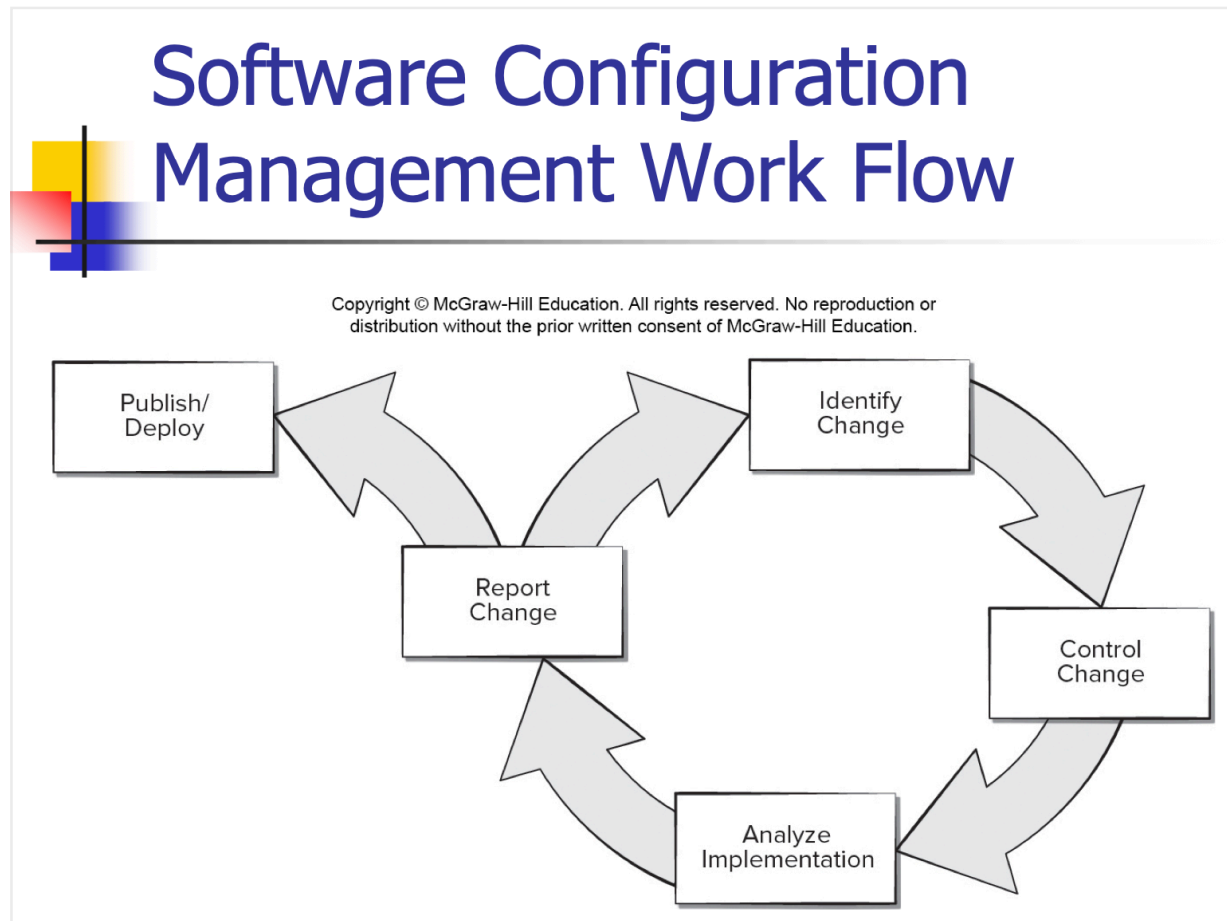# 15 Configuration Management

Software Configuration Management Work Flow

- – Component elements: set of tools coupled within a file management system that enables access to and management of each software configuration item
- – Process elements: a collection of procedures and tasks that define an effective approach to change management
- – Construction elements: automate the construction of software by ensuring that the proper set of validated components have been assembled
- – Human elements: Features used by the software team to implement effective SCM

Baselines: A specification or product that has been formally reviewed and agreed upon, that thereafter serves as the basis for further development, and that can be changed only through formal change control procedures.

Management of Dependencies and changes:
Developers must establish discipline when checking items in and out of the SCM

repository

Impact management involves two complementary aspects:

1. Ensuring that developers employ strategies to minimize the impact of their colleagues' actions on their own work
2. Encouraging software developers to use practices that minimize the impact of their own work on that of their colleagues

SCM Repository: set of mechanisms and data structures that provides the following functions that allow a software team to manage change:
  - Data integrity
  - Information sharing
  - Tool integration
  - Data integration
  - Methodology enforcement
  - Document standardization

Change Management Objectives: Defines a series of tasks that have four primary objectives:

1. To identify all items that collectively define the software configuration.
2. To manage changes to one or more of these items.
3. To facilitate the construction of different versions of an application.
4. To ensure that software quality is maintained as the configuration evolves over time.

Impact Management:
  - A web of software work product interdependencies must be considered whenever change is made

Software configuration audit complements a technical review by asking and answering the questions.

Configuration status reporting (CSR):
Configuration status reporting is an SCM task that answers the following questions any time a change or audit occurs
Output from CSR may be placed in an online database or website so that software developers or support staff can access change information by keyword category

Version Control:
As apps and games evolve through a series of increments different versions may exist at the same time and version control process is required to avoid overwriting changes:
  - A central repository for the app or game project should be established

Each developer creates his own working folder
The clocks on all developer workstations should be synchronized.