Chapter XVIII
Modeling Strategic Partnerships Using the E³-value Ontology: A Field Study in the Banking Industry

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ABSTRACT

The banking industry is subject to a wave of consolidation taking the form of mergers but also the formation of strategic partnerships. In this chapter, we present how such a partnership can be assessed using the e³-value ontology. This ontology allows us to model networks of enterprises and partnerships, exchanging things of economic value with each other. To adequately model strategic partnerships, the e³-value ontology has been extended to represent investment arrangements and outsourcing constructs. All this is explained using an industry-strength case banking study.

INTRODUCTION

Companies increasingly form networked value constellations to jointly satisfy a complex need. Well known examples are Cisco Systems (Tapscott, Ticoll, & Lowy, 2000) and Dell Computers (Magretta, 1998). In a value constellation, a series of enterprises and final customers coproduce things of economic value using network technology such as the Internet to coordinate this process. By doing so, they exploit each other’s core competencies to a maximum extent and enterprises can concentrate on and develop their own core competencies themselves.

Obviously, forming a constellation requires coordination and communication to facilitate coworking between the various enterprises of which the con-
stellation exists. One of the problems is that every enterprise speaks another language, thereby creating misunderstandings and barriers to proper communication. Such misunderstanding happens at all levels: information systems of various enterprise that are not very well interconnected, business processes that can not easily interoperate over enterprise borders, and even the constellation itself in terms of the participating enterprises and the services and products these enterprises transfer between each other.

One approach to address the misunderstanding is to use ontologies. According to Gruber (1995), ontology can be defined as “an explicit specification of a conceptualization.” The term “ontology” is borrowed from philosophy, here an ontology is a systematic account of existence. In the realm of information systems and artificial intelligence (AI), ontology has a somewhat different interpretation: “an ontology is what a community of practice believes to exist.” This is close to the opinion of Quine (1961), who says that an ontology specifies things that we must assume to exist in order for our theories to be true. What people believe to exist, we call a “conceptualization”. It represents an abstract, simplified view on the world. Modern definitions of ontology, for example, Borst, Akkermans, and Top (1997), emphasize that there must be an agreement on the conceptualization that is specified: “An ontology is a formal specification of a shared conceptualization.” This notion of shared conceptualization is important to us because we aim at a shared understanding of a constellation by enterprises involved.

Ontologies can be developed at various abstraction levels. For instance, recent Web standards such as OWL (e.g., http://www.w3.org/2004/OWL/) or Web services such as BPEL4WS (Andrews et al., 2003) provide ontological foundations for the communication between information systems of individual enterprises. Approaches like ebXML (see http://www.ebxml.org) focus on ontologies to enhance cross-organizational business process integration. And finally ontologies such as BMO (Osterwalder, Pigneur, & Tucci, 2005), REA (McCarthy, 1982) and e3value (Gordijn & Akkermans, 2003) aim at the shared understanding of the business value level: what do enterprises offer each other of economic value.

In this chapter, we focus on the use of these business value ontologies, and more specifically on the e3value ontology. This ontology understands a value constellation as a set of enterprises that transfer things of economic value with each other. It features an ontology editor (see http://www.e3value.com/ for a free download) that allows for a graphical representation of a constellation and supports various kinds of reasoning about the constellation.

One specific issue in e3value is how to represent partnerships. There is a specific construct for doing so, but a question is whether this construct is sufficient for representing advanced partnering issues. In this chapter, we use an industrial strength case study in the realm of banking to assess e3value’s capabilities with respect to the modeling of partnerships.

This chapter is organized as follows. In the second section we briefly introduce the e3value ontology and in the third section we introduce “partnership” as conceptual artefact in business sciences and discuss, in the fourth section, whether the e3value ontology can represent partnership. We explain this by using our case study in the banking industry. In the fifth section, we report on our experiences while using the e3value ontology in this industry. In the sixth section, we present some final observations.

THE E3VALUE ONTOLOGY

The e3value ontology provides modeling constructs for representing and analyzing a network of enterprises exchanging things of economic value with each other. The ontology itself has been expressed as a UML class diagram, Prolog code, and RDF/S (see http://www.w3c.org/RDF). A graphical e3value ontology editor as well as analysis tool is available for download (see http://www.e3value.com) (Gordijn & Akkermans, 2003).

We briefly introduce the e3value modeling concepts below with an example (Figure 1). For a more detailed explanation, see Gordijn and Akkermans (2003).

- **Actor**: An actor is perceived by his/her environment as an economically independent entity.