C-Business: A Theoretical Framework for the implementation of Co-opetition Strategy in E-Business

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Abstract

In today’s networked and knowledge-based economy, firms need to collaborate with their stakeholders with the use of Information and Communication Technologies (ICT). This type of alliance is called Collaborative E-Business (C-Business). In this paper, the authors examine whether firms can co-operate and compete at the same time (co-opetition), using a C-Business system, and whether this can lead to a co-beneficial relationship. Finally, a theoretical framework is presented on how C-Business and Co-opetition can be used to create value in a collaborative network, and thus create competitive advantages.

Keywords: C-Business; E-Business; Co-opetition; Competitive Advantage; Knowledge Management

1. Introduction

In today’s dynamic and uncertain economic and business environment, companies and organizations try to find new ways in order to achieve their strategic goals, and ensure their long-term success. Many of them form strategic alliances with their suppliers or customers in order to combine some of their resources and capabilities to gain a better position in the market and create competitive advantages over

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their competitors (Najmaei & Sadeghinejad, 2009). These alliances take various forms, including joint ventures, collaborative R&D projects, and joint marketing activities (Lavie, 2007; Lavie, 2009).

Moreover, the increasingly demanding external business environment underlines the need for the development and establishment of better relationships not only with organizations’ suppliers or customers, but in general with their stakeholders and even their competitors. The development of co-operative (cooperative and at the same time competitive) relationships between organizations could help them create competitive advantages (Afuah, 2000; Bengtsson & Kock, 2000; Dagnino & Padula, 2002; Gnyawali & Park, 2009; Ritala & Hurmelinna-Laukkanen, 2009; Wagner et al, 2010). These co-operative relationships could be developed with the support of Information and Communication Technology (ICT) infrastructure within an E-Business context.

The purpose of this paper is to present the concepts of C-Business and Co-opetition Strategy in order to present an integrated approach to the use of co-operative relationships for the creation of competitive advantages. Therefore, in this paper the authors examine whether organizations can cooperate and compete at the same time (Co-opetition) using a C-Business system, and whether this can lead to a co-beneficial relationship. Moreover, the authors present a theoretical framework on how C-Business and Co-opetition Strategy can be used to create value in collaborating networks, and how the participating organizations can create competitive advantages over their competitors.

2. C-Business

Collaborative E-Business (C-Business) is the integration of E-Business, knowledge management and collaboration technologies. It is a form of collaboration between organizations in which they form an alliance with the use of Information and Communication Technologies (ICT) in order to share and create knowledge. In this form of alliance the organizations remain autonomous, but also cooperate with each other (Thuraisingham et al, 2002).

C-Business can help organizations gain competitive advantages through connection and automation of processes with their partners, customers, and suppliers, the reduction of processing latencies, the development of new capabilities which would improve service levels while reducing costs, the growth of their assets and their markets, and the facilitation of information and knowledge sharing and exchange (Chen et al, 2007; Holsapple & Singh, 2000; Rowe et al, 2005).

Additionally, C-Business creates dynamic collaborations and transforms organizations’ information and knowledge base into a computer-based framework to support individualized access to potentially all participants within the alliance (Holsapple & Singh, 2000; Kim et al, 2006). This computer-based framework is primarily based on web-based technologies and services which enable organizations to collaborate and share knowledge (Zhang & Deng, 2008).

The main components of C-Business are described in the next subsections.

2.1. E-Business

The first component of a C-Business system is E-Business. E-Business is the transformation of vital business processes through the use of web-based technologies. It allows organizations to effortlessly
interact with customers, partners, and suppliers, providing them value-added customized services and
direct access to relevant information. Moreover, E-Business leverages organization’s network capabilities
and technologies to interact and transact with customers, suppliers, and employees in order to achieve and
sustain competitive advantages (Holsapple & Singh, 2000).

