Software Project Management

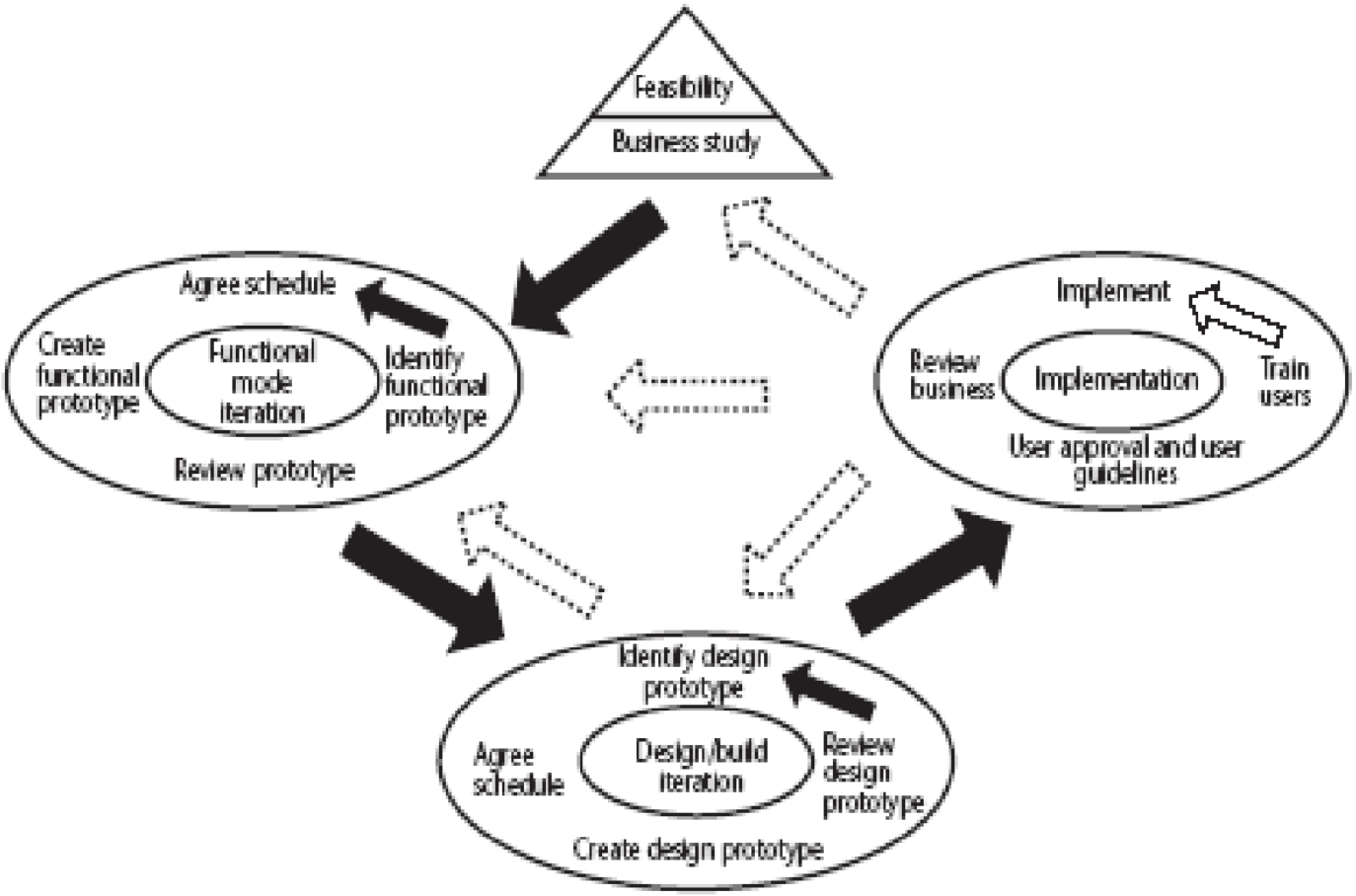
Lecture 12

DSDM Framework

Topics Covered

- DSDM Framework
- Extreme Programming
- Grady Booch’s Concern
- Macro and Micro processes

DSDM framework



DSDM *process model*

DSDM : time-boxing

- *time-box* fixed deadline by which *something* has to be delivered
- typically two to six weeks
- MOSCOW priorities
  - Must have - essential
  - Should have - very important, but system could operate without
  - Could have
  - Want - but probably won't get!

