

## Discussion-7 Challenges of implementing and maintaining an effective SCM

### Discussion Topic:

Please choose one of the following questions to discuss in your initial post:

- What are the key benefits of implementing an SCM process?
- What are some of the challenges of implementing and maintaining an effective SCM process?
- How can SCM be used to support the development and maintenance of complex software systems?

### My Post:

Hello Class,

For discussion, I chose the “What are some of the challenges of implementing and maintaining an effective SCM process?” topic.

Software Configuration Management (SCM) is a process that supports the software life cycle by managing, organizing, and controlling all the different components of a software project, including code, documentation, etc. However, the implementation and maintenance of the SCM process come with challenges that range from organizing and allocating resources for the SCM implementation to trying to maintain SCM within a complex and changing codebase while ensuring clear communication across teams.

These challenges can be categorized into two main areas: SCM implementation challenges and SCM maintenance challenges. For easier visualization, I organized these challenges within two tables corresponding to the two SCM challenge categories previously defined, as shown in Table 1 and Table 2.

**Table 1**

*SCM Implementation Challenges*

Challenge	Description
<b>Organizing &amp; Integration</b>	SCM needs to be implemented within an infrastructure in an un-destructive and organized fashion. This infrastructure may include components such as third-party systems and hardware, and be adaptable to changes in external interfaces.
<b>Constraints</b>	SCM must consider and integrate the business's existing policies, rules, and other constraints specific to the business.
<b>Planning</b>	SCM needs to follow a planning process that establishes and manages clear responsibilities, resources, and tools.

*Note:* The table lists the different SCM implementation challenges. Information from several (CSU Global, 2025; Keeling, 2017).

**Table 2**

*SCM Maintenance Challenges*

Challenge	Description
<b>SCM Workflow Management</b>	Applying a change management process that evaluates all changes by a Change Control Board (CCB).

<b>Architectural Descriptions Changes</b>	<p>Architecture continuously changes with new techniques and methods. This poses a documentation challenge as the organization adopts these new architectural techniques and methods.</p> <p>Additionally, organizations often rely on tribal knowledge of their architecture based on initial project knowledge, oral tradition, and informal sketches. This makes sharing and modifying documentation difficult.</p> <p>Furthermore, it is challenging to know when it is appropriate to transition from this informal “tribal” documentation method to more shareable “communal” or “formal” documentation methods, which are more efficient.</p>
<b>Design Communicating</b>	<p>Communicating the “why” of the design decisions can be challenging. Such as including a recorded explanation/description of rejected options (the “paths not taken”) to inform future designers about the architectural design intent.</p>

*Note:* The table lists the different SCM maintenance challenges. Information from several sources (CSU Global, 2025; Keeling, 2017).

To ensure that the SCM process is efficient, it is essential to understand and address the SCM implementation and maintenance challenges listed in Table 1 and Table 2.

-Alex

#### References:

CSU Global (2025). *Module 7: Packaging the Solution – Technical Presentation* [Interactive Lecture]. Canvas. [https://csuglobal.instructure.com/courses/110425/pages/module-7-overview?module\\_item\\_id=5733394](https://csuglobal.instructure.com/courses/110425/pages/module-7-overview?module_item_id=5733394)

Keeling, M. (2017). Chapter 11: Describe the Architecture. *Design it! From programmer to software architect*. Pragmatic Bookshelf. ISBN-13: 978-1-680-50209-1