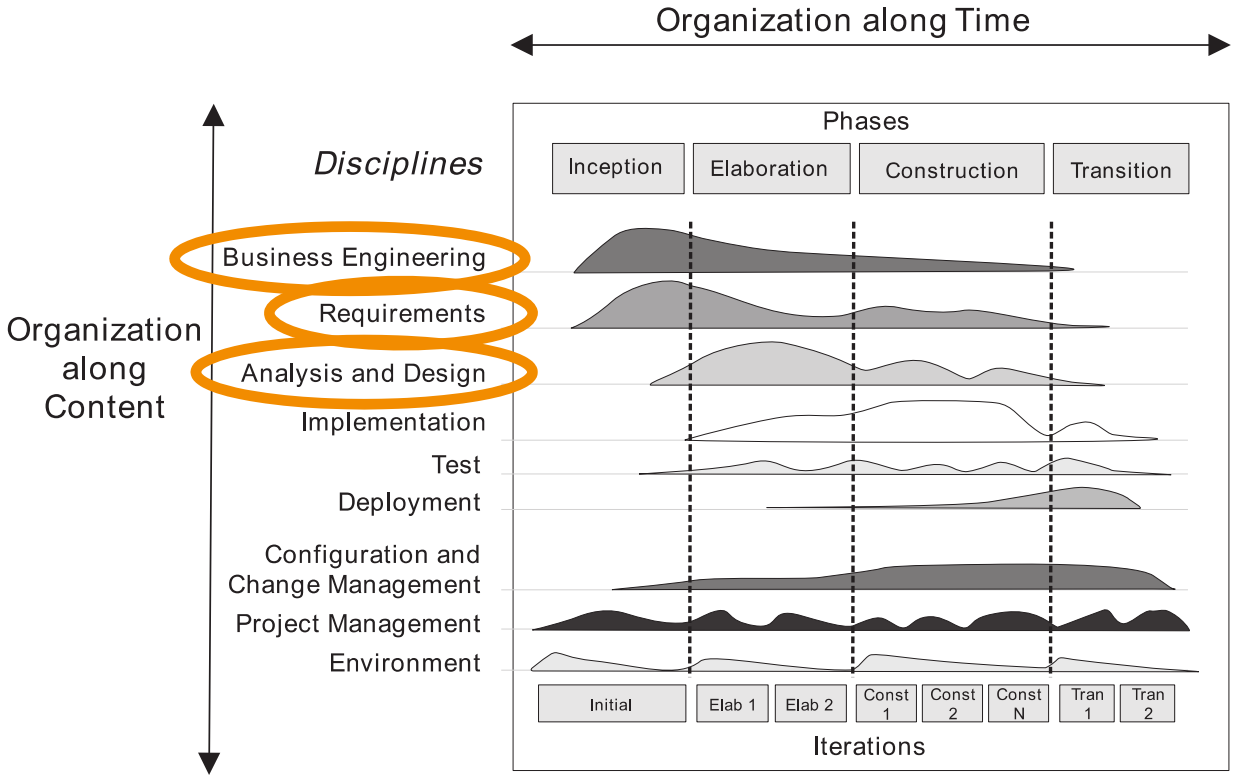
Kruchten, Introduction to Rational Unified Process - Third Edition

The Rational Objectory Process



Rational Objectory Process – Introduction 4.0 – Printed version A – 1996-10-25 - Chapter 4 p.12