Extreme programming

- increments of one to three weeks
  - customer can suggest improvement at any point
- argued that distinction between design and building of software are artificial
- code to be developed to meet current needs only
- frequent re-factoring to keep code structured

Extreme programming - contd

- developers work in pairs
- test cases and expected results devised before software design
- after testing of increment, test cases added to a consolidated set of test cases

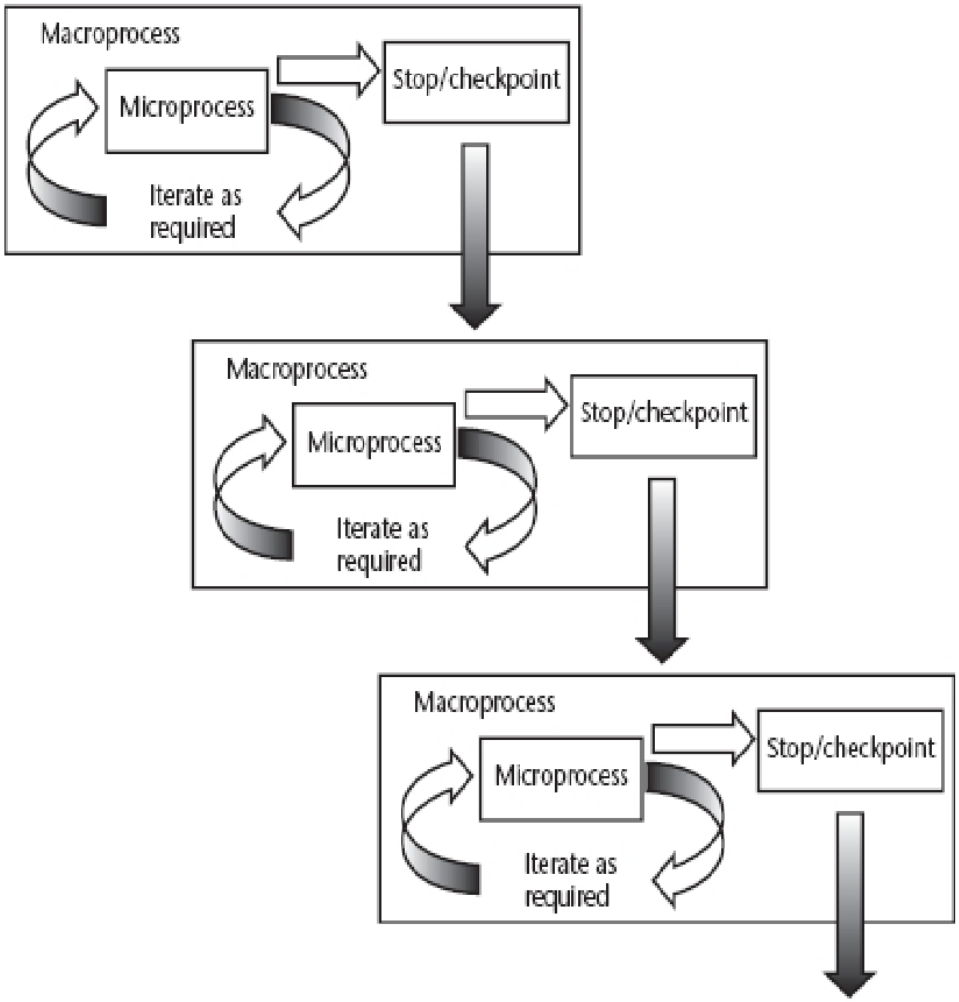
Grady Booch's concern

Booch, an OO authority, is concerned that with requirements driven projects:

'Conceptual integrity sometimes suffers because this is little motivation to deal with scalability, extensibility, portability, or reusability beyond what any vague requirement might imply'

Tendency towards a large number of discrete functions with little common infrastructure?

