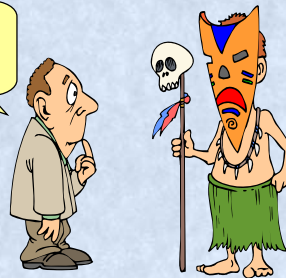




Risk-Based Configuration Control: Balancing Flexibility with Stability

Do you really think that's the answer to our SCM problems?



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the **Westfall**Team

Blatant Commercialism

The Westfall Team:

- ◆ Promotes the advancement of software excellence by helping our clients achieve effective & efficient software engineering, software quality & project management practices.
- ◆ Provides training & consulting services in software engineering, software quality & project management

**Open Enrollment Offering of our
Software Configuration Management Course
February 3-4, 2010 in Dallas (Plano) Texas**

the **Westfall**Team

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Presenter: Linda Westfall

More than 30 years in software:

- President of The Westfall Team
- Sr. Manager of Quality Metrics & Analysis, Manager of Production Software, software process engineer, software engineer & systems analyst

Active professionally:

- Past chair of the ASQ Software Division
- P.E. in software engineering – Texas
- ASQ Fellow, CSQE, CMQ/OE & CQA, ISTQB Certified Tester, ITIL Foundations
- Author: *The Certified Software Quality Engineer Handbook*

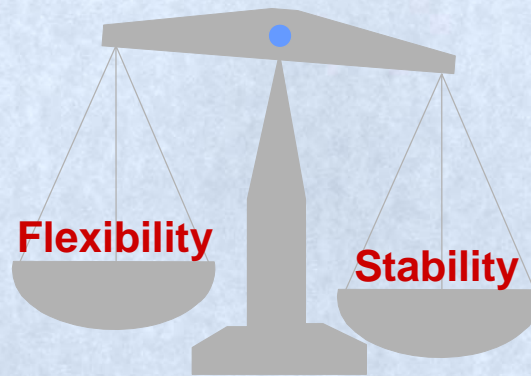


Configuration Management Defined

Configuration management is a discipline applying technical & administrative direction & surveillance to:

- Identify the functional & physical characteristics of a configuration item
- Control changes to those characteristics
- Record & report change processing & implementation status
- Verify compliance with specified requirements

