Chapter 11

Interorganizational Information Systems and Interorganizational Relationships

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ABSTRACT

As the external environment and alliance partnerships become more complex, managers should consider appropriate partners to enhance the efficiency and performance of their chain, as well as to gain potential competitive advantages (Chang, et al., 2007). Additionally, due to increasing global competition many organizations are aware of the benefits of using electronic solutions to support their Business-to-Business (B2B) environment. Thus, they opt to establish an electronic infrastructure to carry out physical chain’s transactions and cover potential interorganizational relations. This would explain the prevalent use of interorganizational Information Systems (IOS) over previous years. Indeed, several well-known firms such as Wal-Mart, Dell Computer, and Carrefour have attained strategic advantages by setting IOS in their chains. In regard to their incontestable success within B2B networks, the chapter first focuses on the concept of information technology and particularly “interorganizational information systems” and its theoretical approaches. Accordingly, this chapter argues as a second step the theoretical relation between information technology (or IOS) and interorganizational contexts. Some approaches are advanced to conceptualize this interaction. The socio-technical approach is largely presented due to its relevance to research propositions.

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1. THEORETICAL APPROACHES OF TECHNOLOGY AND INTERORGANIZATIONAL INFORMATION SYSTEMS

To cover the concept of Interorganizational Information Systems, we found it necessary to discuss the importance of information and its processing in reducing uncertainty. Based on General Systems Theory, we will emphasize the theoretical alteration from Information Technology toward Interorganizational Information Systems.

1.1 Organizational Information Processing Theory

The organizational Information processing has been evoked by a number of researchers (Galbraith, 1977; Daft & Lengel, 1986). Other previous models have been developed such as Simon’s Model (1957). The work of Galbraith (1977) will be the most cited model in the present section.

1.1.1 An Overview; The Concept of Information

Before presenting the Organizational Information Processing Theory (OIPT), we believe it would be instructive to introduce the notion of information. We suggest this concept was jointly developed with the need to process information. In fact, information systems are technologies storing processing and communicating information. Therefore, the notion of information is quite important in studying information systems approaches.

1.1.1.1 What is Information?

A great number of researchers have been interested in defining the concept of information. Three major approaches could be cited to explain its nature. The first one is related to information theory which is “a branch of applied mathematics and electrical engineering involving the quantification of information”.

Information theory was developed by Shannon (1948) to find fundamental limits on signal processing operations and assess the noise that could occur when the signal passes from the transmitter to the receiver through the channel. This task allows us to measure the information itself. Information is considered as knowledge derived from data. The Shannon’s definition of information is useful for computer scientists and communication engineers. Critics were advanced to the naivety of the present approach in treating the concept of information. Hence, the need for a second approach appeared.

In fact, the second approach is related to the capacity of the human brain in interpreting information. This idea derives from cognitive psychology which stipulates that “the human mind is conceived of as a structured system for handling information”. According to cognitive theories, information selected by senses is analyzed, stored, recoded, and used in various ways: cognitive information processes. The approach which appears to be the most appropriate to the research is the social sciences and communication theories (pioneered by Frarace & al., 1977). These approaches stipulate that the information is an output of a subjective knowledge of the receiver. Hence, it depends on its own perceived characteristics of information.

Other researchers have incorporated the notion of communication in information. In fact, scientists have seriously underestimated the impact of structure on communication within an organization. Organizational academics demonstrated the crucial significance of communication in explaining organizational behavior (Sinha & Reddy, 1991). Additionally, the behavioral decision theorists (Cyret & March, 1963) have contended that communication is critical in organizations in which people assigned roles to accomplish objectives. To achieve these objectives, actors use information to choose among a set of alternatives. Hence, the structure-communication (or organization-information) interaction empha-
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