6th International Conference on Industrial Engineering and Industrial Management.
XVI Congreso de Ingeniería de Organización. Vigo, July 18-20, 2012

The importance of strategic alignment in enterprise collaboration

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Abstract: The increasing competition, in which companies are currently involved, requires the search for agreement among different trading partners to achieve synergies that will allow them to build competitive advantage and survive in a globalized environment. Additionally, the use of information and communication technologies (ICT) in this environment is essential to integrate and communicate to members of the supply chain (SC) or networks that want to collaborate, therefore it is necessary that the information systems and information technologies (IS/IT) be adjust and be support to global business strategy of the SC and/or networks. In this sense, this article seeks to analyze, relate and synthesize the research that has addressed the disciplines of collaboration and strategic alignment, both individually and jointly, in order to identify possible future lines of research from conceptualization performed.

Keywords: Enterprise collaboration, strategic alignment, information systems (IS), information technology (IT), collaborative networks.

1.1 Introduction

The aim of this paper is to approach as close as possible the concepts of IS/IT and business strategic alignment to the business collaboration, as well as, perform a deep analysis of articles that has combined these two concepts. In an effort to gain a better understanding of the concepts and to provide a basis for future research, a broad review of some existing research on the topic has been presented. This paper is organized as follows. In next section, the methodology used in the selection of scientific articles. Secondly, we present a conceptual and comparative analysis of selected articles regarding to strategic alignment and enterprise collaboration. Then, conceptualization and joint analysis between enterprise collaboration and strategic alignment, and finally, the conclusions and directions for further research.

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1.2 Methodology

The search process was carried out with scientific-technical bibliographic databases, as well as, web sites related to these themes. The following search criteria were applied: strategic alignment, business strategy and integration (in the strategic alignment field), and strategic collaboration, integration enterprise and collaborative planning (in the enterprise collaboration field). The main selection criteria of articles were: the number of times cited and the most recent year of publication (after 2007), without leaving aside the articles prior to this date that form the theoretical basis on the issues investigated. The majority of the citations were found in journals (44%), conference (28%), book chapter (18%), web documents (5%) and PhD thesis (5%).

1.3 Conceptualization of Enterprise Collaboration

Increasing profits and generating more customer value force enterprises to not compete individually, nowadays SCs compete among them, so it is necessary to have a high degree of integration among partners that take part in these SCs (Plaza et al., 2010 and McIvor et al., 2000). This degree of integration may be achieved through collaborative mechanisms to ensure the alignment of individual plans in the search for a goal or joint plan. In this point, collaboration emerges as a tool that allows SC members to make decisions together, based on shared and exchanged information, to coordinate and synchronize activities.
According to (Stadtler et al, 2002; Alarcón et al., 2004; Alarcón, 2005; Petersen et al., 2005; Ribas et al. 2007; Ribas et al., 2006; Stadtler, 2009; Dudek, 2009), we define business collaboration, as: "*A joint process between members of the SC, where the decisions are made jointly, based on the information shared and exchanged on a bilateral form, achieving coordinate and synchronize joint activities to meet customer requirements and achieve process efficiency sets to generate a mutually beneficial*" (Vargas et al. 2011b).

1.3.1 Collaborative Process Description

For Kilger et al. (2008), the collaboration process consists of six activities: 1) Definition, 2) Planning in the local domain, 3) Plan of exchange, 4) Negotiating and exception handling, 5) Execution and 6) Measurement of results. However, in this generic process has not been taken into account a crucial aspect for determining efficient collaboration: this is the definition of how to share benefits equitably to ensure the stability of the collaboration (Audy et al., 2010). The solution to this as-

pect is provided by Stadtler (2009), which proposes a system of compensatory payments. This system may be agreed on the definition phase of the negotiation and exception handling and can be implemented when the results are evaluated. Other aspect not considered in the process of Kilger et al. (2008) is the feedback between parts once the collaboration process has been completed in the stipulated horizon, which allows reviewing and modifying the plan if it is necessary.

1.4 Conceptualization of Strategic Alignment

Nowadays, IT and IS have acquired a strategic role within organizations and this function has increased the impact on business strategy providing competitive advantages. Companies manage the technological complexity of their IS in order to generate added value to business processes. This can only be achieved if there is an alignment between business and IS/IT. This concept becomes stronger in the 90's thanks to the Strategic Alignment Model (SAM) proposed by Henderson and Venkatraman(1993). although the theory suggests that there should be a strategic fit between the internal and external domains of both business and IT and also there should be a functional integration between business and IS/IT, in fact the implementation of the alignment is quite complicated to carry it out, because of the studies, models and/or frameworks developed for this purpose are scarce and often their utility have not been validated in the real world.

Several authors have defined the term strategic alignment (Luftman et al., 1999; Luftman, 2000; Maes et al., 2000; Marques et al., 2005; Erosa et al., 2008; Chen et al., 2008; Adaba et al., 2010; Chen, 2010; Cuenca et al., 2010), according to the most important elements provided in these definitions, we suggest the following: *"The strategic alignment of business and IS/IT is a dynamic and continuous process that enables integration, adjustment, consistency, understanding, synchronization and support between business strategies and strategies of IS/IT, in order to contribute and maintain the correct performance of the organization, creating a competitive advantage that is sustained over time"*.

However, while the concept of strategic alignment is easy to understand (Thevenet et al., 2008), its application in the enterprise is not easy to carry out (Chen et al., 2008) due to a complex business environment (Hu et al., 2006) and frequent organizational and infrastructure changes faced by enterprises.

