Chapter V

Collaborative Network Models: Overview and Functional Requirements

Sonja Ellmann
Universität Bremen, Germany

Jens Eschenbaecher
Universität Bremen, Germany

ABSTRACT
This chapter introduces a classification model that provides an approach to classify collaborative networked organizations. Many models with different names and organizational backgrounds can be found in today’s network literature. From a time perspective, traditional and innovative models provide two classification groups for collaborative networked organizations. In the process of this chapter, models with different names and organizational backgrounds will be introduced. Special attention will be given to the virtual organization. A classification model shows that collaborative networked organizations can be separated by using the body of knowledge and literature currently available. Requirements for the development of virtual organizations and inhibiting factors will be explained, and an organizational environment that supports the development of trust is subject to closer examination. The authors provide an overview regarding network management models. The reader should develop an understanding for critical factors in network relationships and understand essential requirements of networked organizations.
INTRODUCTION

Caused through an increased networking tendency, virtual integration of organizations has become more important in the last years and turned into a key success factor for the European industry as such. This becomes especially important, because the so-called next economy (Horx, 2003) drives new ways of doing business forward. Values such as collaboration, trust, confidence, and culture within and between enterprises become important success factors. Those values are essential for virtually networked and globally distributed organizations and their competitiveness. Innovative answers to solve evolving and new problems out of the increasing “virtualization” are key for remaining competitive.

In this respect, collaborative networks had a considerable development in the last couple of years. As a consequence of many different opinions represented by various authors, the evolving landscape of innovative collaborative network models has become confusing, and people are irritated because of non-standardized terminology. The term “collaborative networks” (Camarinha-Matos, 2004, p. 4) is in what follows used to summarize various kinds of enterprise networks.

In the first part of this chapter, the most relevant models that represent collaborative networks are discussed. The second part provides a classification model for differentiating collaborative networks. The dimensions have been developed after analyzing the collaborative networks in the first part with respect to criteria that characterize them. The dimensions of collaboration, virtuality, and organizational learning/knowledge have been selected, because they play a highly relevant role in every model. Those dimensions can be used to classify the organizational models and help to identify functional requirements for collaborative networks. Furthermore, all models require a different set of functional requirements for their evolution, existence, and development.

This chapter focuses on trust as the most important requirement. Yet, further requirements have been identified in a Delphi study and in a thesis on that topic (Smyth, 2003; Ellmann, 2003). Consequently, the following section discusses trust building as the main functional requirement for the evolution of collaborative networks. It presents a model that turns decentralized collaborative networks into mutually trusting environments.

The chapter answers the following research questions:

• What are the main concepts of collaborative networks with a special focus on the virtual organization?
• Can a classification model contribute to a better differentiation of collaborative networks? What would such a model look like?
• Does the model solve the classification need for network modelling?
• What are main barriers for collaborative networks?
• What main functional requirements can be deduced from these barriers for collaborative networks?
• The chapter provides a specific example for a barrier and a functional solution to overcome this barrier: What can a trust-building environment be like when focusing on virtual organizations?