Chapter 3
Mitigating Risk through Building Trust in Virtual Enterprise Networks

Burak Sari
Leiden Institute of Advanced Computer Science (LIACS), The Netherlands

ABSTRACT
The emergence of virtual enterprise networks represents a dynamic response to the challenge of the hierarchical coordination of networked businesses. Therefore, the chapter’s first aim is to provide justified answers to the question of why the virtual enterprise business model is getting so much attention and correlate these answers with the main business drivers that today’s enterprises are facing. In virtual enterprises, the distributed tasks of the partners must be integrated over and above the barriers of missing face-to-face interactions and cultural differences. The social integration of the virtual network involves the creation of identities for the participating nodes, the building of trust and the sharing of tacit and explicit knowledge between them. The traditional organization already doing well in these areas seems to have an edge when going virtual. As a consequence, trust becomes more and more important in these types of virtual collaboration networks. Therefore, this chapter finally aims to discuss extensively the way of managing trust in virtual enterprise networks as a solution to mitigate collaboration and performance risk in varying business situations and also aims to present conditions for building trust in the virtual collaboration context.

INTRODUCTION
Companies of the 21st century are faced with increasing demands from the market. These demands are, among other things, derived from technological innovations and the corresponding development towards a global marketplace. Specific advantages created from operating in a global market appear to be exploitable only by agile organizations. Companies must find organizational solutions that allow them to cope with global business opportunities without suffering the effects of their limited resources or exposing themselves to the risk of direct investments. Literature reveals that many
high tech enterprises have failed due to the lack of technical and management competencies (Berry, 1998). Companies are diversified through their competencies which are considered as a subset of resources and capabilities with the potential to lead the company to competitive sustainable advantages.

The increasing significance of the so-called ‘new economy’, also referred to as the digital and knowledge economy, pushes towards further concentration on corporate competencies while exploiting and developing these competencies in inter-organizational networks facilitated by advanced information and communication technologies (ICTs). In this context, the notion of the virtual enterprise is receiving increasing attention as a business model addressing these new business challenges. A virtual enterprise (VE), sometimes coined with the term virtual organization or business network, can be defined as a temporary network of companies that come together quickly to exploit fast changing opportunities (Davidow & Malone, 1992). It is based on the ability to create temporary co-operations and to realize the value of a short business opportunity that the partners cannot (or can, but only to lesser extent) capture on their own (Katzy & Schuh, 1998). The virtual enterprise has therefore the ability to recognize, rapidly react and cope with the unpredictable changes in the environment in order to achieve better responses to opportunities, shorter time-to-market, and higher quality with less investment (Goranson, 1999). The major challenges of VEs are the ability to share business processes and to establish supporting distributed IT systems which permit the effective utilization of flexible organizational structures and communication across the network and promotes the development of trust among members. Because of the pervasiveness of distributed IT systems and the shared processes, the interactions and interdependencies among VE members affect the performance of a VE. Those interdependencies are related to risk mitigation processes (Grabowski & Roberts, 1999). For instance, fluid organizational structures alone may or may not dampen risk in VEs; however, organizational structures that provide flexibility in response options as well as communication opportunities can better facilitate the risk mitigation process (Weick, 1993).

The success of a virtual enterprise is tightly related to the ability to set up a business formation uniquely tailored for a specific market delivery and composed of competencies from independent partners often not well acquainted. Besides, a crucial prerequisite for the existence of a virtual enterprise is the time it takes to deliver the solution, and as a part of this, the time it takes to set up the virtual enterprise itself. It is of no use being able to deliver a ‘first class solution’ if the time to market is not competitive. Until now, research into virtual enterprises and related business-to-business initiatives have generally focused on technological solutions and the linking of distributed information systems (Camarinha-Matos & Afsarmanesh, 2003; Filos & Ouzounis, 2003). However, technological solutions alone are not sufficient. Several other aspects need to be explored as well, such as the risk/uncertainty related to co-operating with new partners (are the partners trustworthy?) in a global environment.

In its conceptual form, the virtual enterprise creation is triggered by a specific customer need. Then, companies come together to share costs and skills that they could not undertake individually and create the solution requested by the customer (Sari et al., 2007). However, this is easier said than done, since a set of challenges is related to the virtual enterprises business model. One of the most significant challenges is related to the dynamic aspect of a VE such as dealing with new and unknown partners on a more frequent basis. Thus, the first objective of this chapter is to clarify the virtual enterprise concept based on a thorough literature review and determine a business concept that suits the situation of industrial enterprises, i.e. the main challenges that were identified. That is, the chapter is expected to contribute with a new