Software Engineering

Assignment 1

Configuration Management

Bryan Yang

Table of Contents

[Prompt 1 – Define Configuration Management 3](#_Toc111020766)

[Prompt 2 – Identify the Four Configuration Component Activities 3](#_Toc111020767)

[Prompt 3 – Explain Five Possible Setbacks 5](#_Toc111020768)

[References: 7](#_Toc111020769)

## Prompt 1 – Define Configuration Management

Configuration management is one of the components of the project management. It defines management changes to product configuration. Configuration management plans define all the configuration items, needed configuration changes, and configuration processes that aid management of the changes (Arvindan, 2020). A configuration could include the functional or physical specifications of a product or service. For a software service, the configuration could include the user interface display colors, the shape of the buttons and diameter of the circular pictures. A configuration management plan helps to track all software and compatibility between versions of the product or service to easily identify the new modifications or upgrades (Arvindan, 2020). Same could be apply to the hardware product such as computer, steel flask or etc. By defining a configuration management plan, product or service managers can document and audit all the future changes made to the products and services (Arvindan, 2020). This will ensure quality assurance and control internally before the product is shipped or launched to a customer or client by matching the proper version from the client request.

## Prompt 2 – Identify the Four Configuration Component Activities

We could break up the configuration component activities into many pieces. However, we can identify the main configuration component activities into four different groups.

First, requirements specification. This activity ultimately dictates what the client needs and wants (Adesida, 2020). This activity identifies the problems or issue of the new system or software is meant to do or solve. This also helps the configuration manager to identify the operational capabilities and desired performance characteristics (Adesida, 2020). After all these factors are identified, the manager can grasp better idea how much and what resources are needed to support its operation and maintenance.

Second, design and implementation. This activity ultimately dictates how to meet the needs and wants of the client or customer because it involves new or previous designs from previously built software or system into the design of the new system or software (Adesida, 2020). This also involves the component base analysis by gathering all the data on reusable components to improve the productivity of the new component-based system or software. After the design activity is completed, the product or service can be developed and integrated into the current product or service as a new revision or version. This process builds the new system or software based on the design specifications and basis. The building process follows the design of integration process in mind where the integration points are identified and described with the reusable components.

Third, validation. This activity ultimately dictates if the system or software (product or service) has met client’s needs and wants. This activity has a set of activities to ensure and provide the confidence that the new version of the software or system can accomplish the specifications from the first activity. If this activity has been done correctly the intended use, goals, and objectives are met.

Fourth and last, evolution. This activity ultimately dictates the adaptation to changes in clients needs and wants. In a sense, all the four activities are iterative and circular in nature. This activity re-purpose the requirements of the reusable components and client specifications on the new software or system from any new changes based on the client feedback.

## Prompt 3 – Explain Five Possible Setbacks

A company could face if they don’t develop effective configuration management policies and processes.

There are countless possible setbacks if a company do not develop effective and thought-out configuration management policies and processes in place. However, we can narrow down to five main possible setbacks.

First, ineffective quality management process. If the configuration management is not effective, the process of the quality management will be greatly affected due to the lack of configuration management system and process in general (GeeksforGeeks, 2020). This will be greatly exacerbated bigger the organization.

Second, lack of legacy within the company (GeeksforGeeks, 2020). If an employee leaves due to personal, termination, or retirement, protecting the investments in the software or system and the ability to reproduce the build with the correct components or continue development of a project becomes very difficult if not impossible with lack of an effective configuration management.

Third, faulty service or product delivery. If the configuration management is not effective as it should be, there is a high probability that a wrong version of the system or software may be delivered to the client or customer (GeeksforGeeks, 2020). Even worse case may be that the software or system version’s source code is lost from the system because it was stores in a team member’s local drive.

Fourth, ineffective cost management. If the configuration management is not in par with the organization’s requirements, controlling the costs and labor effort involved becomes very costly for any kind of changes (GeeksforGeeks, 2020). This slows the growth of a company or possibly reverse the growth of the company.

Fifth and the last, faulty changes to new versions of software or system (GeeksforGeeks, 2020). If the configuration management is not effective as it should be for the organization or company, new versions of software or system cannot be created effectively as the new changes are being made. Engineers and developers will have harder time tracking of the changes to the software or system (GeeksforGeeks, 2020). This waste the time of the engineers or developers where they could have spent time on actually developing the product rather than trying to understand which configuration the product is in.

## References:

GeeksforGeeks. (2018, May 11). *Software Engineering | System configuration management*. <https://www.geeksforgeeks.org/software-engineering-system-configuration-management/>

S. Arvindan*.* (2020). Study.Com. *Software Engineering | System configuration management*. <https://study.com/academy/lesson/configuration-management-control-items-procedures.html>

*O*. Adesida (2020). Study.Com. *Software Engineering | System configuration management*. <https://study.com/academy/lesson/integration-configuration-model-definition-purpose.html>