Chapter 8.10

Engineering the Coordination Requirements in Cross-Organizational ERP Projects: A Package of Good Practices

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ABSTRACT

There is yet little knowledge about cross-organizational Enterprise Resource Planning (ERP) implementation projects when it comes to determining requirements and achieving alignment between IT and businesses. Consequently, the requirements engineering (RE) processes are often more expensive and less effective as they could be. In this chapter, the authors view a cross-organization ERP implementation as a coordination problem, and introduce a coordination complexity model based on an organization’s level of participation in a business network. They show how the external coordination characteristics of an organization can be mapped to ERP-supported mechanisms for cross-organizational coordination. To incorporate this activity in the state-of-the-art ERP RE processes, the authors propose a set of good practices that counterpart certain coordination issues at different complexity levels. Their chapter is based on empirical data gathered from secondary sources. They also carried out an early validation assessment based on an online focus group composed of ERP solution architects.

INTRODUCTION

Conceptualizing the requirements and developing the architecture design of ERP applications, mostly takes place in an inter-organizational context. Cross-organizational ERP solutions are the preferred vehicles that profit-and-loss responsible business actors use to achieve cooperation in a value web (Davenport, 2000; Holland, Shaw & Kawalek, 2005; Nicolaou, 2008). An example of ERP-enabled value web is the business network of DOI: 10.4018/978-1-61520-625-4.ch001
This chapter addresses the cross-organizational coordination issues and proposes to augment the state-of-the-art ERP RE processes by using a set of ‘good’ practices that counterpart these issues. These practices are derived from the author’s own project experience (Daneva, 2004) and from secondary sources. The chapter makes the claim that for each company, there are different complexity levels of coordination in a value network, and that if a company aims to be involved in cross-organizational coordination at a certain level, then certain RE techniques are relevant and others are not. The author draws on previously published results (Daneva & Wieringa, 2006) from applying a coordination theory perspective to cross-organizational RE problems. The earlier research by the author and R.J. Wieringa (Daneva & Wieringa, 2006) yielded (i) a model of undocumented assumptions about coordination built into modern ERP systems, and (ii) a library of ERP-supported coordination mechanisms that the requirements engineer can match to the coordination needs of the businesses participating in a network. The present chapter refines the earlier work by introducing an organization’s coordination complexity levels and by linking these to appropriate RE practices. The specific technique we used to identify and characterize these practices is compliant with the approach which Sommerville and Sawer, 1998, deployed to define the practices in their RE Good Practice Guide.

The chapter is organized as follows: Section 2 provides the background for this research and presents related work. Section 3 reports on the method we used to design our solution proposal. Section 4 describes the solution. Therein, we discuss how companies differ in terms of who they participate with in business networks. We also map their scope of participation in a network to levels of coordination complexity that companies face. For each complexity level, we summarize the typical sets of cross-organizational coordination requirements that companies will have at this level. Based on this, we derive RE practices that
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