SCM Maintains a Balance



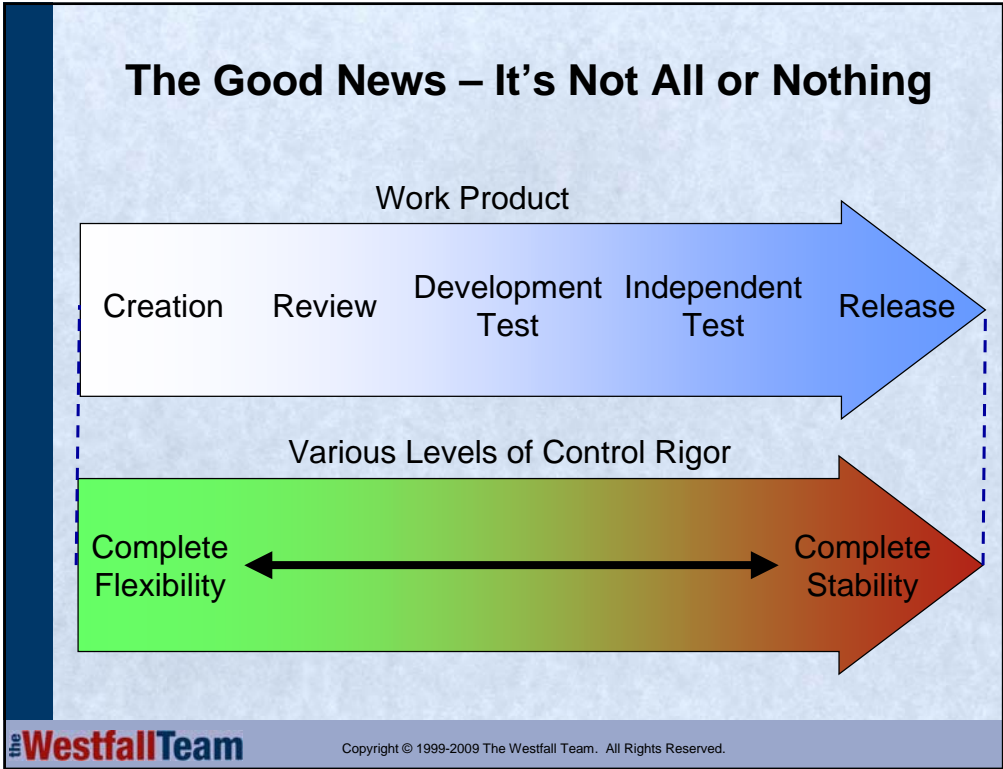
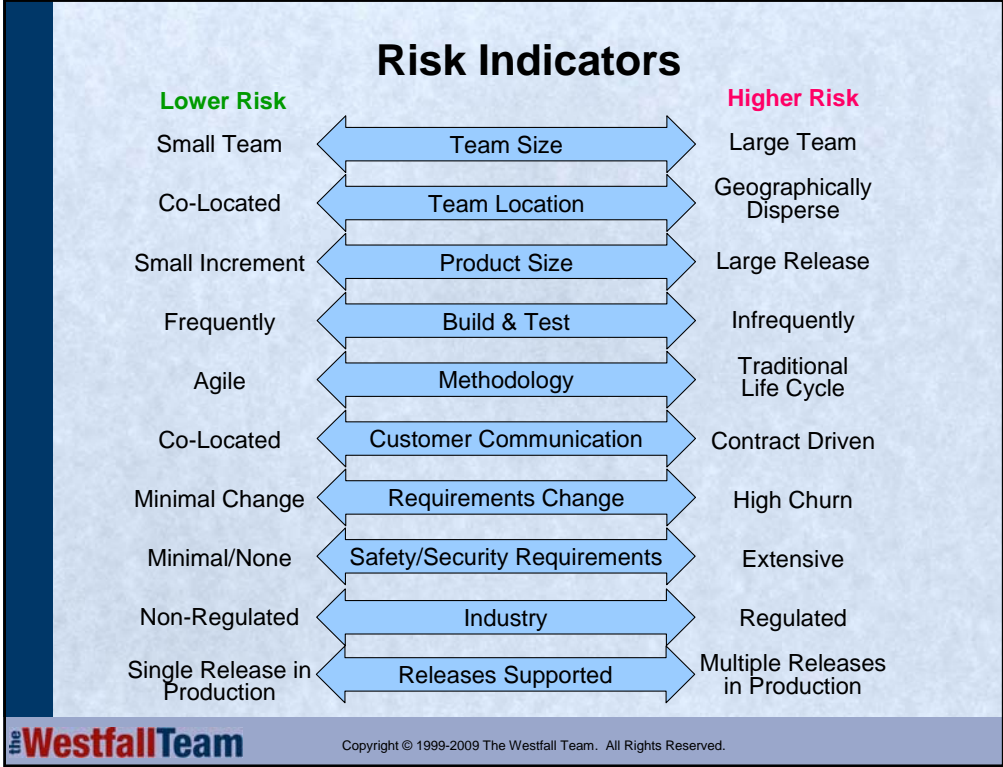
“Software configuration management is necessary to enable large teams to work together in a stable environment, yet still have the flexibility that’s needed to do creative work.”

Risk-Based Configuration Control

How much flexibility can we afford when it comes to controlling change to our software products and components?

How much stability do we need?

The answer to these, like many questions in software engineering, is that it depends on risk.