1.4.1 Main models and frameworks of strategic alignment

The field of strategic alignment is reinforced by SAM exposed by Henderson and Venkatraman (1993), but their bases are theoretical and not practical. The alignment maturity model (AMM), by Luftman (2000), presents a practical component that

SAM does not have; this model is based on the conceptual concepts treated in SAM where, practical aspects for strategic alignment are included. Proposing a model to measure the degree of business and IS/IT alignment maturity enables the company to identify, how it is, where and how to improve (Vargas et al., 2011a).

Several authors have extended or used SAM from different conceptual aspects seeking to ensure strategic alignment (Maes, 1999; Wang et al., 2008; Luftman et al., 1999; Thevenet et al., 2008; Hu et al., 2006; Marques et al., 2005; Mekawy et al., 2009; Dong et al., 2008; Weiss et al., 2004; Cuenca et al., 2010; Cuenca, 2009; Cuenca et al., 2011a; Maes, et al., 2000). Other proposal have been based on the AMM to propose practical conceptual models (Luftman, 2003; Adabaet al., 2010; Chen, 2010; Erosa et al., 2008; Bagher et al., 2010). However, all these previous models can only be applicable to the individual business, but it is clear that the atmosphere of competition in the market is quickly changing towards a more collaborative environment, in this sense, some authors have proposed models or frameworks for alignment in the inter-enterprise context (Derzsi & Gordijn, 2006; Santana et al., 2008), or have been taken into account the social factors of alignment (Lee et al., 2008; Pijpers et al., 2009).

1.5 Conceptualization and analysis of enterprise collaboration and strategic alignment

Although it is evident the need of collaboration between members of a SC and to lean on IS/IT to support the joint business, very few studies have been tackled these issues together: Derzsi & Gordijn (2006) address the issue of strategic alignment in supply chains or networks, although the issue of collaboration has not been addressed specifically, it is considered an intrinsic part of the structure of the current SC; Pijpers et al. (2009) address the strategic alignment from the design of the company and they take into account the inter-organizational relationships that the company and its partners should have; finally, Santana et al. (2008) deal with the alignment by defining a maturity model for collaborative networks alignment.

In order to perform a conceptual analysis of the aspects that are taken into account in strategic alignment models in collaborative environments, we have identified the components of the previous researches of alignment, and checked which are covered by these models. Table 1.1 shows the required components defined by (Cuenca, 2009; Henderson and Venkatraman, 1993 and Luftman, 2000). The nomenclature used is explained below: The "+" means that the alignment component is covered by the model using the same or similar name, "-" means that the component is not covered by the model and the "/" means that the component is not defined in the model explicitly but it is defined implicitly. According to this analysis, all models include, explicitly or implicitly defined alignment components of Henderson and Venkatraman (1993), the components defined by Cuenca (2011b), are not

completely covered by these models, and the AMM of Luftman (2000), is only used in the model of Santana et al. (2008).

On the other hand the Table 1.2 shows the relationship between the phases of the collaborative process discussed in Section 1.3.1 and models of alignment of business and IS/IT in collaborative environments, in order to identify which aspects of collaborative process covering these models, the conventions used are the same as in the Table 1.1.

Table 1.1 Analysis of the components of strategic alignment and strategic alignment models in collaborative environment

Research	Component Strategic Alignment	Author, year		
		Pijpers et al., 2009	Santana et al., 2008	Derzsi & Gordijn, 2006
Henderson and Venkatraman (1993)	Business strategy	+	+	+
	Organizational and Processes Infrastructure	+	+	+
	Infrastructure Information Systems	+	+	+
	IS/IT Strategy	/	/	/
Cuenca (2011,b)	IT Conceptualization	/	/	/
	Application and Services Portfolio	-	-	-
	Alignment Heuristics	-	-	-
	Strategic Dependencies Model	-	-	-
	Alignment Maturity Model	-	+	-
Luftman (2000)	Alignment Maturity Model	-	+	-

The phases for collaborative processes are not covered by any of the models, only implicitly the planning in the local domain and the exchange program are covered in the three models. This means that models of alignment in collaborative environments have been more concerned to conceptualize alignment in collaborative environments, which propose methodologies to ensure the effectiveness of these concepts within complex collaborative processes.

Table 1.2 Analysis between the process of collaboration and strategic alignment models in collaborative environment

Phase of the enterprise collaboration process	Author, year		
	Pijpers et al., 2009	Santana et al., 2008	Derzsi & Gordijn, 2006
Definition and collaboration agreement	-	-	-
Planning in the local domain	/	/	/
Plan of exchange	/	/	/
Negotiation, exception handling and compensation system	-	-	-
Execution	-	-	-
Measurement of results and implementation of compensation plan	-	-	-
Feedback and review of the plan	-	-	-

1.6 Conclusions and future lines of research

Few studies have addressed the issues of enterprise collaboration and strategic alignment together. They have been proposed conceptual models or alignment frameworks in collaborative environments, however in most cases is lacking empirical evidence and practice of the effectiveness of these models.

There are more similarities than differences between the three alignment models proposed in collaborative environments, all components of conceptual models of collaboration are common to each other, agreeing the three models in the conception of the need for integrated objectives between partners collaboration, to facilitate joint value creation through the definition of integrated objectives that are supported by IS to achieve interoperability of the joint business and integration of individual processes.

The three models of alignment in collaborative environments have been comparatively analyzed from two different perspectives: the relationship of the models with the theories of alignment and relationship of the models with the collaborative process. The results of this analysis show that the models take into account in their structure all the conceptual aspects of strategic alignment, but the methodological aspects of the collaborative process are sorely lacking. This fact generates a possible line of research, seeking to extend the conceptual models of alignment in collaborative models that provide not only theoretical aspects but also practical aspects such as generating methodological proposals to guide the implementation of the alignment models in collaborative environments.

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