2.2. Collaboration and Collaborative Technologies

The second component of a C-Business system is collaboration and collaborative technologies. Collaboration is a process in which two or more parties work together closely in order to achieve mutually beneficial outcomes. It is a process that relies strongly on trust and commitment to values of honesty and equitable treatment (Miles et al, 2006). In collaborative environments organizations work with each other, share sensitive information and at the same time protect their privacy, and collaborate on activities and projects efficiently and effectively (Kim & Smari, 2005; Thuraisingham et al, 2002). Within such collaborative environments organizations can manage their knowledge efficiently and effectively (Kim & Smari, 2005).

According to Kim & Smari (2005) there are four (4) degrees of collaboration:

- **Communication**: The exchange of information.
- **Coordination**: Autonomous operation while coordinating information, activities and resource sharing.
- **Cooperation**: Share of information, activities, and service integration, while working to achieve the same goal between two or more organizations.
- **Collaboration**: Organizations working together to accomplish a task or collection of tasks.

Collaboration focuses on sharing information and knowledge, developing human resources, building partnerships and attaining inter-organizational synergies (Fairchild & Peterson, 2003). According to Thuraisingham et al (2002), effective collaboration is the key to knowledge management and good knowledge management practices are crucial for a successful e-business organization. Thus, collaboration is seen as a necessary strategy for the survival of many small firms, and a strategy that may enhance the competitive positioning of larger firms (Beckett, 2005).

Collaborative technologies allow organizations to communicate and collaborate with each other as they cope with the opportunities and challenges of cross-boundary work (Massey, 2008). Collaborative computing enables people, groups of individuals and organizations to work together with one another in order to complete a task or a set of tasks (Thuraisingham et al, 2002). Collaborative technologies consist of Information and Communication Technologies (ICT) which enable members to collaborate within virtual networks in forms of information and knowledge sharing and exchange (Gressgard, 2010; Massey, 2008). Such technologies are ERP systems, CRM systems, inter-organizational information systems, web services and applications, which allow unhindered knowledge and information sharing and exchange among the collaborating organizations (Chen et al, 2007; Massey, 2008).

2.3. Knowledge Management

The third component of a C-Business system is knowledge management. Davenport and Prusak (1998) defined knowledge management as a sum of processes to capture, distribute and effectively use knowledge, whereas Ruggles (1998) defined knowledge management as an approach of adding or creating
value by more actively leveraging the know-how and experience within and, in many cases, outside an organization (Carlucci et al., 2004).

Over the last years, many researchers have recognized the importance of knowledge management as a key factor in creating competitive advantages, and have tried to develop knowledge value chains to describe the processes that an organization must implement in order to create knowledge and thus value (e.g. Almarabeh et al., 2009; Carlucci & Marr, 2004; Holsapple & Singh, 2001; Tseng, 2009). Value chains provide a means of systematically identifying and evaluating an organization’s value adding processes and aligning them to build competitive advantages from its activities. Competitive advantage lies in an organization’s ability to identify and acquire knowledge from a strategic stance, and through knowledge dissemination, refinement, application and creation processes provide added value (Wang & Ahmed, 2005).

Effective knowledge management has become a vital issue for organizations, and is considered the main element for creating and sustaining their core competence capabilities. Due to the constant and rapid changes and the pressure of global competition, the business environment has become much more complicated. Therefore, organizations must maintain and utilize both internal and external knowledge in order to survive (Tseng, 2009). The development of knowledge sharing and exchange networks between organizations enables these organizations to communicate effectively, learn from each other, and thus create novel knowledge (Loebbecke & Angehrn, 2003).

3. Co-opetition Strategy

The term Co-opetition was first introduced by Raymond Noorda in 1993 as the need for simultaneous cooperation and competition, and it was developed in 1996 by Brandenburger and Nalebuff as cooperation between organizations when it comes to creating a pie and competition between organizations when it comes to dividing it up (Brandenburger & Nalebuff, 1996).

