VIRTUAL OFFICE:
A Web Platform for a Collaborative Networked Organization

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ABSTRACT

The integration of functions in business networks requires a high level of integration of the information processes. Based on file transfers, these networks respond to the requirements of collaborative processes. There is an effective need for a strategy of integration among the members of the network. In the ICT era, the collaborative company needs to reach and maintain agility in the dynamics of their collaborative processes. Within the frame of a collaborative network, the development of a web platform permits the growth of an area that integrates collaborative processes, in which several companies participate, each supplying their own data. The Fruit-and-Vegetable Collaborative Network studied in this paper is formed by producers, processors, packaging companies, marketers, transporters, and distributors. It has been developed via a web platform (Virtual Office), which allows the network to carry out processes in a collaborative way, and helps the network in its process of confidence-building and in the interactions among its members.

Keywords: Collaborative Network, Exchange of Information and Knowledge, Information Flows, Information Processes, Interoperability, Web Platform

1. INTRODUCTION

Spain continues to occupy the first place in the world ranking of fruit and vegetable exports, with a market share of 9% of the total. Driven by strong competition, new methods and technologies have been incorporated, fundamentally in the creation of new varieties or in the modification on the existing ones. Innovations may come in the form of the development of new ways of presenting a product, or an improved traceability of the logistic chain, with an increased amount of data and information being made available, and of course by means of the development of a collaborative network that goes from the producer to the distributor, and is comprehensive of all the nodes that take part in the process.

The collaborative network (CN) should integrate producers’ data regarding the product and how it has been handled; haulers’ data, which should not be limited to departure and arrival

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details but also include information about en-route handling, and distributors’ data, which must be supplied to the clients (de-la-Fuente & Ros, 2010).

The main objective of an information system is the management and treatment of data, information and knowledge, all of it in connection with human activity. In CNs, the information systems also have the objective of managing the available data, the information and descriptions generated by the integration of products and services. One of the main obstacles faced by information processes is the lack of systemization, which is crucial for the development of information processes that may be exchanged among the different members of the collaborative network (Ros-McDonnell & de-la-Fuente-Aragon, 2010).

2. COLLABORATIVE NETWORKED ORGANIZATIONS

Participation in networks has become critical for any organization striving to achieve a better competitive advantage. Among the wide variety of existing networks, collaborative networks are especially relevant. These have emerged over the last few years as a result of the challenges faced by both the business and scientific world, since collaboration has become the key issue for manufacturing companies to give a rapid response to market demands through sharing competence and resources (Camarinha-Matos et al., 2009).

Because of their limited resources, small and medium enterprises need to join efforts through collaboration in order to be able to adapt to continuous changes in the current market. Collaboration for these companies entails considerable advantages, among them collaborative innovation resulting from the confrontation of ideas among members of different organizations, and trust as a base for the success of innovation (Fawcett et al., 2012). In addition, sharing expertise or know-how, the adoption of good common practices and the compatibility of open-web systems promote the creation of such concepts as integrated companies and collaborative networks.

Collaboration helps companies to align their processes to respond to changes in demand, and to anticipate their competitors, which will result in significant benefits for the network. A collaborative relationship leads to better business results than those which may be obtained by the same companies trading at an individual level (Fawcett et al., 2012). A CN is based on a variety of entities (i.e. organizations and people) that are mainly autonomous and geographically distributed. Nevertheless, these entities collaborate to better achieve compatible goals, using ICT to support the enhancement of collaborative business opportunities (Camarinha-Matos & Afsarmanesh, 2005).

A necessary condition to obtain good results from collaborative relationships is the integration and interoperability of processes within the supply chain (Dershin, 2000), which may be understood as the capability of two or more systems or components to exchange and share information, as well as the ability to provide and receive services from other systems, and to use these services for an efficient exchange (Open Group, 2000).

Through collaborative processes, companies commit themselves to joint decision making, while trying to reach business objectives shared by all the network members, to coordinate their actions and to exchange information (Bouchbout et al., 2012). Transferring data and sharing information are necessary in any collaborative relationship, as well as reciprocal trust among the members and some sort of safe, reliable system for information exchange.

In a collaborative network, information integration must follow the guidelines of Giachetti’s frame (2004), since network operation needs four simultaneous conditions: coordination, interoperability, data transfer and connectivity. If these four conditions are present, information integration allows a CN and its members to be able to react quickly in the face of pressure from
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