The Rational Unified Process



Kruchten, Introduction to Rational Unified Process - Third Edition

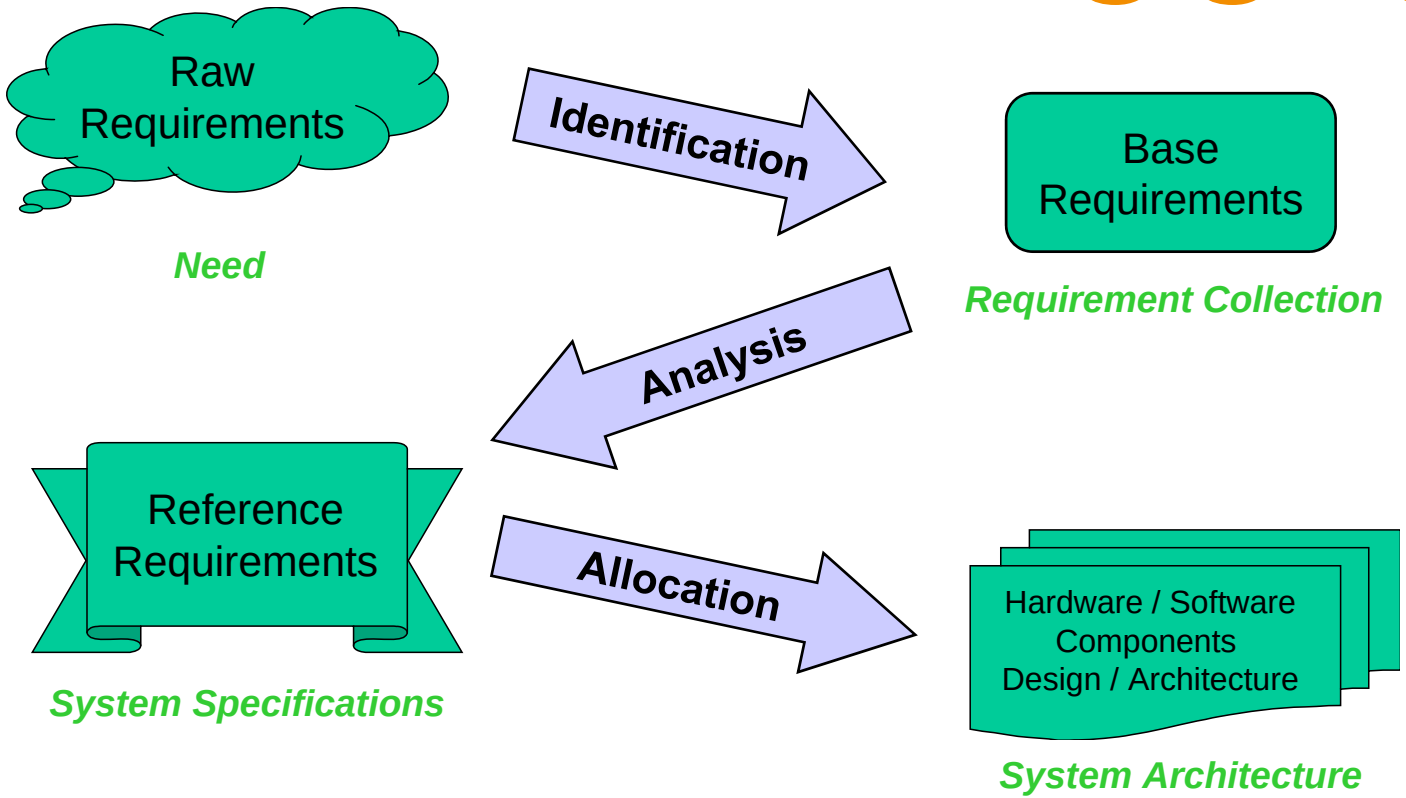
The course (initial version)

99-01

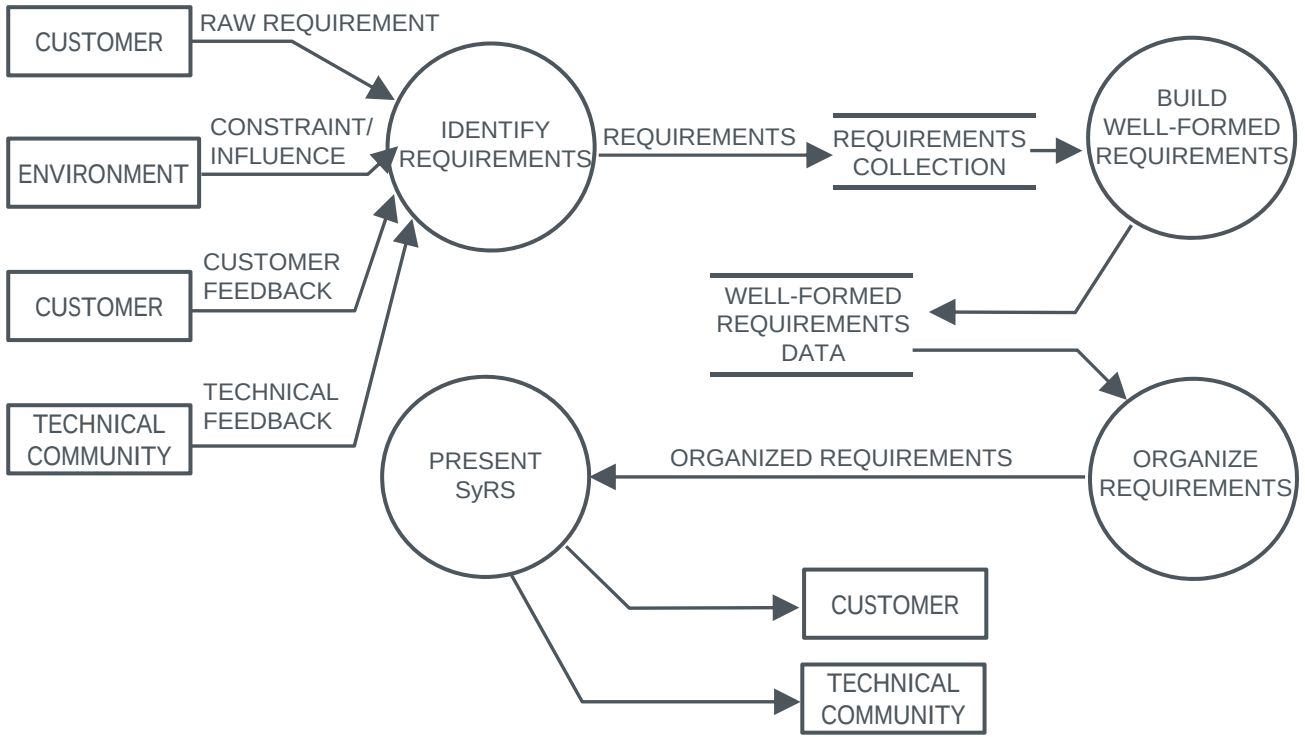
- This course was given at a client site, an automobile manufacturer
  - About 10 people (practitioners) in 3 groups.
- Then given inside Itecor to a team of 10 consultants
- The main aspects of the course were:
  - Requirements definition
  - Requirements engineering process
  - Requirements allocation to system components
  - Traceability (Proof + Impact)
- The process is illustrated the Automatic Teller Machine (ATM) example

