COLLABORATIVE BUILDING

Selecting and trusting on existing software pieces

PERSPECTIVES

BUSINESS

Decrease of the potential errors

TECHNICAL

Focus in new functionality

Software reuse: a collaborative activity

"Software reuse is commonly defined as a process to systematically **specify, produce, classify, retrieve and adapt** software artifacts for the purpose of using them in a development process".

The Magic Ring

Software artifact: a social entity

AWARENESS

ENGAGEMENT

Well-documented and tested

Look for an Application Programming Interface (API) that fulfills our needs

MOTIVATION

Focus only on the required functionality

REFLECTION

Self-awareness and dynamic adaptation

SELF-SYNCHRONIZATION

Keep the principle "doing the right thing right"

MEDIATION

Overcome the impedance mismatch problem.

PARTICIPATION

The whole is other than the sum of the parts

COUPLING

Degree of interdependence between software modules

COHESION

Degree of intradependence within a software module, to which the elements of a module belong together

Software reuse through the Formal Pillars

ABSTRACTION

How are we going to represent the functionality of a software piece?

NOTE:
It refers to the management of the intellectual complexity of a software piece.

SELECTION

How can we select software? Quality characteristics: accountability, agility, assurance, financial, performance, security and privacy, usability and any other quality factor (see the Service Measurement Index).

NOTE:
It is necessary to represent, store and provide a retrieval mechanism based on the metadata of the software piece.

INTEGRATION

1) Is the software piece built on standards?

2) How much effort we have to do to integrate this software into a system in which it must collaborate and communicate with other parts?

NOTE:
It is the process of bringing together all pieces into one system ensuring that everything works.

Maximize the reusability factor!

Types of approaches for software reuse

Software product lines

"A software product line (SPL) is a set of software-intensive systems that share a common, managed set of features satisfying the specific needs of a particular market segment or mission and that are developed from a common set of core assets in a prescribed way."

Source: SEI http://www.sei.cmu.edu/productlines/

Interoperability-based reuse

Specifications that allow conforming independent software and product lifecycle tools to integrate their data and workflows in support of end-to-end lifecycle processes.

Source: Open Services for Lifecycle Collaboration http://open-services.net/resources/tutorials/oslc-primer/what-is-oslc/

Do you know how to make existing software work for you?

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