Initial Operational Capability

CSE 403, Spring 2003
Software Engineering

http://www.cs.washington.edu/education/courses/403/03sp/

Readings and References

- ## References
  - » *Anchoring the Software Process*, Barry Boehm, USC, 1995
    - http://citeseer.nj.nec.com/boehm95anchoring.html
  - » *Balancing Discipline and Flexibility with the Spiral Model and MBASE (Model-Based Architecting and Software Engineering)*, Boehm and Port
    - http://www.stsc.hill.af.mil/crosstalk/2001/12/index.html
  - » *Unified Process for EDUcation*, Rational Software Corporation and École Polytechnique de Montréal
    - http://www.yoopeedoo.com/upedu/index.htm
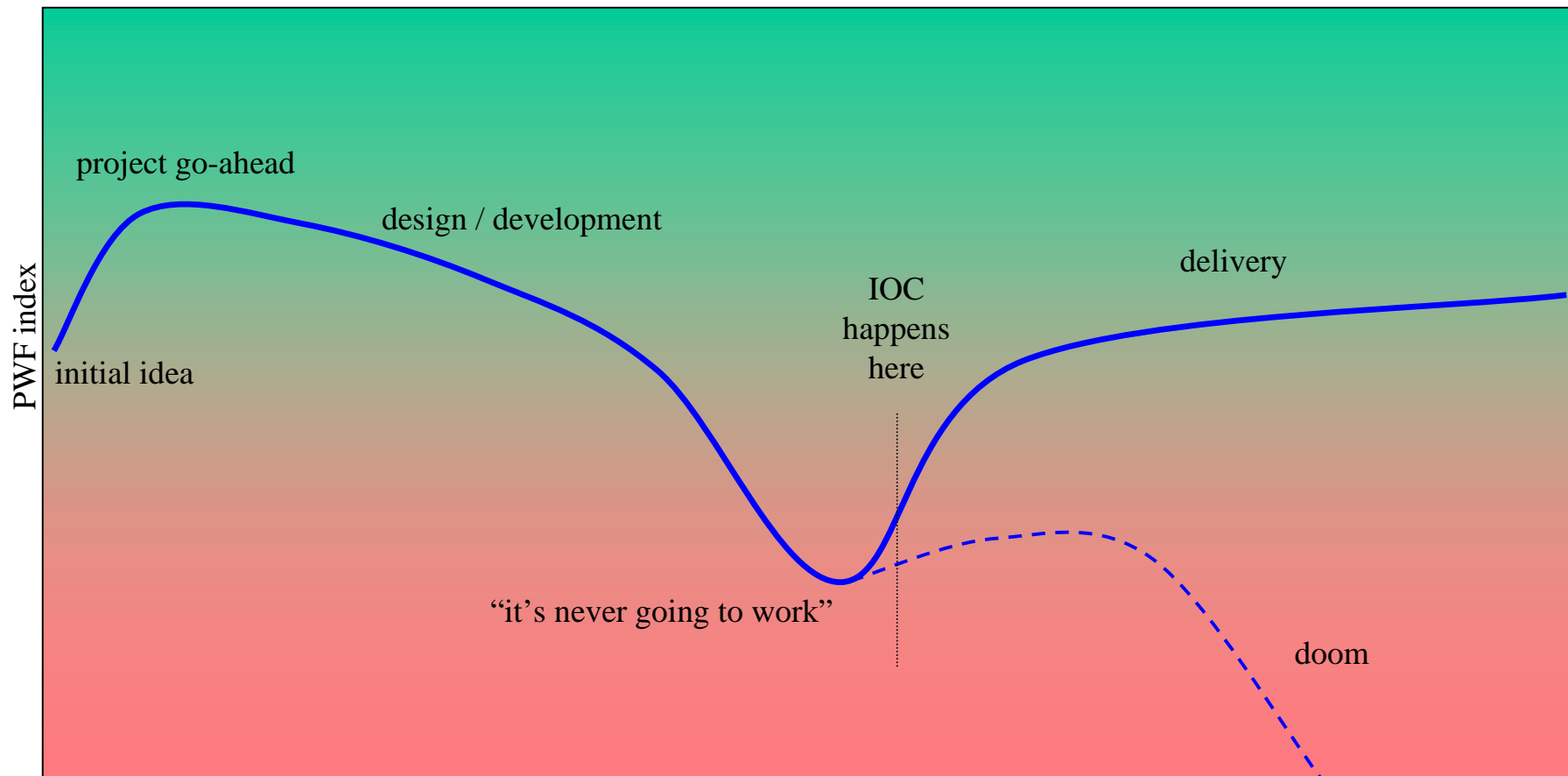
Reality Begins to Intrude

- Reality is real life, not a television script
  - » The specifications hand waving is over
  - » The fun part of design / development is complete
  - » The product doesn't do everything that you thought it was going to be able to do
    - "Warning: system will not make you young, sexy, rich."
- Real users are banging on the door, trying to:
  - » get in - to use the product ASAP
  - » get out - before they have to use this new system

Project stages ...

