Unified Software Process (USP)

- Complement to UML
- Rational Unified Process (RUP)
- IBM owns Rational now
- No OMG involvement

Key Elements

- "Use-case driven
- Architecture centric
- Iterative and incremental"

Use-Case Driven

- A *use case* is a sequence of actors & actions (object?)
- The set of use cases form the *use case model*
- They serve as a user-centered functional specification
- They drive the development process
- They are developed in tandem with system architecture

Architecture-Centric

- Highest level of system design
- Includes different views, including static and dynamic views
- Can include the platform, framework (reusable resources), deployment and non-functional requirements
- May describe use-case independent components (mandated by platform)
- Key use cases generate components/classes
- Refined as use cases are refined

Iterative and Incremental

- *Iteration:* subproject (process); *increment:* partial system (product)

- Each iteration is based on a set of use cases; risk mitigation

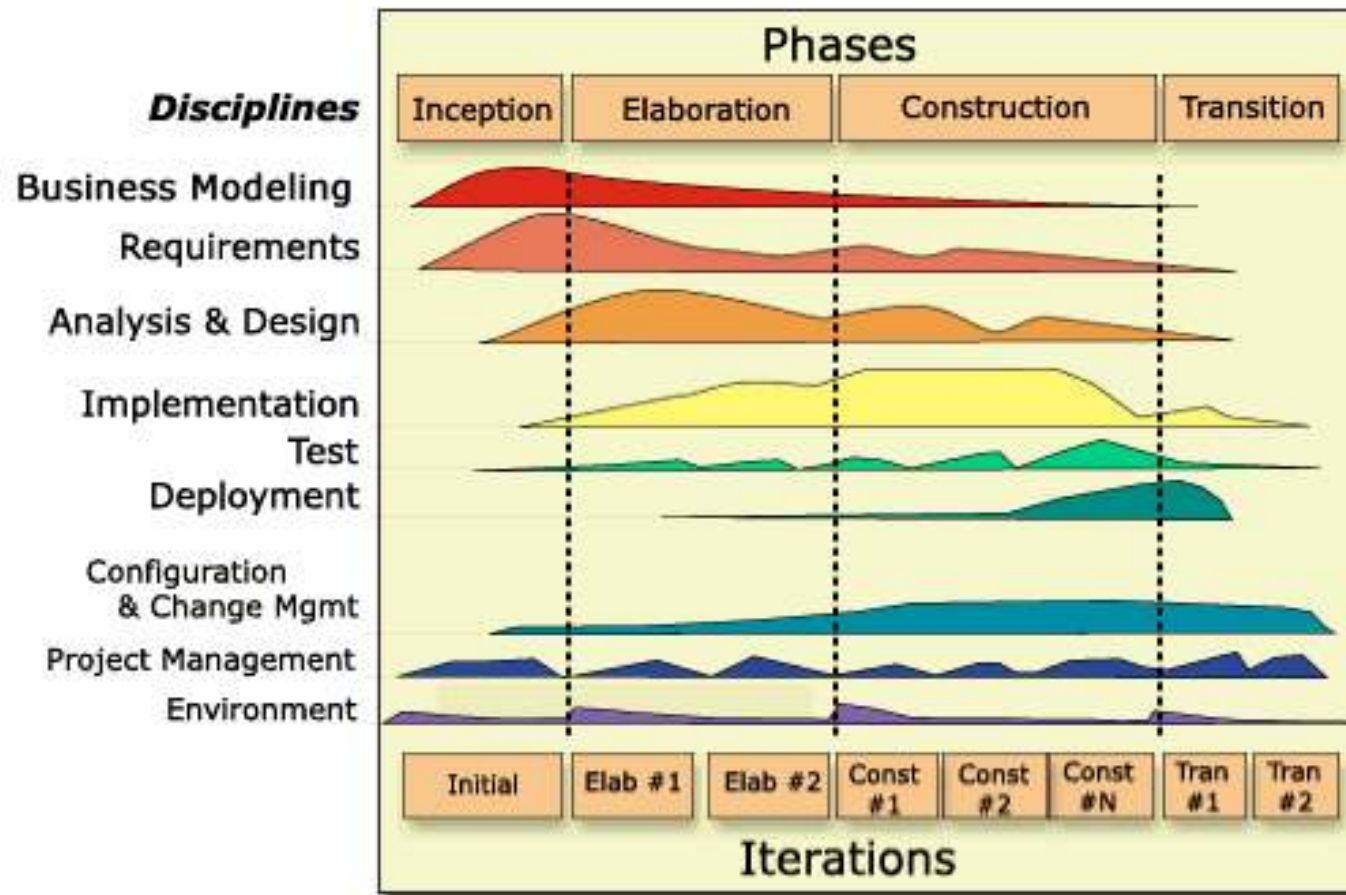- May be refinements (improvements) or additive (additional functionality)

Vocabulary

- *Project* = <cycle>*

- *Cycle* = <phase>$^{1..4}$

  – Each cycle releases a version of the project

- *Phase* = <iteration>*

  – Terminates in a milestone

- Phase = inception | elaboration | construction | transition

Phases

- *Inception*
  - Conception, vision, business case, risk analysis, initial project planning, vague use cases and architecture
- *Elaboration*
  - Use cases and architecture refined; modeling, selection of key use cases; refined plan
- *Construction*
  - Development
- *Transition*
  - Beta release, minor revisions, user training,

Process Organization

(http://www-128.ibm.com/developerworks/rational/library/feb05/krebs/)

Work Products

- Requirements
- Use cases
- Nonfunctional specification
- Test cases
- Source code
- Manuals

- Architecture (UML)
- Visual models (UML)
  - Analysis
  - Design (static and dynamic)
  - Implementation (packages)
  - Deployment (machines and processes)