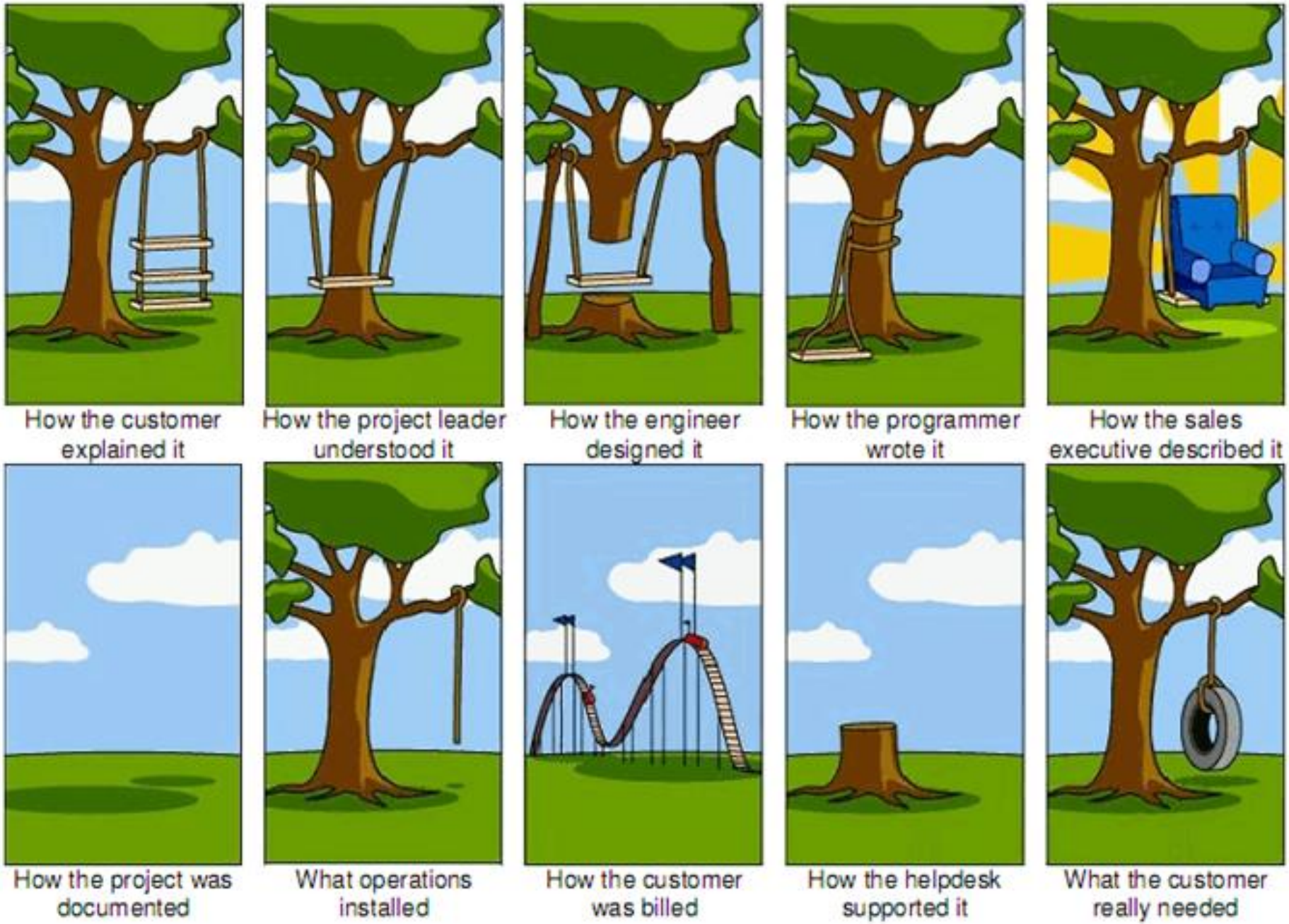
PROJECT DEVELOPMENT PROCESS

Nature has Great Organizing Power

Iterative Development

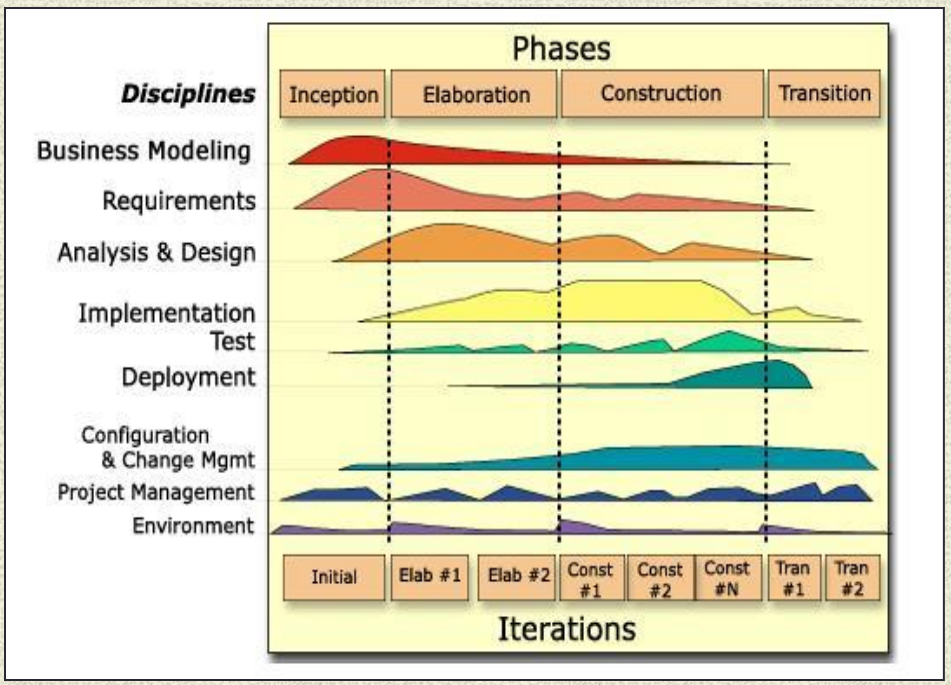
- **Iterative** and Incremental **development** is any combination of both an **iterative** design or an **iterative** method and an incremental build model for software **development**. The combination is of long standing and has been widely suggested for large **development** efforts.

- Iterative and incremental development are essential parts of the Modified waterfall models, Rational Unified Process, Extreme Programming and generally the various agile software development frameworks.


How the customer explained it
How the project leader understood it
How the engineer designed it
How the programmer wrote it
How the sales executive described it
How the project was documented
What operations installed
How the customer was billed
How the helpdesk supported it
What the customer really needed

Rational Unified Process

- Incorporates all elements of business process
- Iterative process identifies risk early in the lifecycle
- React to each risk in an efficient manner
- Keeps project on schedule
- Drives project in a predictable and repeatable manner
- Architecture-centric approach.

