

# Hitch-hikers Guide for Software Process

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## E-type System

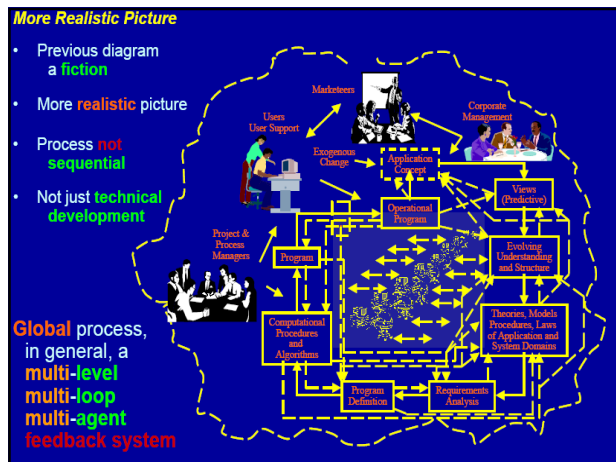
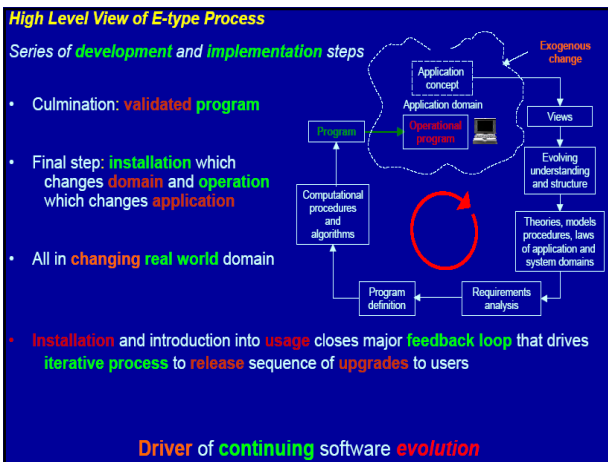
Program is a model of a specification that also has an operational domain as a model.

Real world is the ultimate operational domain of E-type systems.

The world is **unbounded**, at least in its properties. Operational domain of an E-type system is a sub-domain of the world.

This operational domain also **unbounded** in its properties.

**Application** is equally **unbounded** in its properties. System is **finite**. E-type system is a **finite model** of a **finite specification** of two **unbounded domains**.



## DON'T PANIC!

Douglas Adams  
Hitch-Hikers Guide to the Galaxy



## Panta Rhei

- Time changes all things: there is no reason why language should escape this universal law.

- Ferdinand de Saussure

Language = Process

## How can we?

Grasp whole picture of software process evolution?

Describe it qualitatively or quantitatively?

- conceptualization process
- development process
- maintenance process
- use process
- evolution process

## Discipline?

- Linguistics is not a science of discipline  
Ferdinand de Saussure
- How about software engineering?
  - Toward discipline: CMM
  - Descriptive approach: Process Programming
  - Cognitive approach: Activity Theory

## Aspects of Software Labor

- Material vs Immaterial
- Repetitive vs Creative
- Factory vs Atelier
- Production vs Design

## Disciplinary Approach

- Macroscopic view
- Only effective for Repetitive, factory type material labor process
- Management view for control
- Similarity with Neo-Confucian philosophy
- Focus on quantitative measure
- Often de-motivate engineers

## Descriptive Approach

- Microscopic view
- Useful for fixed sub-processes (eg. downstream part of development)
- Not applicable for immaterial, creative sub-processes (upstream part of development)
- Useful for presenting technical know-how

## Cognitive Approach

- Necessary to understand the variety of software process
- Need for wide perception of immaterial and affective nature of software development and usage
- Focus on qualitative view rather than quantitative view on the target process

## Process Evolution

- Only species evolve, not individuals.
- We need to have categorized survey of species of software and related process.
- "Should-be" process models are frozen sample of process species.
- Important key factors will be found in ever-changing "As-is" processes,

## Reference

- M.M.Lehman's Web
  - <http://www.doc.ic.ac.uk/~mml/>
- Immaterial Labor
  - <http://www.generation-online.org/c/fcimmateriallabour3.htm>
- Activity Theory
  - <http://www.ics.uci.edu/~redmiles/activity/final-issue.html>