

A Survey of Variability Management Requirements

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Business process management (BPM) is impacting medium and large scale enterprises enormously these days. Designed to support rigid and repetitive units of work like production processes, business process models offer little in the area of flexibility and reuseability [1, 3]. By introducing variability to the world of BPM, many new possibilities are introduced.

An example comes from eGovernment. In the Netherlands there are 430 municipalities that have to implement the same national laws, though, they are different in size, business models, IT infrastructures and so on. Recently the WMO law (Wet maatschappelijke ondersteuning, Social Support Act, 2007) was approved that mandates, for instance, the rules for providing publicly subsidized wheel chairs to needing citizens. All municipalities have to implement this process, each with slight but clearly noticeable differences related to their organizational and IT structure [5]. The recurrence of the need to adapt processes to instances and changes become concrete with the notion of *variability* [4], which first emerged in software engineering. Variability in this case refers to the possibility of changes in software products and models.

In [2], of which this text is an abstract, we propose to use variability in order to take full advantage of the obvious reusability opportunities in such situations. Variability in this context, namely that of BPM, indicates that parts of a business process remain variable, or not fully defined, in order to support different versions of the same process depending on the intended use or execution context. Such variability is often included through the introduction of so-called *variation points*, that is, elements of a business process where change may occur. A process in which variability is included is called a *reference* or *generic process*. Processes where choices have been made deriving from the reference process are called *variants*.

We introduce *variability management* as an extension of the typical activities involved in business process management. We give a general depiction in Figure 1. On the left, we notice how requirements drive the definition of the design processes. Variability management complements these general BPM phases by introducing a set of parallel stages, on the right in the figure. In this context, two main stages are introduced: *design-time* and *run-time* variability.

In [2], after defining variability in business process management, we consider the requirements for explicit variation handling for (service based) business process systems. eGovernment serves as an illustrative example of reuse. Finally, an

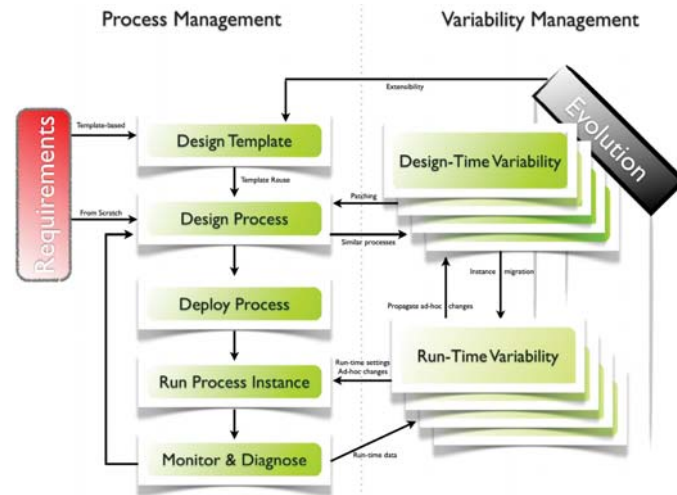


Fig. 1. Process lifecycle and variability management.

evaluation of existing tools for explicit variability management is provided with respect to the requirements identified. A video illustrating a first prototype to manage service-based business processes with explicit support for design time variability is available at <http://www.sas-leg.net/web/index.php?n=Main.Demo2010>.

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