Co-opetition is a theory based on Game Theory. Business is considered as a game with multiple players and with multiple winners. In this game organizations have to understand their position and the position of other organizations in the same market. The success of an organization does not necessarily mean the failure of others. In contrast, organizations which compete in the same market may obtain more benefits at the end of the game and generate positive-sum games. Every business game has five parts: players, added value of each player, rules of the game (laws, contracts, etc.), tactics (players follow them to change the perceptions of other players), and scope of the business game (Brandenburger & Nalebuff, 1996).

In order to describe the interrelationships between different players of a business game, Brandenburger and Nalebuff (1996) developed a framework which includes the firm, its suppliers, its customers, its complementors and its competitors. This framework (Fig. 1) constitutes a network of co-opetitive relationships in which organizations play multiple roles and search for complementary partners to create value. These complementary partners are defined as players whose products are valued more when they are combined. For example, a software firm needs a hardware firm to improve and promote its products or services.
According to Bengtsson and Kock (2000), co-opetition can occur between two direct competitors when they are collaborating in not related to the customer activities and simultaneously competing for market share (e.g. cooperating R&D departments designing a new product, and simultaneously compete in the same market). Organizations participate in such complex and dynamic relationships due to their inability of generating and developing products or services by themselves caused by increasing R&D costs, high risks, and limited resources and capabilities. Therefore, it is important for organizations not to cooperate only with their suppliers, customers and complementors, but also with their competitors.

The implementation of co-opetition strategy has both benefits and costs for the participating organizations. The benefits from a co-opetitive relationship are scale economies, uncertainty and risk reduction, and product development acceleration. On the other hand, the costs are technological risks, management challenge and loss of control. (Gnyawali & Park, 2009; Lavie, 2007)

Organizations implementing co-opetition strategy cooperate through knowledge and resource transfer to create value. This is considered a collective action. Subsequently, they compete to exploit and appropriate the generated value. This is considered an individual action. Consequently, they have common interests when it comes to value creation and diverse interests when it comes to value appropriation. Value creation, which derives from cooperative activities, is the total net value created collectively in joint innovative efforts when combining the assets of different stakeholders, whereas value appropriation, which derives from competitive activities, depicts the net value that a focal organization claims successfully, and therefore is the individual share of the value that a firm can capture from the generated value – knowledge (Ritala & Hurmelinna-Laukkanen, 2009; Wagner et al, 2010).

According to Dagnino & Padula (2002), co-opetition integrates cooperation and competition when organizations have partially convergent interests in order to create novel value. Moreover, the interrelationships between different organizations create a co-opetitive system of value creation. Through this system organizations exchange and create value to become more competitive and gain competitive advantages over other competitors.

Additionally, Dagnino & Padula (2002) defined two types of co-opetitive relationships for value creation; dyadic and network relationships. Dyadic co-opetition refers to the relationship between two competing business organizations along one or more levels of the value chain. Network co-opetition
refers to the relationships between more than two organizations which cooperate and compete at the same time along one or more levels of the value chain (Katsanakis et al., 2011).

Example of dyadic co-opetition is the joint venture between Sony and Samsung for the development and production of the 7th generation LCD panels for flat screen TVs. They combined their strengths in order to extend the flat screen industry (collective action) and increase their market share (individual action) (Gnyawali & Park, 2011). Another example of dyadic co-opetition is the joint venture between PSA Peugeot-Citroën and Toyota for the manufacturing of 107, C1 and Aygo. They developed a common manufacturing unit, reducing R&D and manufacturing costs, and at the same time they competed in the same market (Kapferer, 2008). Example of network co-opetition is the case of SAP, an ERP software provider, which has developed a business ecosystem with vertical, horizontal and transversal relationships in order to create synergies with its clients, its providers, research institutions and other organizations. The ecosystem was beneficial for all participating organizations (Pellegtin-Boucher & Gueguen, 2004).

Summing up, Co-opetition Strategy suggests that organizations should form simultaneous cooperative and competitive relationships in order to combine their complementary strengths in terms of resources, knowledge or capabilities and produce synergies for the creation of collective and individualized value (Afuah, 2000; Bengtsson & Kock, 2000; Dagnino & Padula, 2002; Gnyawali & Park, 2009; Lavie, 2009; Ritala & Hurmelinna-Laukkanen, 2009; Wagner et al, 2010.).

