Chapter VI

Information Technology for Intelligent Metabusiness

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This chapter presents a framework to integrate effectively different information technologies in order to raise the intelligence and manage the knowledge of a metabusiness, an innovative business model. The concept of intelligence in a metabusiness is analyzed and the information technologies needed to create this new business environment are presented, as well as an integrated model based on a technology-service-process-production taxonomy. A case study addressing a major engineering company in Brazil, now playing the role of an integrator within a metabusiness, is presented in order to validate the proposed model. The main obstacles and hurdles to accomplish an intelligent metabusiness are presented as well as the solutions to overcome them. Future trends and some conclusions in this realm are presented, mainly the ones regarding how to leverage the Human and Innovation Capital in a metabusiness.

OBJECTIVES

One of the greatest challenges of the new Knowledge Economy is to deal with several innovative business models, i.e., the ones that challenge traditional notions of structure, coordination and control. When all the tasks and processes of an enterprise are centralized in just one company, it is easier to organize and manage the knowledge accrued from a project. However, a lot of different players can now be involved in major projects in innovative business models. Hence, how is it possible to manage and store the knowledge generated during an enterprise, so as to use it during the current project and not to lose it at all for future projects?

A metabusiness or a relational company—also named virtual organization—is a quasi-firm created through digital links among several companies, in such a way that it is almost impossible to know exactly its boundaries (Keen, 1991). A
metabusiness—as an innovative business model—is also independent of its organizational structure, as each node has its own structure that can be changed without interfering in other nodes’ structures.

“The Organization is its Formal Structure” and “Structure follows Strategy” (Chandler, 1962) are two hypotheses challenged by metabusinesses that wisely use information technologies.

The main objective of this chapter is to integrate effectively different information technologies to raise the intelligence of a metabusiness in charge of a major project or enterprise, through the creation, deployment, sharing, storage and retrieval of both tacit and explicit knowledge.

THEORETICAL FRAMEWORK

Some very important research has addressed some features on Intelligent Metabusiness and Knowledge Management, such as: Knowledge Links (Badaracco J., 1991); The Emerging Flexible Organization: Perspectives from Silicon Valley (Bahrami, H., 1992); Building Intelligent Networks (Baker W., 1994) just to name a few.

Notwithstanding being very important, this research just taps on how to create, deploy, transfer, store and retrieve the intelligence of an enterprise encompassing a lot of different companies, in different places, with different—although important—duties. Therefore, the next logical step includes expanding the research to ongoing and ad-hoc intraorganizational groups. In order to accomplish this, it is paramount to understand how information technology can leverage and strengthen the knowledge links among the players of a major project involving a lot of subcontractors, suppliers and other firms.

This study analyzes the role and impact of the information technologies in three branches of a Metabusiness: its degree of connectivity, its degree of sharing and its degree of structuring (Haeckel & Nolan, 1993). These three parameters are considered vital to establish the intelligence of a metabusiness and its expertise to manage the involved knowledge.

The connectivity issue addresses the “degree of reach” of the metabusiness, i.e., if and how the involved companies are linked within the metabusiness in order to transmit data and information among themselves.

The sharing issue addresses the “degree of range” of the metabusiness, i.e., the type of transactions developed within the metabusiness, and the way the companies are working together, in order to set up a workgroup environment.

Finally, the structuring issue deals with the ability that the companies have to extract knowledge from the data and information retrieved and shared by them. As is known, knowledge—either tacit or explicit—is much more than data and information, and according to the Autopoiesis Theory (Maturana & Varela, 1980) is created when a “structural coupling” occurs with the workers. This research shows that this issue is a key point for the success of an enterprise, and the one where the major flaws and drawbacks occurred. People have great difficulty to transform raw data and information into knowledge, as well as tacit to explicit knowledge, notwithstanding several frameworks explaining how this can be processed, as the Knowledge Spiral from Nonaka & Takeuchi (1995). The current educational system hinders workers to
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