- Enthusiasm
- Disillusionment
- Panic
- Search for the guilty
- Punishment of the innocent
- Praise and honors for the non-participants

- System development is a social activity!

Project Warm and Fuzzies

PWF index

project go-ahead

initial idea

design / development

"it's never going to work"

IOC
happens
here

delivery

doom

A good IOC can make a tremendous difference

Risk Reduction

- There is risk in any project of real interest
- The line of doom is a real possibility
- Good engineering means that we make disciplined, informed choices that help reduce the risk at every stage
  - » Look ahead, think of the problems, avoid them
  - » The difference between success and failure is the reception given to the system by its users
  - » Don't let simple details derail your system launch

Elements of IOC Milestone

- ## Software preparation

  - » All software and data packages in place?

  - » Readiness testing complete?

- ## Site preparation

  - » Facilities, equipment, supplies, vendor support

- ## User, operator, maintainer preparation

  - » selection, team building, training

Software Preparation

- All software in place?
  - » Operational software - the point of the exercise
    - packaged and ready to deploy to real live user systems
  - » Support software - admin tools, COTS software, licenses, license administration, OS revision levels, application revision levels, database tools, ...

- Readiness testing complete?
  - » The product works correctly
  - » The tools to manage the product work correctly

Site Preparation

- The deployment site is ready to handle the new system
    - » Specific systems have been designated, purchased, installed, integrated
    - » Identified hosts have disk space, exported partitions, network connections, user accounts, …
    - » Development tools are *not* installed on end-user systems

People Preparation

- The people at the deployment site are ready to handle the new system

  » The new work processes are well known and the various groups and managers know what to do

  » Who is going to schedule and do Tomcat restarts?

- Many players that you may not be aware of

  » Users, operators, maintainers, management

  » identify the people who will do the work

  » provide effective training in the new tasks

IOC Success Criteria

- Presentation of an implemented architecture in an operational system that has
    - » realized the operational concept
    - » implemented the initial operational requirements
    - » prepared a system operation and support plan
    - » prepared the initial sites in which system will be deployed for transition
    - » prepared the users, operators, and maintainers to assume their operational roles

from Boehm and Port

IOC defined by PEO STRI

- The first attainment of the system requirements capability of the system being acquired which is manned or operated by an adequately trained personnel. IOC should be event-driven and not tied to a specific future date.

- The Operational Requirements Document (ORD), System Requirements Document (Specification), and Test and Evaluation Master Plan (TEMP) define what actions, when complete, will constitute attainment of IOC. You should provide flexibility for these to be revised as the program is progressively defined and tradeoff studies are completed. The System Requirements Document should clearly specify the operational capability or level of performance necessary to declare IOC. If availability in a specific timeframe is important, specify an objective for IOC declaration.Describe the impact if this objective is not achieved and identify a window of acceptability, if appropriate. Often, time phasing may be impacted by considerations outside the control of the Project Office. The IOC date, in fact, is one of the primary drivers in determining Milestone III approval for release to Production, Deployment and Operational Support.

- Declaring Initial Operational Capabilities (IOC) -- The Project Manager decides when to declare IOC of the system based on meeting the contract performance requirements. The user must be sufficiently satisfied with system performance to concur in this decision. IOC declaration is meant to be event-driven and not schedule- driven.

US Army PROGRAM EXECUTIVE OFFICE for SIMULATION, TRAINING, & INSTRUMENTATION

IOC defined by UPEDU

- At the IOC Milestone, the product is ready to be handed over to the Transition Team. All functionality has been developed and all alpha testing (if any) has been completed. A user manual has been developed, and there is a description of the current release.

- Evaluation Criteria

  » Is this product release stable and mature enough to be deployed in the user community?

  » Are all the stakeholders ready for the transition into the user community?

  » Are actual resource expenditures vs planned still acceptable?

from Unified Process for EDUcation