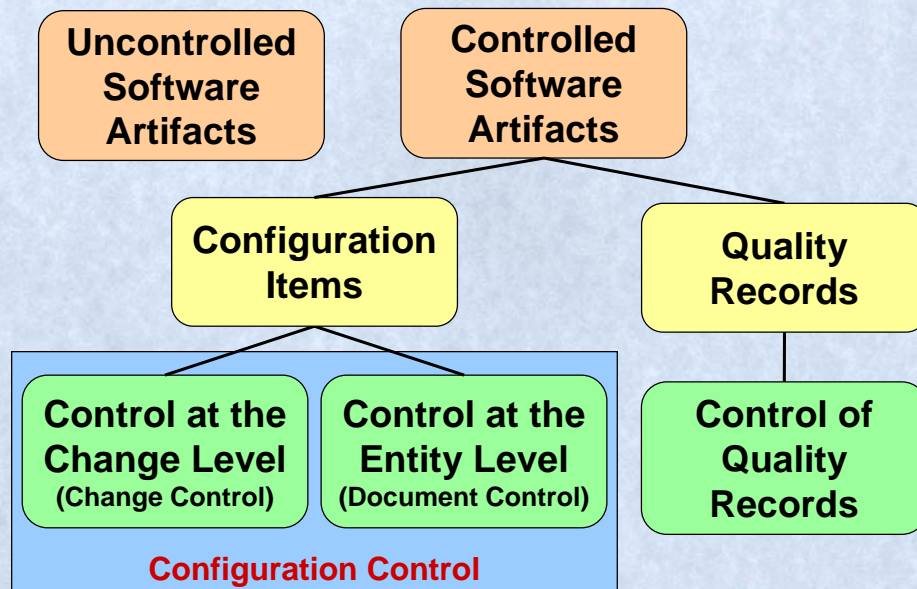


3 Techniques to Help Maintain the Balance

This presentation will discuss three techniques to help maintain the balance:

1. Selecting the appropriate type & level of control for each software artifact
2. Selecting the right acquisition point for each configuration item
3. Utilizing multiple-levels of formal control authority

1. Types & Levels of Control



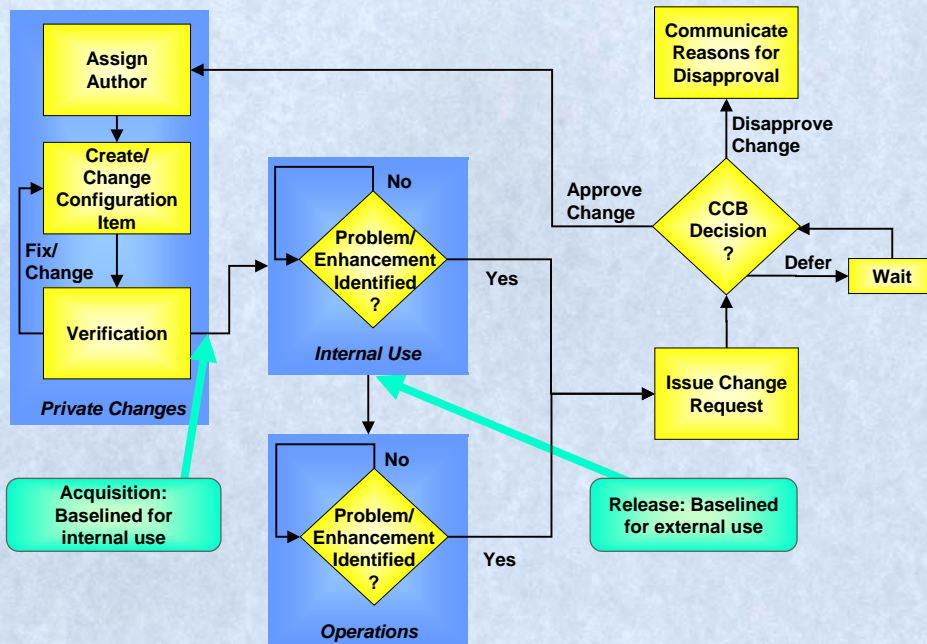
What Are Configuration Items?

Configuration item: A work product placed under configuration management & treated as a single entity.