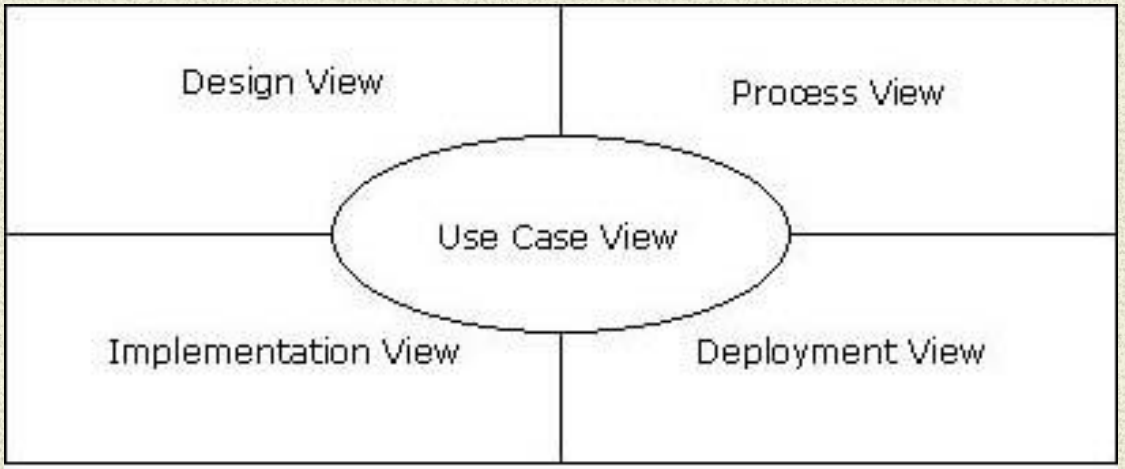


UML - RUP

Tre Amigos

"Fathers of UML"