The Requirements Engineering Process

99-00



System Requirement Specification development process



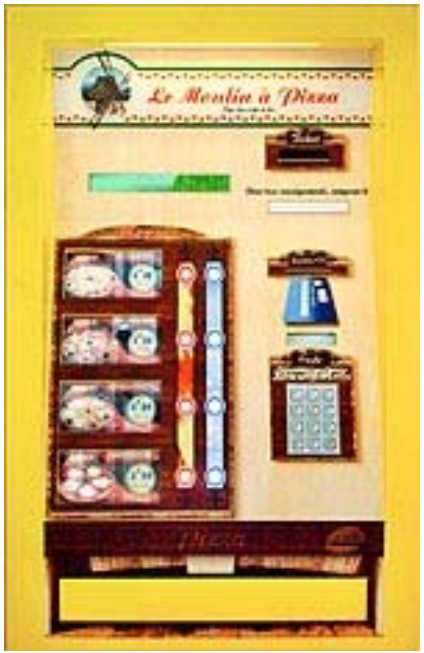
IEEE Std 1233, 1998 Edition, IEEE Guide for Developing System Requirements Specifications

2nd iteration of the course

03-05

- This course was given at the HEIG-VD University of Applied Sciences of the Canton of Vaud to undergraduate engineers.

- The main changes were:
  - Integration of the FURPS+
  - Additional example for the examination (PizzaMat)



FURPS+

- **FURPS**
  - Functionality
  - Usability
  - Reliability
  - Performance
  - Supportability
- **+**
  - Design constraints
  - Implementation constraints
  - Interface constraints
  - Physical constraints

Functional Requirements

Non-functional Requirements

Constraints

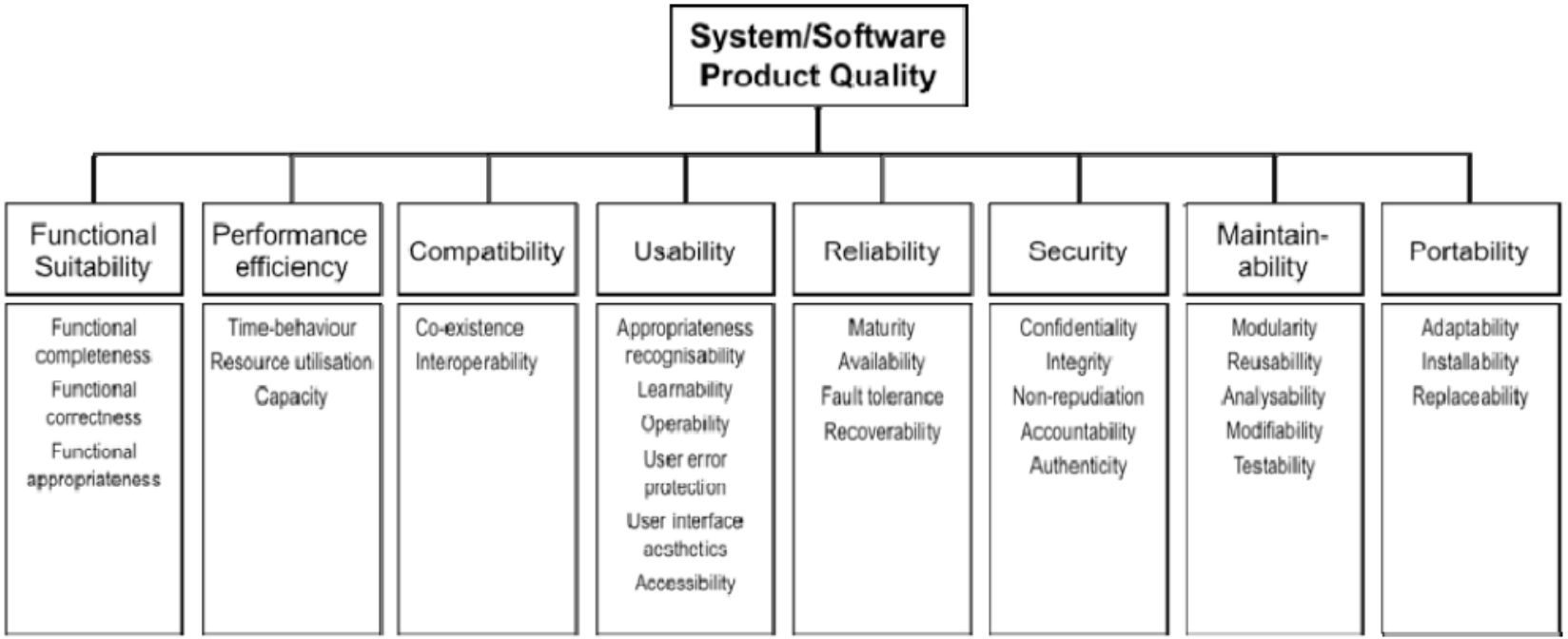
The FURPS classification was devised by Robert Grady at Hewlett-Packard