Macro and micro processes



A macro process containing three iterative micro processes

‘rules of thumb’ about approach to be used

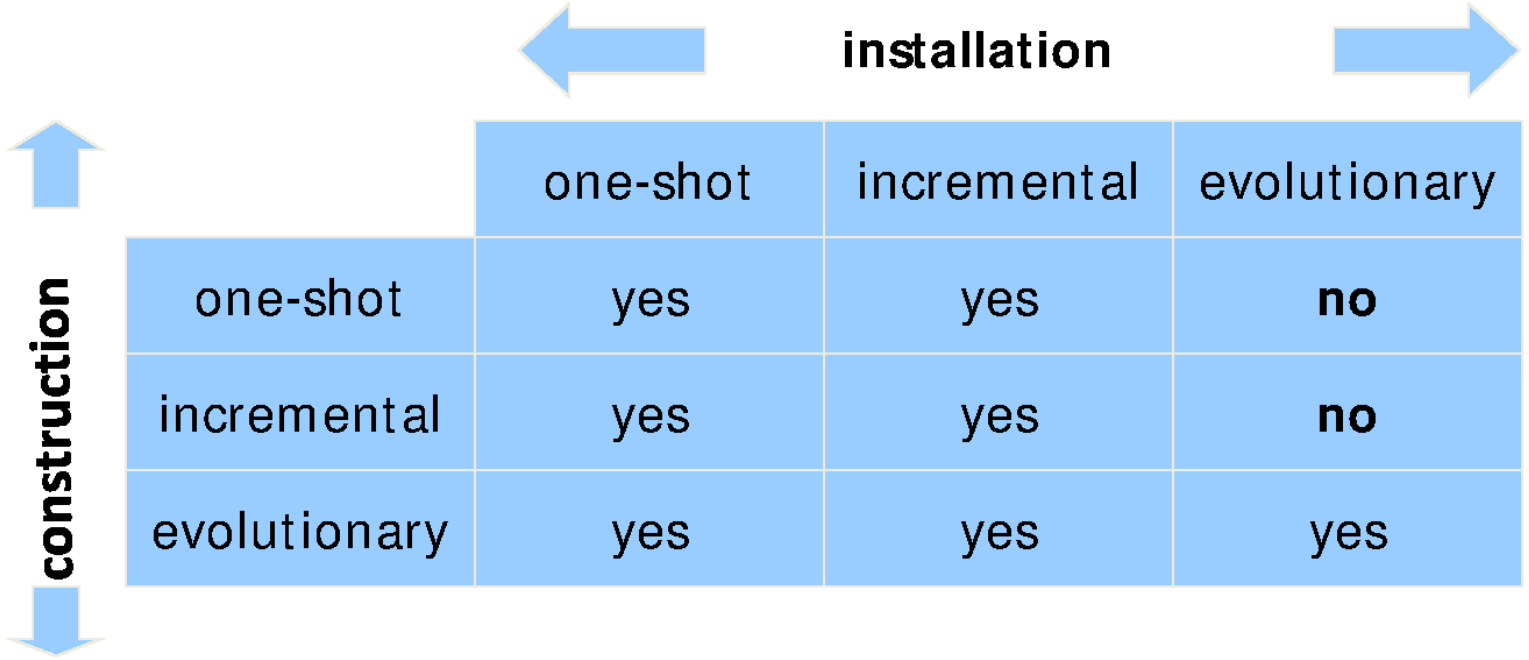
IF uncertainty is high
THEN use evolutionary approach

IF complexity is high but uncertainty is not
THEN use incremental approach

IF uncertainty and complexity both low
THEN use one-shot

IF schedule is tight
THEN use evolutionary or incremental

Combinations of approach



	one-shot	incremental	evolutionary
one-shot	yes	yes	**no**
incremental	yes	yes	**no**
evolutionary	yes	yes	yes

one-shot or incremental installation - any construction approach possible

evolutionary installation implies evolutionary construction

Applications

- The Rational Unified Process is a method that probably has the most in common with DSDM in that it is also a dynamic form of Information System Development. Again the iterative approach is used in this development method.
- Like XP and RUP there are many other development methods that show similarities to DSDM, but DSDM does distinguish itself from these methods in a number of ways. First there is the fact that it provides a tool and technique independent framework. This allows users to fill in the specific steps of the process with their own techniques and software aids of choice. Another unique feature is the fact that the variables in the development are not time/resources, but the requirements. This approach ensures the main goals of DSDM, namely to stay within the deadline and the budget. And last there is the strong focus on communication between and the involvement of all the stakeholders in the system. Although this is addressed in other methods, DSDM strongly believes in commitment to the project to ensure a successful outcome.

Research

- **Integrated Research Approach**

  Two key factors led to the selection of the DSDM research approach. First, diaphragm seismic response is the result of a complex interaction of system behavior (the overall structure), component behavior (the floor diaphragms), section behavior (diaphragm panels and joints), and local behavior (individual reinforcement details). Secondly, research to date has had to estimate diaphragm response almost entirely through analytical simulation, and in turn, these simulations were based on sparse test data of reinforcing details under highly idealized loading.
- Research Link:

  http://nees.ucsd.edu/projects/2008-pci/pubs/Fleischman_Naito_Restrepo_Sause_Ghosh_Wan_Schoettler_Cao_PCI.pdf