4. Implementing Co-opetition and C-Business: A theoretical framework

In this section, the authors propose a theoretical framework with which organizations could implement Co-opetition Strategy in E-Business. This framework depicts, in a simple and logical way, how organizations could collaborate within an e-business context to create and appropriate value.

According to this framework (Fig. 2), organizations within and beyond the value chain, create a virtual network in which, with the support of collaborative technologies, are cooperating in order to create value. This virtual network includes the interactions between suppliers, buyers, direct competitors (competitors and substitutors) and indirect competitors (complementors, research institutes, etc.). The value is created via knowledge exchange, creation and transfer from the collaboration established within this virtual network. This collaboration is originated from the organizations’ co-opetition strategy, enhanced with the value creation process (Katsanakis et al., 2011; Kossyva et al., 2011).

To describe how value is created through knowledge creation, the authors use an adapted knowledge value chain based on Wang and Ahmed’s knowledge value chain (Wang & Ahmed, 2005). This circular knowledge value chain includes the following knowledge management processes:

- **Knowledge creation**: The development and production of new knowledge, originated from the collaboration of the participating in the virtual network organizations.
- **Knowledge identification**: The search and discovery of information and knowledge within the collaborative virtual network.
- **Knowledge acquisition**: The attainment of identified knowledge within the collaborative virtual network from the participating organizations.
- **Knowledge dissemination**: The diffusion of the available knowledge within the collaborative virtual network.
Knowledge transfer: The reassign of the available knowledge within the collaborative virtual network.

Knowledge application: The application of the knowledge created or exchanged within the collaborative virtual network.

The above sequence of processes represents a continuous flow of knowledge creation occurring within the collaborative virtual network. The knowledge created is collective, and essentially represents the overall value created from the collaboration of the participating in the virtual network organizations.

After the creation of the collective knowledge, originated from the collaboration between the participating in the virtual network organizations, every participating organization can utilize the generated value for the creation of individualized value. This depends on each organization’s knowledge absorption capacity, which varies from organization to organization. Absorption capacity is defined as the dynamic capacity that allows firms to create value and gain a sustainable competitive advantage through the management of external generated knowledge (Camison & Fores, 2010). Thus, every organization based on its absorptive capacity, can appropriate value in order to create its own sustainable competitive advantage.

Fig. 2. Theoretical framework for the implementation of Co-opetition Strategy in E-Business

5. Conclusion

In today’s networked and knowledge based economy, organizations should collaborate with their stakeholders with the use of Information and Communications Technologies in order to achieve their strategic goals, and ensure their long-term success. This type of alliance is called C-Business.

Co-opetition Strategy can be used by organizations within a collaborative E-Business (C-Business) context to create value with their stakeholders, even their competitors. These virtual networks can help organizations collaborate to create collective knowledge, and subsequently appropriate the generated value to create individualized competitive advantages.
A theoretical framework for the implementation of Co-opetition Strategy within the context of C-Business was presented. According to this framework, organizations should cooperate with their stakeholders and their competitors within a virtual network to exchange and create collective knowledge with the use of collaborative technologies. The value is created via knowledge exchange, creation and transfer from the collaboration established within this virtual network. After the creation of the collective knowledge, originated from the collaboration between the participating in the virtual network organizations, every participating organization can utilize the generated value for the creation of individualized value based on each organization’s knowledge absorptive capacity.

This paper is only a part of the authors’ attempt to study through literature the implementation of Co-opetition Strategy in E-Business. A future aim is to examine the relationships created within the collaborative virtual network and their impact on the generated collective knowledge. Another future aim is to examine how the collective knowledge can be absorbed by each participating organization to create knowledge for individual purposes. Moreover, the authors suggest further examination of the above theoretical approaches with empirical data, in order to establish these approaches and concepts.

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References