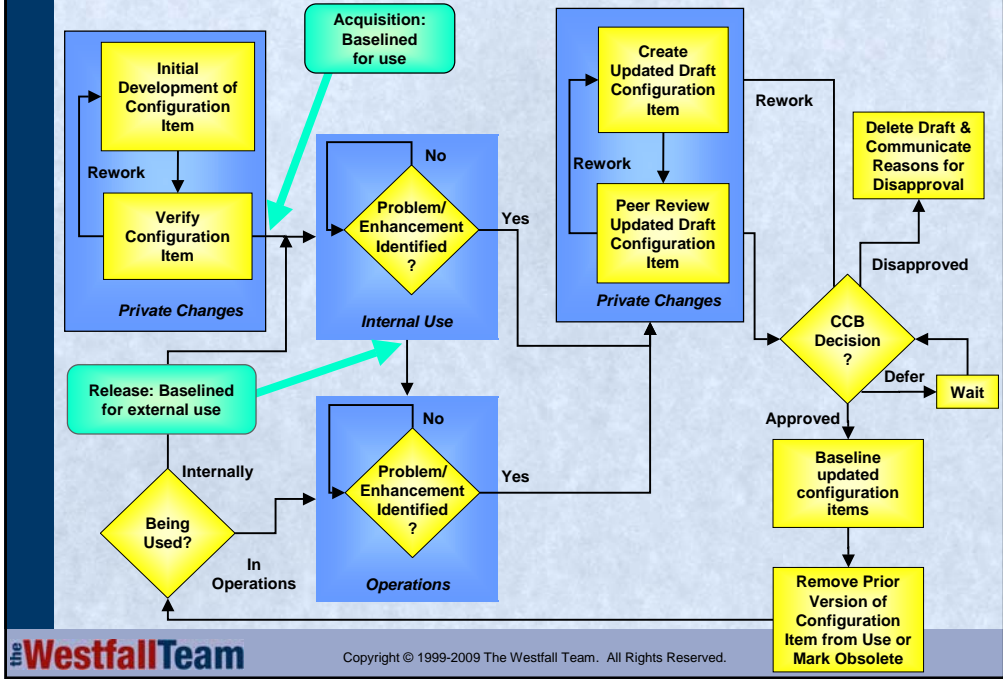
The following items should be placed under configuration management:

- Externally delivered software products & data
- Designated internal software work products & data
- Designated support tools used to create or support the software product
- Supplier/vendor supplied software
- Customer supplied software/equipment

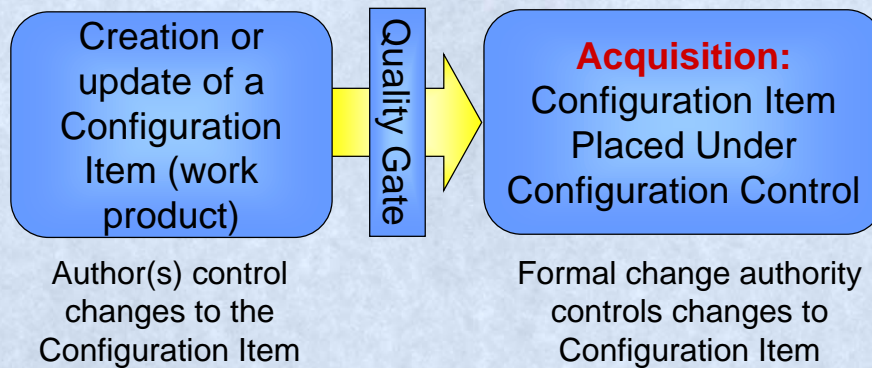
Change Control Process



Document Control Process



2. Configuration Item Acquisition Point



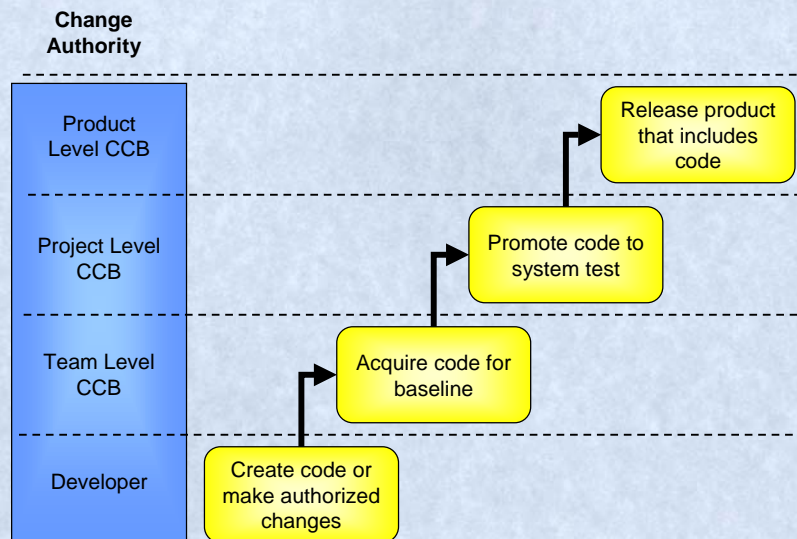
Quality Gate Examples

Examples of quality gates include the successful completion of:

