Abstract

Developing software is getting increasingly more important, but complex at the same time. Challenges arise for businesses to deal with this. Both science and IT companies are searching for ways of making the production process of software more efficient. Recent investments have been made by Microsoft regarding the software factories movement. This young movement is concerned with the automation of the software production process by enabling generation of software.

This thesis describes an attempt to evaluate the practical applicability of software factories within the software development department of Sogyo, a Dutch IT company. Specifically, the research identifies two major business challenges that Sogyo faces—the ability to deal with requirements that change during development and enabling structural reuse of software that has been created. This research aims at the assessment of the applicability of software factories for tackling those challenges by subsequently:

▷ Considering a typical application, subject to both business problems and developed by Sogyo. First, this clarifies the business challenges by exemplification. Next, its analysis forms the basis for a re-implementation. Finally, it lays the foundation for a qualitative comparison between the methods;

▷ Creating a theoretical comparison framework to facilitate the comparison of the application implementations;

▷ Applying this framework to compare the traditional development of software to the software factory approach.

From the comparison, we establish that software factories are very well suited to tackle the structural reusability challenge of Sogyo, but they unfortunately contribute very negatively to the flexibility in dealing with changing requirements. Sogyo is thus advised to take on a sceptical attitude towards the current possibilities of software factories.

The main contributions of this research are (1) the practical demonstration of how software factories may be put to use, relating concepts to theory, (2) the construction of the comparison framework for the assessment of software products—not only this specific framework, but it may serve as a blueprint for the creation of such frameworks based on other business challenges, and (3) the recommendations for Sogyo.

Keywords: software factories, automation, domain-specific languages, software development, CRUD

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