The 2006 – Today Version

06-16

- Given to various customer BA teams
- The main changes were:
  - Requirements engineering in the context of Quality Assurance
  - Introduction to different Quality Model (e.g. ISO 25010)
  - The system seen as a service, including release management
  - Addition of several standard definitions (IEEE 610.12-1990, ISO 8402, IIBA BABOK, IREB CPRE Glossary and PMI Business Analysis for Practitioners guide).
  - Addition of “Requirements scope in a business context” (ISO IEC IEEE 29148-2011)
  - Explicit references to IEEE Std 830-1998 and IEEE 1233-1998 regarding the well-formedness of Requirements.
  - SCRUM (product backlog)

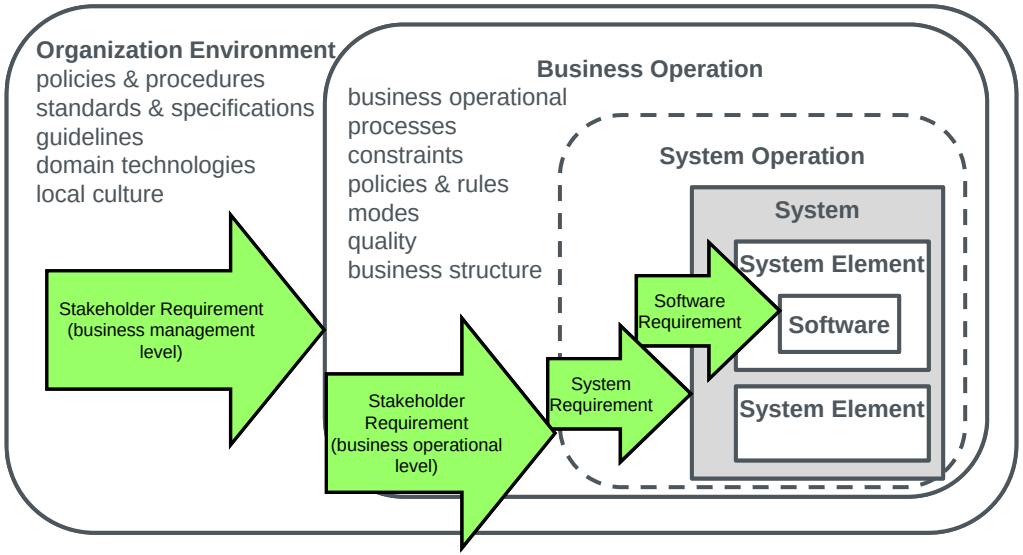
Quality Model - ISO/IEC 25010



ISO/IEC 25010:2011 - Systems and software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) - System and software quality models

Requirements scope in a business context

External Environment
market trends
laws & regulations
legal liabilities
social responsibilities
technology base
labor pool
competing products
standards & specifications
public culture
physical/natural environment



ISO IEC IEEE 29148-2011 Systems and software engineering - Life cycle processes - Requirements engineering

Lessons Learned

- No change to the requirements engineering process
- This process is quite unknown in the IT departments where I have taught
- Good reception but doubts regarding its applicability in their context
- More inputs from “industry” than from “academia”
- People are claiming for a tool
- Moving from a system to a service makes the PizzaMat exercise difficult to understand

Outlook

- The practice of Business Analysis is rising
- The requirements engineering process is central to Business Analysis as described in most standards
- This is a major opportunity to implement this process in real organizations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