

The Software Configuration Management Checkup and Improvement Framework

Summary

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Software development has evolved considerably since its beginning in the middle of the 20th century. This is, for the most part, the consequence of technological innovations and also the new management techniques introduced. Many companies, building hardware or providing services, have evolved toward the integration of software development in their daily work. Their little knowledge in the domain is not without creating problems. Software Configuration Management (SCM), supposed to bring different solutions, is not mastered by these companies because they do not realize the way it could help them.

The purpose of this study is to highlight the problems these companies face in the software development workflows, to list the different underlying problems SCM can solve and relate the two lists. The resulting framework is destined to organizations developing software with little knowledge in SCM.

The framework has been built around a set of interviews conducted in various companies spread between France and Sweden. These interviewees, when not SCM expert, mainly helped the creation of the surface problems' list called software development symptoms in this work. SCM expert and literature were more focussed on the underlying problems called root causes or problems in this work.

The outcome of the study is a three part framework:

- A list of software development symptoms easily understandable by companies without any knowledge in SCM. To use the framework, companies have to select the symptoms they encounter and want to solve from this list.
- A list of problems solvable by SCM. These problems are often largely documented but regrouped for the first time in a common document.
- A list of mappings between symptoms and problems. Once symptoms and problems were gathered the key element of the study was to relate them. Mappings link the two groups, describe and motivate the different choices made.

The framework, its construction and different lists are explained in details in the full report. The interaction required by the mappings between symptoms and problems lead to a product difficult to use on paper. To overcome this limitation and facilitate its usage, a website has been created at www.cmcheckup.org. The website facilitate the improvement of the framework with the possibility for its users to share their knowledge.

By using the product companies will understand their real SCM problems hidden behind symptoms easily identifiable. With their problems unmasked the framework will reveal the path to the solutions they need to implement.