- Booch, Rumbaugh, Jacobsen
- Mid-1990's – at Rational



Multiple Views of a Software System

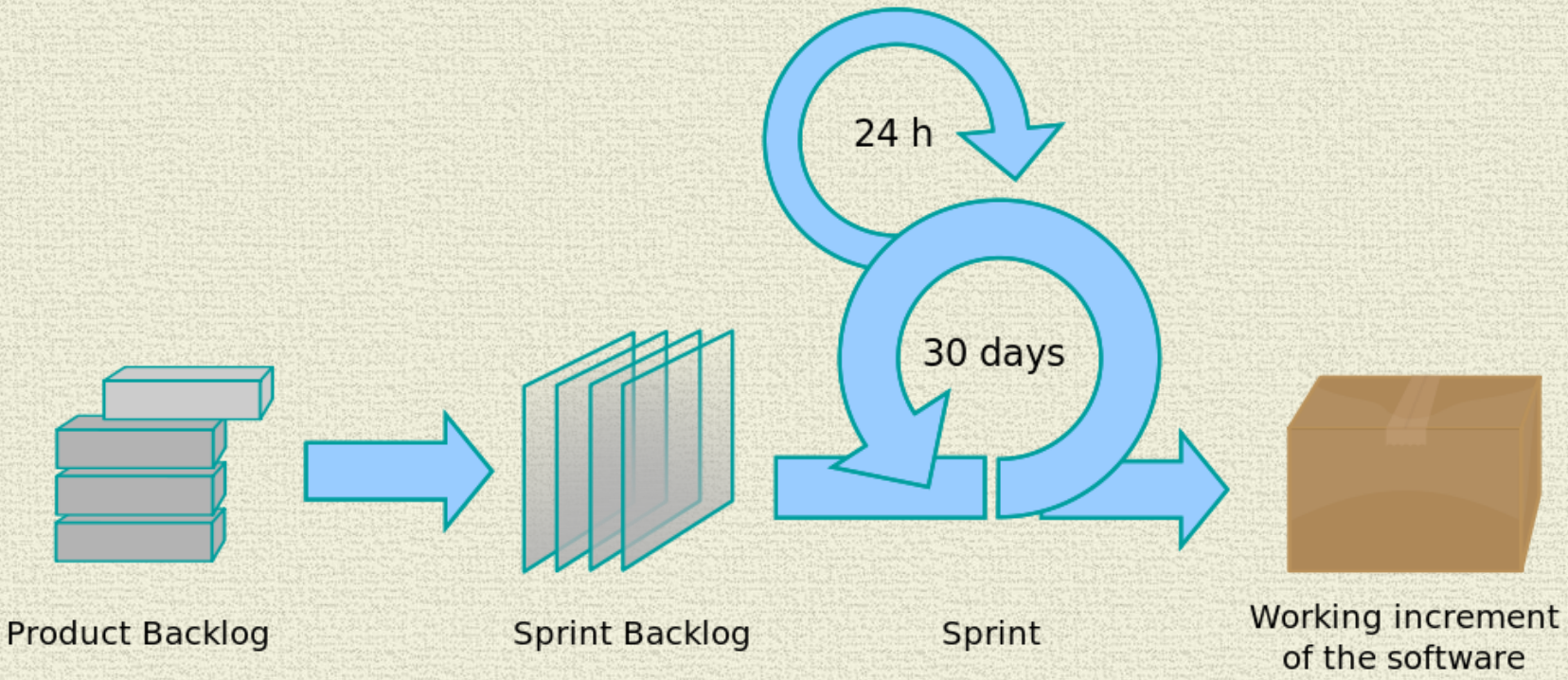
Extreme Programming

- Programming in pairs
- Extensive code review, unit testing of all code,
- Flat management structure,
- Simplicity and clarity in code,
- Frequent communication with the customer and among programmers.
- Beneficial elements of traditional software engineering practices are taken to "extreme" levels.
- EXAMPLE: Code reviews taken to the extreme, is reviewed *continuously*, i.e. the practice of Pair programming

SCRUM Process

- Development team works as a unit to reach a common goal
- Team self-organizes by encouraging physical co-location
- Daily face-to-face communication among all team members and disciplines in the project.
- **MAIN DRIVER:**
- Problems cannot be fully understood or defined
- Focus instead on maximizing the team's ability to deliver quickly and respond to emerging requirements.

