SSE SYSTEM PROJECT

Tool and Data Interoperability in the SSE System

Chuck Shotton
PRC
11/10/88

TOOL AND DATA INTEROPERABILITY IN THE SSE SYSTEM

Overview

- Industry Problems with Program and Data Interoperability
- SSE System Interoperability Issues
- SSE Solutions to Tool and Data Interoperability
- Attaining Heterogeneous Tool/Data Interoperability

Carnegie Mellon University
Software Engineering Institute

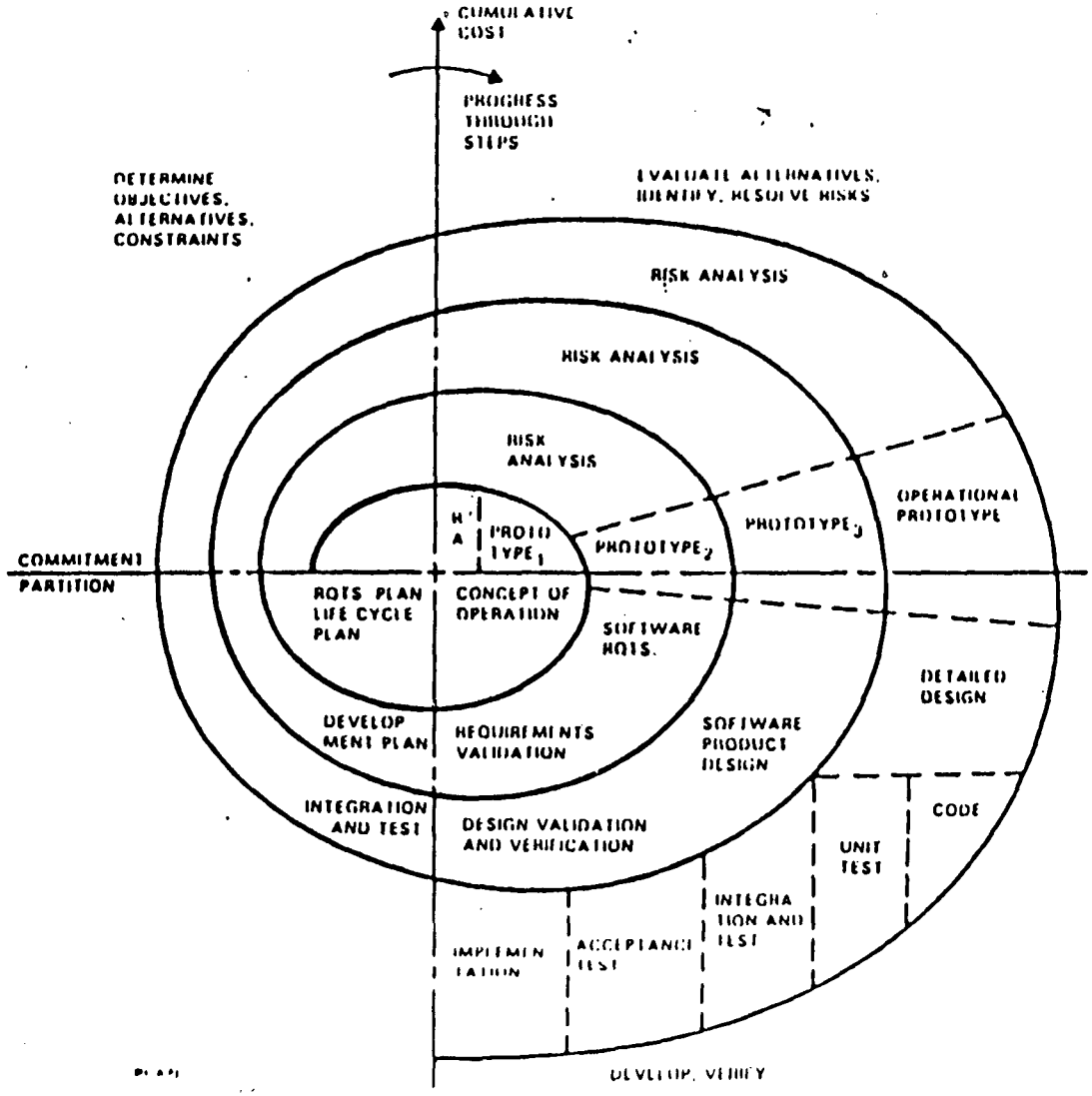
Software Development Methods

- Representations
- Deriving the representations
- Examining the representations

Goals

- Maintain separation of methods from tools supporting the methods
- Point of view of methods and tool users, not tool-builders
- Separate classification from evaluation
- Repository for information
- Determine "gaps" in methods and tools

