Inter-organizational information system and virtual enterprise

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Abstract
The business environment has been changed spectacular in the last three decades, especially the speed of appearance and disappearances of business opportunities has known a major increase. Therefore the companies were determined to develop new types of organizational structures which can include more standard enterprises and to develop information systems that can be used in this context. A very common type of organization which that fulfill this requirement is represented by virtual enterprise (VE) and the information system used by VE it is represented by inter-organizational information system. This paper presents a short overview regarding the concept of IOIS and VE. Conclusions and future directions of the research are discussed.

Key words: information system, virtual enterprise, electronic data interchange

Introduction
In the last two decades in the domain of the information and communication technology (ICT) has been developed new methodologies, technologies and tools for handling data, information and knowledge which combined with the spectacular evolution of the Internet has generated a major impact on the global business environment.

Flexibility, adaptability and cooperation are characteristics that must characterize every modern organization, therefore the exchanging and sharing data and information (by inter-organizational information systems), coordination between business partners (by virtual enterprises) and other company-to-company alliances has become strategically important (Gunasekaran et al., 2005).

Virtual Enterprise
The main objective for every company is to enhance its business performance by using internal resources (financial, human, informational etc.). In the actual context of globalization, when the available time for decision making process it is reducing, and the need of informational resources that are used for adopting decision it is increasing, therefore was necessary to be created new types of organizations that fulfill these requirements. One of these new types of organizations it is represented by virtual organization which is a temporary organization of companies, geographically distributed and organizationally independent, that is formed in order to identify and exploit fast-changing
opportunities that come together to share common costs and skills to address business opportunities that they could not undertake individually. (Gou et al., 2003). The virtual enterprise (VE) concept can be used to characterize the global supply chain of a product or service in a complex business environment where at least two companies cooperate in order to provide that product or service (Martinez et al., 2001).

The main objectives of virtual enterprises are (Martinez et al., 2001; Bobek et al., 2002): (i) the development of a pool of competencies and resources because each partner brings its core competences; (ii) minimization of cost and maximization of revenues because the resources of every partner are managed and used in a more profitable way; (iii) optimization of business opportunities identification and exploitation because the market opportunities can be managed and exploited more efficient together than by each individual organization.

The life cycle of virtual enterprise consist of four stages (Strader et al., 1998; Filos and Ouzounis, 2003; Chen, 2008): (i) evaluation of business opportunity; (ii) formation of VE; (iii) activity and reconfiguration of VE; (iv) dissolution of VE.

The main challenge of a VE is to link information systems belonging to all organizations that are included in VE and make them to interact and communicate (Martinez et al., 2001) the information system which can provide these requirements is known as inter-organizational information system (IOIS) and must take into consideration three aspects: standardization, interoperability and security of information systems.

Inter Organizational Information Systems

The information system (IS) represents the core of every organization because collects, processes, stores, analyses and provides data and information in order to fulfill de target objectives. The evaluation of an information system can be done by using to indicators: effectiveness (how the proposed objectives are fullfiled) and efficiency (how are used the resources for obtained results). Peter Drucker defines these two indicators as follows: effectiveness is doing the right thing and efficiency is doing the thing right.

Due to actual economic context and business environments, the organizations are very preoccupied to improve their inter-organizational processes and data and information flows with their partners, therefore were developed inter-organizational information systems which are based on Internet and Electronic Data Interchange (EDI). In the same time, such an IOIS can provide a greater flexibility and adaptability of internal IS to the management requirements.

According to Eom (2005) “an inter-organizational system (IOS) is an information and management system that transcends organizational boundaries via electronic linkages with its trading partners to share data, information, and business applications, provide the capabilities of electronic transactions including buying and selling goods and services, and facilitate communications and decision making for the purpose of increasing efficiency, effectiveness, competitiveness, and profitability for participating organizations”.

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An IOIS can interact (collect/provide data or information from/to) with any of the information systems that exist in organization (Transaction Processing Systems – TPS, Office Automation Systems – OAS, „Knowledge Work Systems – KWS,„ Management Information Systems – MIS,„ Decision Support Systems – DSS,„ Executive Support Systems – ESS) in order to provide an optimized information flow between IS that are parts of the IOIS. According to Kumar and van Diesel (1996) the IOIS can be classified in: (i) Pooled Information Resource IOIS; (ii) Value / Suplly Chain IOIS; (iii) Networked IOIS.

The process of designing, building and implementing of an IOIS must take into consideration the following factors: (i) business strategy: the achievement of common objectives and strategic alignment; organizational factors: security, the process integration on the global value added chain; (iii) risk management: data integrity, confidence and authentication, risk management regarding to confidence and trust between partners.

Conclusions
Because the business environment is very dynamically and business opportunities can appear and disappear very quickly it is necessary that companies to create business networks / business alliances that will monitor the business environment for identifying business opportunities.

In order to optimize business processes and to increase business performances organizations must optimize data and information flows with their business partners by using IOIS.

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