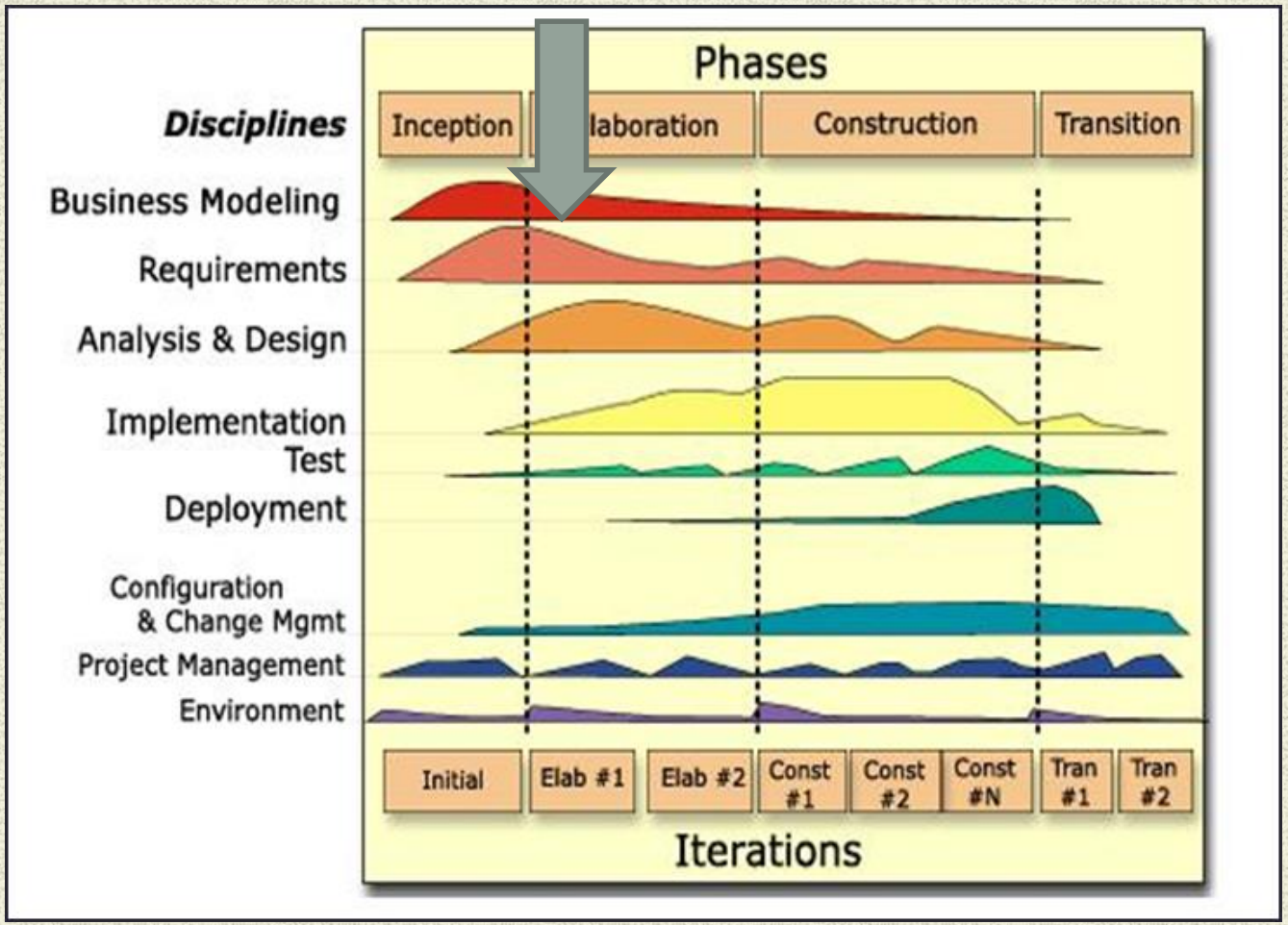
SCRUM Process



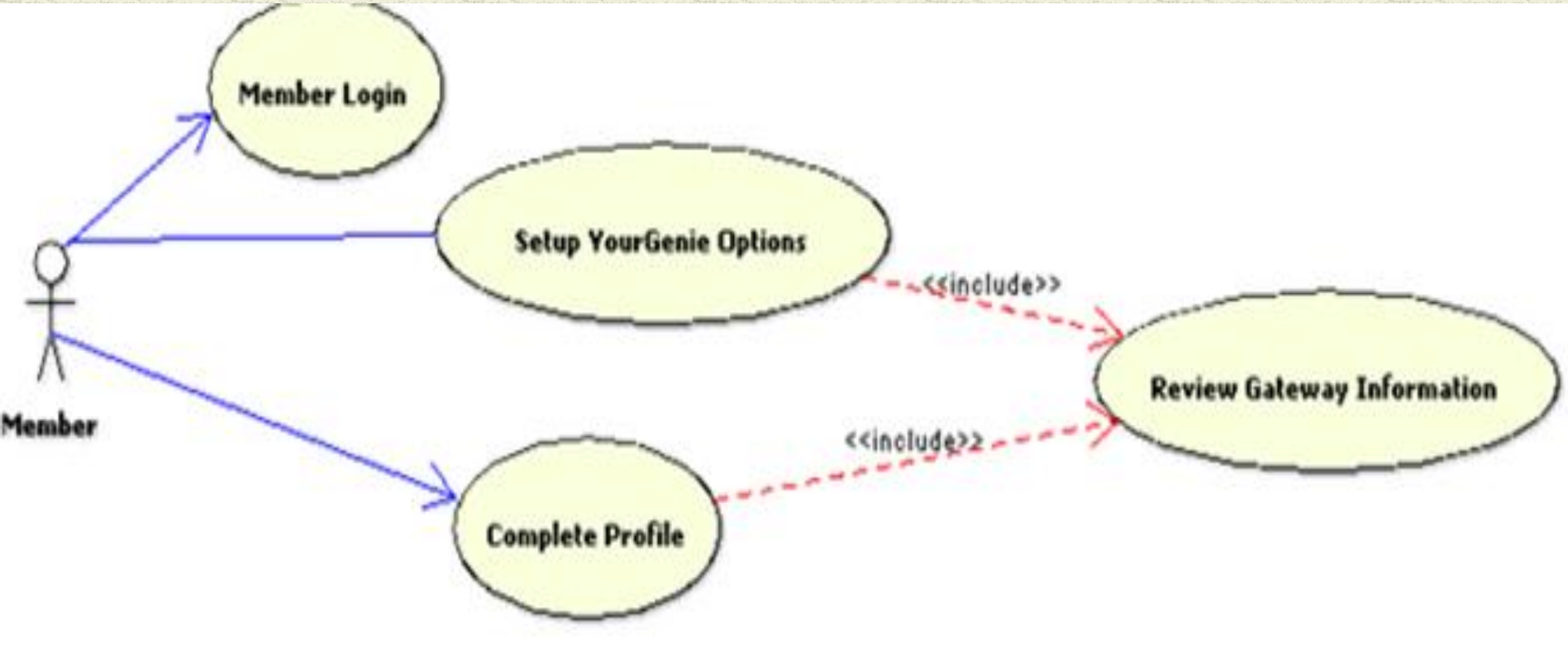
Continuous Integration

- Merge of all developer working copies with a shared mainline several times a day.
- Part of extreme programming(XP), which did advocate multiple integrations a day, perhaps as many as tens a day. The main aim of CI is to prevent integration problems
- Intended to be used in combination with automated unit tests written through the practices of test-driven development
- Build servers automatically run unit tests periodically or even after every commit and report the results to the developers

