Chapter 1
A Technology for Pattern-Based Process Design and its Application to Collaboration Engineering

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ABSTRACT

As many business processes are collaborative in nature, process leaders or process managers play a pivotal role designing collaboration processes for organization. To support the design task of creating a new collaborative business process, best practices or design patterns can be used as building blocks. For such purposes, a library of design patterns and guidelines would be useful, not only to capture the best practices for different activities in the process in a database, but to also offer the users of this database support in selecting and combining such patterns, and in creating the process design. This chapter describes the requirements for a tool for pattern based collaboration process design, specifically for design efforts following the Collaboration Engineering approach.

1. INTRODUCTION

With collaboration and team work becoming the organizational norm to innovate and create value (Frost & Sullivan, 2007), new business processes predominantly involve collaborative work practices. A work practice is a set of actions carried out repeatedly to accomplish a particular organizational task (Briggs, Kolfschoten, Vreede, & Dean, 2006). A task is said to be collaborative if its successful completion depends on joint effort among multiple individuals. Process design and deployment has
become the basis for most approaches to support change, improvement, and innovation in organizations. **Collaboration engineering** is an emerging approach to designing collaborative work practices for high value recurring tasks and deploying them to practitioners to execute for themselves without ongoing support from professional facilitators. Collaboration engineering researchers have distilled a number of collaboration principles, techniques and best practices, and codified them into a design pattern language (Briggs et al., 2006; Briggs, Vreede, & Nunamaker, 2003). This design pattern language provides Collaboration Engineers with reusable elements for designing collaborative work practices, and for specifying the technological capabilities a group will need to support its efforts. While such repositories of best practices support the design of collaborative work practices, this paper proposes a design for a technology to further support the design of collaborative work practices using a pattern language.

While new technologies can be a driver for changes of work practices, they often do not prescribe a new way of working, but rather offer the tools to support the new way. Workflow management (Aalst, Hofstede, & Kiepuszewski, 2003) approaches and business process engineering (Grover & Kettinger, 1995) methods offer an overview of tasks and processes, but do not provide the detailed ‘how to’ instructions to initiate and prescribe change. To change a collaborative work practice, groups need to be trained or require facilitation support (Briggs, 2006). The transition of new collaborative work practices is a complex task because a new work practice needs to be accepted and adopted by its users. A key requirement is the users’ willingness to change. Briggs describes a Value Frequency Model to explain the behavioral intention (willingness) to change a work practice (Briggs, 2006). In this model, the willingness to change is caused by an individual judgment of the value of change and the expected frequency in which this added value is experienced. Therefore, in order to transfer a new collaborative work practice, it needs to be designed in a way that offers its users a recurring added value.

The design of a new collaboration process poses several, sometimes conflicting, requirements: It needs to improve productivity of the organization, it needs to offer recurring value to the users, resources for the process are limited by definition, and the skills of process leaders might also present a limitation (Kolfschoten, Vreede, Briggs, & Sol, 2007). While many design approaches to collaboration support exist (Schwarz, 1994; Sheffield, 2004; Zigurs & Buckland, 1998), they merely offer a high level process structure, not the details on choices in tool configuration, combined with specific instructions. Research shows that such small configuration can have large impact on outcomes in group processes (Santanen & Vreede, 2004; Shepherd, Briggs, Reinig, Yen, & Nunamaker, 1996). To design new collaboration processes such that these requirements are met with some certainty, the designer can use best practices or design patterns – solutions that work and that can be combined to offer the prescription of an instrumental, predictable and transferable collaborative work practice (Coplien & Harrison, 2005; Schümmer & Lukosch, 2007). Design patterns are re-usable solutions to address frequently occurring problems. In Alexander’s words: “A pattern describes a problem which occurs over and over again and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice (Alexander, Ishikawa, Silverstein et al., 1977, p. x).”

A pattern language offers a designer or community of designers a library of best practices for a specific domain and product that can be used and combined to create solutions to problems in the organization. Furthermore it can support this community in providing a shared language, a coherent basis for their design and a way to document and transfer knowledge in this domain.