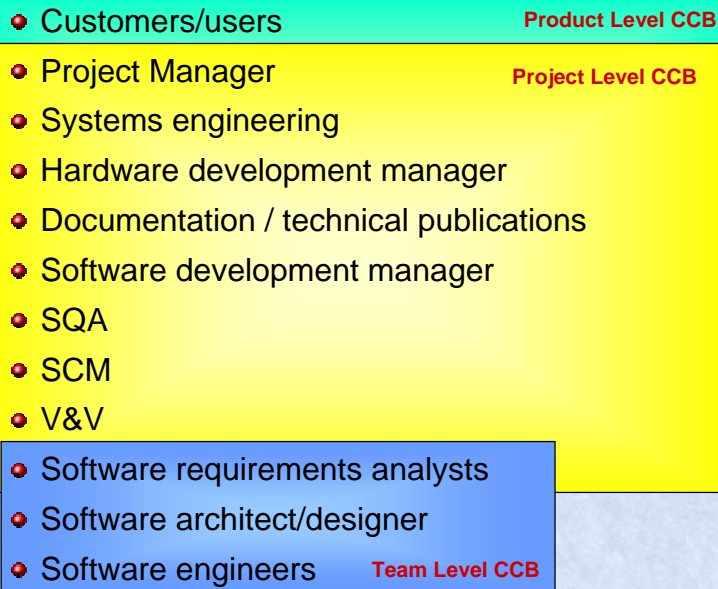
- A peer review (e.g., desk check, inspection, walkthrough)
- A test activity
- A project review (e.g., phase gate review, major milestone review)
- An independent product analysis or audit

3. Multiple-Levels of Change Authority

Code example:

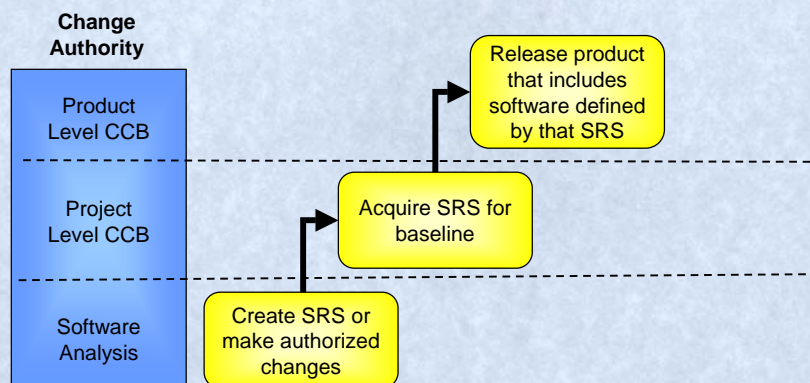


Membership of Multiple-Level CCB



Multiple-Levels of Change Authority (cont.)

Requirements example:



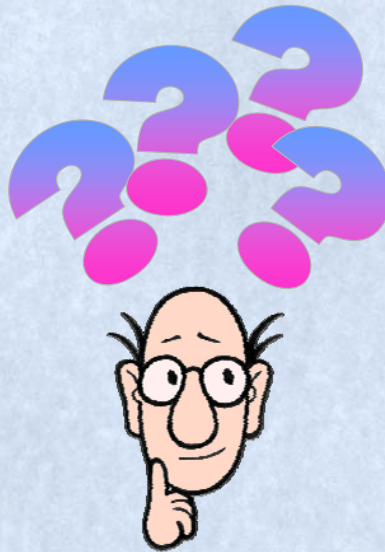
Conclusions

Software configuration control can use multiple techniques to maintain the appropriate balance between flexibility and stability.

- The level of rigor used for each of these techniques should be determined on a project-by-project (program-by-program) basis
- Depending on the results of a risk-based analysis of the software artifacts that will be produced by that project/program

One of the primary roles of the software configuration management plans for a project/program is to document and communicate these decisions.

Questions?



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