Chapter 6.17
Market of Resources as a Knowledge Management Enabler in VE

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INTRODUCTION

Knowledge is, undoubtedly, an indispensable asset for organizations to compete effectively (Alavi & Leidner, 2001; Murray, 2002).

New organizational models, such as the virtual enterprise (VE) model, characterized as dynamically reconfigurable information-based global networked structures, are emerging. New technological environments and solutions are being developed to support them, and the importance of knowledge and the capability of managing it by creating the organizational conditions that facilitate the generation, sharing, and application of knowledge are more and more critical.

In a global organization, as defended by Kluge, Stein, and Licht (2001), face-to-face relationships are not possible, giving rise to difficulties in accepting knowledge from outside. This applies more deeply in virtual enterprises (or in virtual organizations) in the interactions among the independent partners who tend more and more to fear the leakage of private knowledge. This situation promotes competition and rivalry and, as suggested by Prahalad and Hamel (1990), impedes collaboration and knowledge sharing, precisely two of the main underlying issues of this organizational model. A supporting environment, such as the market of resources proposed by the authors, is the way to assure effective knowledge manage-

ment between the members of a virtual enterprise and business strategic alignment enabling the performance improvement of the VE.

In an environment to support VE integration, knowledge management is simultaneously a tool and an object. As a tool, knowledge management can be used by the market of resources to reduce transaction costs in VE integration and VE reconfiguration; as an object, knowledge must be protected and knowledge leakage prevented to assure trust and protection of VE participants.

The broker (an integrating element of the market of resources) is, besides other attributions, responsible for advising the VE owner in identifying and communicating the role of knowledge management within the VE business plan and for ensuring the permanent alignment between business strategy and knowledge strategy within the network of independent enterprises that constitute the VE. The broker must ensure that the global knowledge sharing is not threatened by deficient knowledge management procedures and, simultaneously, that any instance of the VE (as a reconfigurable network) at a given time, is able to respond to the market requirements with its maximum performance, that is, is business aligned.

In this article, we introduce the VE disabling factors and the functionalities for VE integration, briefly present the market of resources as an environment to support VE integration, assuring business alignment and knowledge management, identify the main strengths and problems associated with the implementation of knowledge management functions, and, finally, discuss the main opportunities associated to the implementation and exploitation of the market of resources.

BACKGROUND: VIRTUAL ENTERPRISE INTEGRATION

The virtual enterprise model can be viewed as a global networked and information-based organi-

zational structure in dynamic adaptation (reconfiguration) to the market or business requirements. Virtual enterprises (in a broad sense) are defined as enterprises with integration and reconfiguration capability in useful time, integrated from independent enterprises, primitive or complex, with the aim of taking profit from a specific market opportunity (Byrne, 1993; Camarinha-Matos & Afsarmanesh, 1999; Cunha, Putnik & Ávila, 2000; Preiss, Goldman & Nagel, 1996; Putnik, 2000). After the conclusion of that opportunity, the virtual enterprise dissolves itself. During its lifetime, the VE changes its physical structure (reconfigures) to be permanently aligned with that market opportunity.

We designate, by resource, any function, service, or product provided by independent enterprises (resources providers), candidates to integrate a VE. The resource is a recursive construct; resources can be primitive or complex where a complex resource consists on a meaningful combination of primitive resources.

There are several factors determining the performance of the VE model. In the BM_Virtual Enterprise Architecture Reference Model (BM_VEARM) (Putnik, 2000), the author presents "fast adaptability" or "fast reconfigurability" as the most important characteristic for the competitive enterprise, enabling the agile alignment with the market.

In this section, we introduce the VE disabling factors, the tools proposed to overcome the disabling factors, and the functionalities required to efficiently implement this organizational model.

The Virtual Enterprise Disabling Factors

The main critical aspects associated with the recent concept of dynamically reconfigurable global networked structures; that is, the main factors against networking and reconfigurability

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