SPIRAL MODEL OF SOFTWARE PROCESS



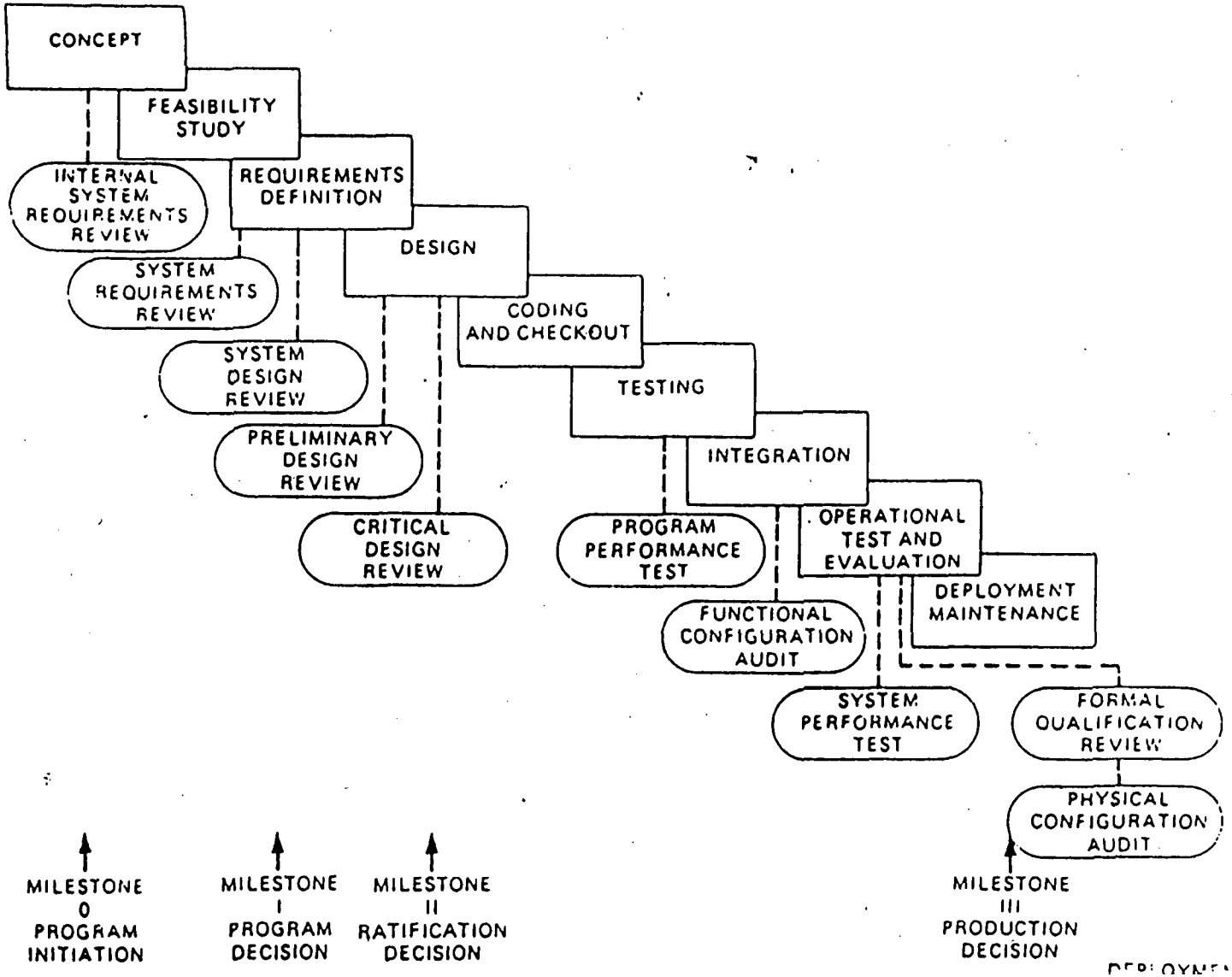
Maturity Level / Key Issues

Level	Characteristic	Key Problem Areas	Result
Optimizing	Improvement fed back into process	Automation	Productivity & Quality
Managed	(quantitative) Measured process	Changing technology Problem analysis Problem prevention	
Defined	(qualitative) Process independent of individuals	Process measurement Process analysis Quantitative quality plans	
Repeatable	(intuitive) Process dependent on individuals	Training Technical practices • reviews, testing Process focus • standards, process groups	
Initial	(ad hoc / chaotic)	Project management Project planning Configuration management Software quality assurance	Risk

Process Definition

- A sequence of life cycle tasks, which when properly executed produces the desired result
- An effective process must consider
  - the relationships of all the required tasks
  - the tools and methods used
  - the skills, training, motivation, and management of the people involved

Waterfall



Carnegie Mellon University
Software Engineering Institute

Strategy

Promote the evolution of software engineering from an ad hoc, labor-intensive activity to a managed, technology-supported discipline

Implementation of Strategy

- Put process under management control
  - define
  - measure
  - optimize
- Adopt appropriate methods
- Insert technology that provides automated support for the process and methods
- Collect automated tools into an integrated environment
- Educate people

CASE

Components

- Process
- Methods
- Computers
- Tools
- Support environments
- Engineers

Currently the engineers are the essential integrating factors tying all these components together

The engineers today empower the tools
versus
the tools empowering the engineers