Intelligent Metabusiness

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INTRODUCTION

In 1994, the Sloan School of Management at MIT inaugurated a multi-year research and education initiative called "Inventing the Organizations of the 21st Century", headed by Thomas Malone, Director, Center for Coordination Science. One of the key activities of this initiative has been developing a series of coherent scenarios of possible future organizations. The Scenario Working Group considered a wide variety of possible driving forces, major uncertainties, and logics that might shape 21st century organizations. Two scenarios were then created addressing the size and the *modus-operandi* of the future organizations: "Small Companies, Large Networks", as the one found in Northern Italy (Textile Production in the Prato region of Italy), and "Virtual Countries", as more mergers and acquisitions are turning up worldwide (e.g., Exxon and Mobil) (Laubacher & Malone, 1997).

One of the greatest challenges of the new knowledge economy is to deal with new organizational forms, that is, the ones that challenge traditional notions of structure, coordination and control, such as the companies derived from the "Small Companies, Large Networks" scenario. When all of the tasks and processes of an enterprise are centralized in just one company, it is far from difficult to organize and manage the knowledge accrued from a project. However, a lot of different players can now be involved in major projects. 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?

Some very important researchers addressed some features on this issue, such as Badaracco (1991), Bahrami (1992) and Baker (1994), just to name a few.

Notwithstanding being very important in their realm, 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, namely a metabusiness.

BACKGROUND

Metabusiness

A metabusiness or a relational company 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 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" are two paradigms challenged by metabusinesses that wisely use information technologies.

This overview presents the role and impact of information technologies in three branches of a metabusiness: its degree of connectivity, its degree of sharing and its degree of structuring (Haeckel & Nolan, 1993). According to the latter authors, 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, that is, 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, that is, 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 (see also, Kim, 1998). This overview 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

and Takeuchi (1995). The current educational system hinders workers to learn how to learn, making it difficult for them not to create standardized mental models to deal with new knowledge.

Hence, different technologies such as Electronic Data Interchange (EDI), Electronic Document Management Systems (EDMS), Workflow Systems, Internet/intranet/extranet and mainly Web-Based Instruction (WBI), just to name a few, are integrated to leverage the metabusiness' intelligence.

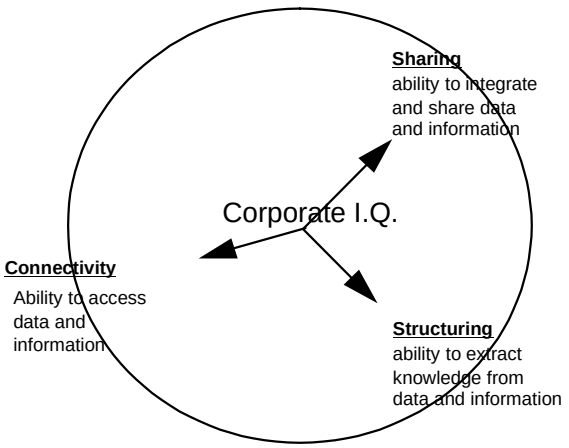
Intelligent Metabusiness

As was already said, metabusiness 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). This definition matches the "Small Companies, Large Networks" scenario of MIT Scenario Working Group (Laubacher & Malone, 1997). In a metabusiness, the integrator keeps the core competency of the business, outsourcing most of the other productive processes. The integrator is in charge of managing dependencies and restrains among the players and their due processes, coordinating the transactions among the involved partners.

According to Prusak (1997), some trends are forcing companies to be engaged in a metabusiness:

a) the globalization of the economy and the terrific pressure on firms for increased adaptability, innovation and process speed;
b) the awareness of the value of specialized knowledge, as embedded in organizational processes and routines of the nodes of a metabusiness;
c) the awareness of knowledge as a distinct factor of production; and
d) cheap networked computing, which is at last giving us a tool to work and learn with each other.

Figure 1. Corporate I.Q.



During the development of an enterprise, data and information are exchanged among the players compounding the metabusiness. Data and information are not knowledge, although often considered as such. There is great misunderstanding and confusion about the differences between data, information and knowledge.

Data means a set of discrete and objective facts concerning events. Therefore, it can be understood as a structured record of transactions within an organization (Davenport & Prusak, 1998).

Information is data that makes difference and is relevant, or as Peter Drucker says: "information is data with attributes of relevance and purpose" (cited in Davenport & Prusak, 1998, p.4). Normally, information is understood as a message, usually having the format of a document or visual and/or audible messages. Information is, above all, context-based.

Knowledge is linked to the capacity of action (Sveiby, 1997). It is intuitive, therefore hard to be defined. It is linked to the user's values and experience, being strongly connected to pattern recognition, analogies and implicit rules. Most of the time, knowledge within an organization is located both inside employees' heads (tacit knowledge) and in documents (explicit knowledge). This can explain why too much confusion has arisen between document management and knowledge management.

Although it is a generally accepted distinction, doubts have been cast recently over the tacit-explicit dichotomy (Polanyi, 1958). According to the autopoietic epistemology school (Varela, Thompson, & Rosch, 1992), knowledge is a private, personal thing, and so an organization cannot possess it. Hence, knowledge cannot be explicit, only tacit: Explicit knowledge is actually data and/or information which help other people to create their own knowledge through what is known as "structural coupling". However, this overview will accept the tacit-explicit distinction, which will enable us to reach more interesting conclusions.

Then, assuming the tacit-explicit dichotomy, the following mathematical formulas depict what was said (Joia, 1999):

INFORMATION = DATA + $\sum$(Attributes, Relevance, Context)
KNOWLEDGE = INFORMATION + $\sum$(Experience, Values, Patterns, Implicit Rules)

The main question is to know how knowledge can be transformed into metabusiness intelligence. Using the I.Q. metaphor (notwithstanding its flaws), it can be said that the metabusiness I.Q. (Haeckel & Nolan, 1993) can be