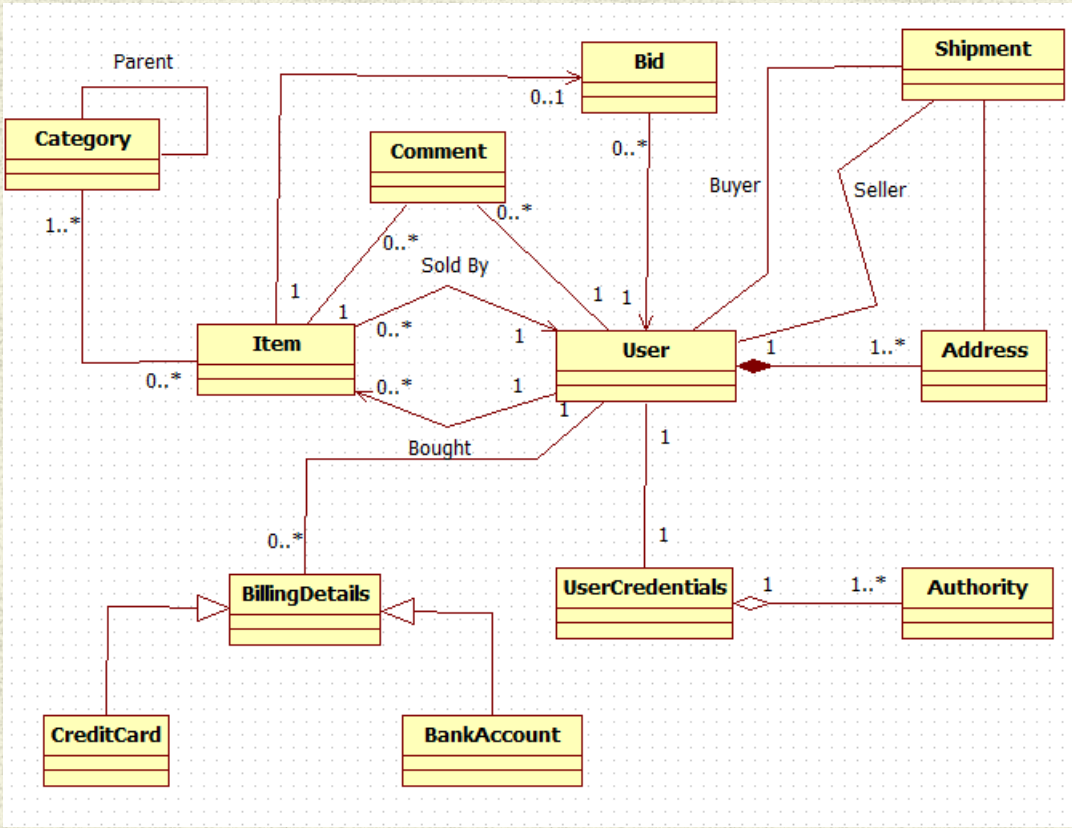
RUP Based Approach



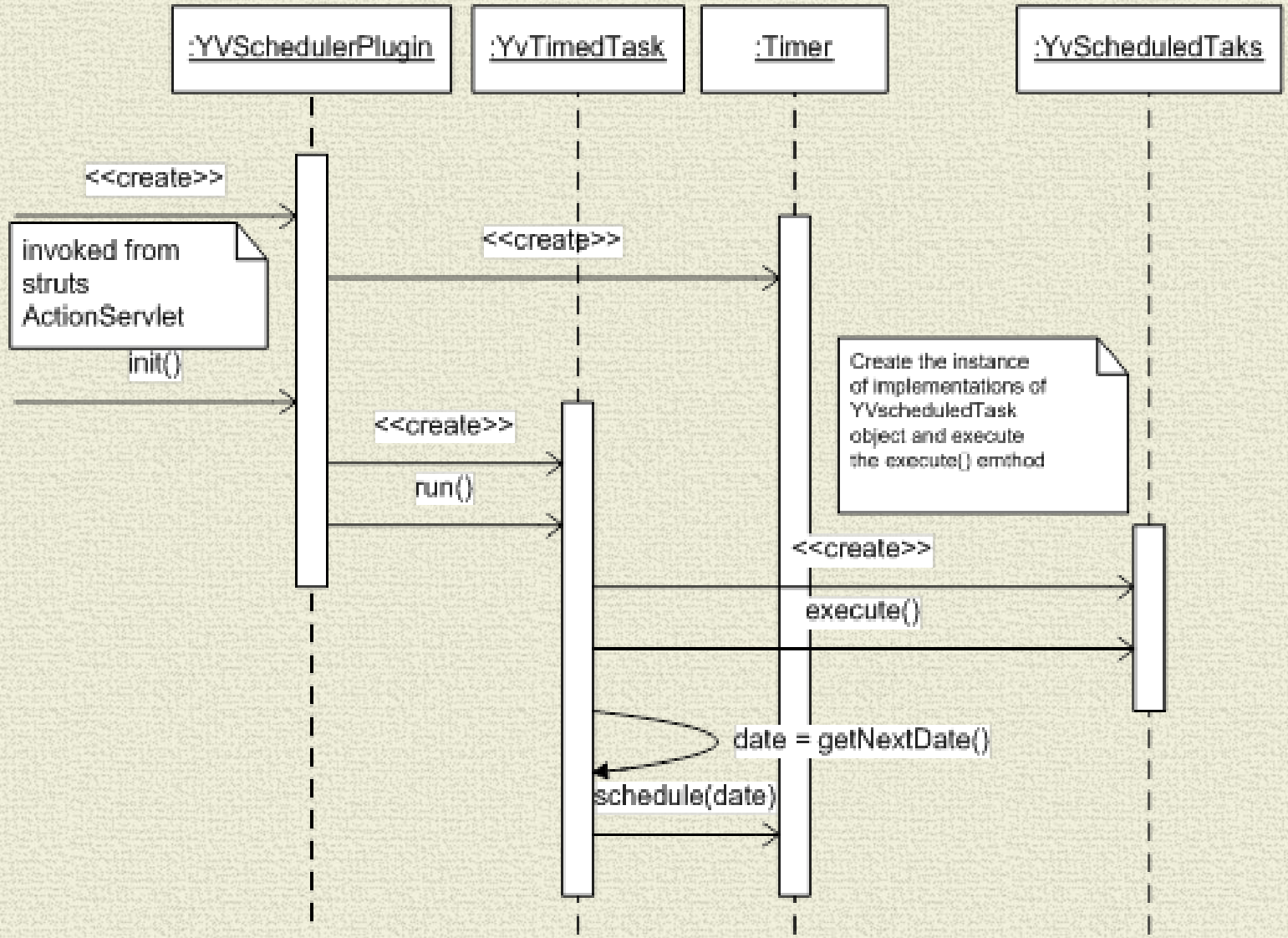
Use Cases


Member Login
Setup YourGenie Options
<<include>>
Review Gateway Information
Member
<<include>>
Complete Profile

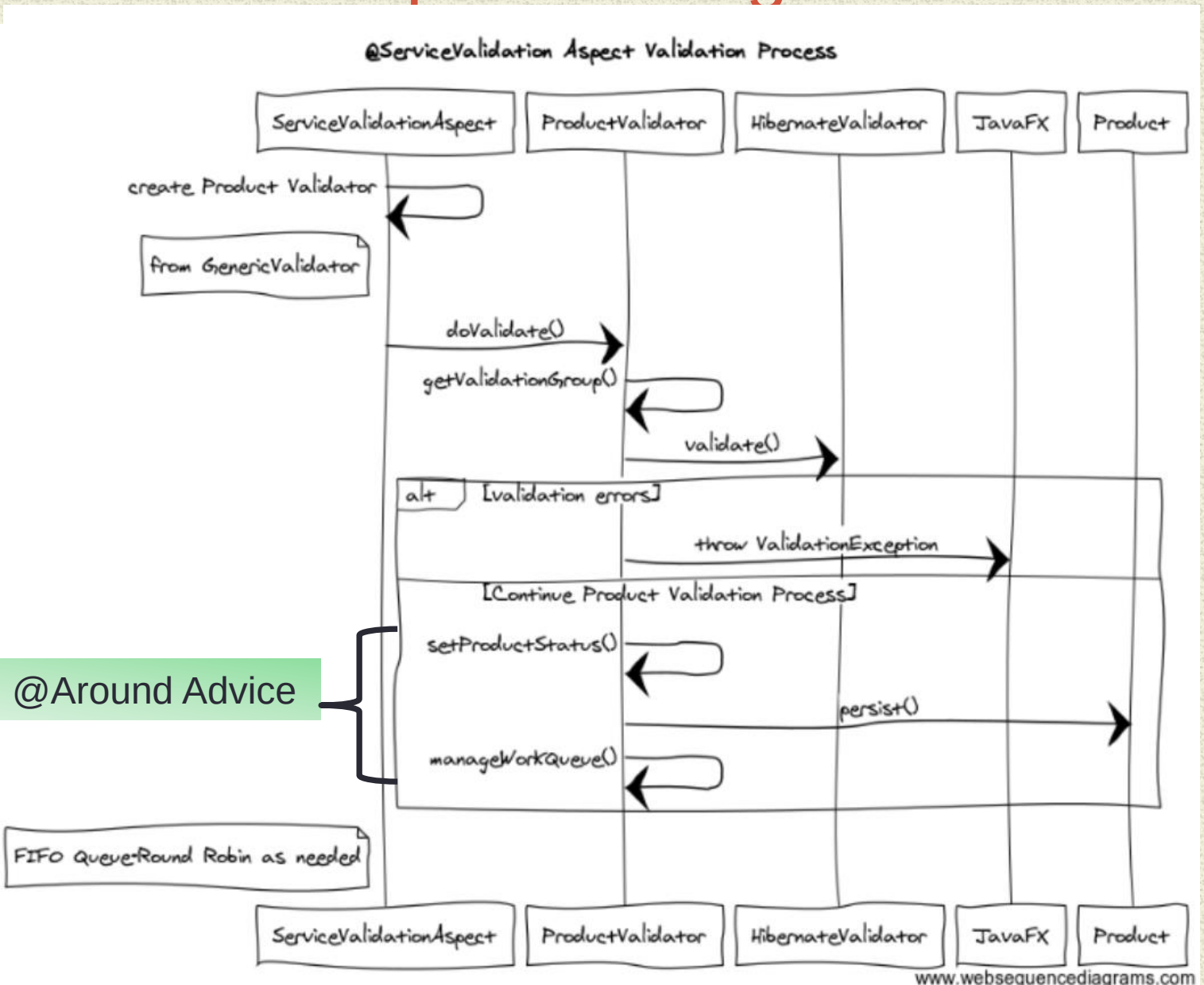
Domain Model



Sequence Diagram



Sequence Diagram



This is @Around Advice

Main Point

- A good design reflects re-usability and adaptability and most importantly traceability of requirements. A good design promotes stability and flexibility in a business application. *The Field of Pure Creative Intelligence is characterized by the qualities of stability and flexibility*
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Main Point

- A good development process has core ingredients use-case driven, iterative, emphasis on testing. Development processes represent the structuring laws that guide successful development of large software systems.
- *Life unfolds according to the structuring Laws of Nature which are enlivened by Transcendental Consciousness.*