

# ISSUES OF TRUST AND COMMITMENT IN COLLABORATIVE COMMERCE

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## ABSTRACT

*This paper discusses factors that affect the creation of trust and commitment in collaborative commerce (c-commerce). It also discusses decisions that organizations must make when applying c-commerce applications. The goal of the paper is to propose a model to describe the building process of trust and commitment in the context of c-commerce.*

**Keywords:** collaborative commerce, c-commerce, trust, commitment, e-commerce.

## INTRODUCTION

A new type of enterprise application software, called collaborative commerce (c-commerce), is currently changing the way business partners work together. C-commerce software enables companies to exchange proprietary data, jointly manage projects, and cooperate on the design of new products across divisions and across companies. According to a report (2), the size of the c-commerce market would grow from \$5.8 billion in 1999 to \$36.5 billion in 2004 (estimated by AMR and IDC). Successful cases of c-commerce have been reported in various industries, such as the aviation and aeronautics, automobile manufacturing, and telecommunications. Recent research indicates that, among others, trust and commitment between business partners are two important factors for the success of c-commerce. Trust and commitment could be existent in a well-established relationship between business partners, and consequently companies that have a long history of partnership could immediately reap the benefits of c-commerce by taking the advantage of opportunities enabled by c-commerce technologies. Meantime, those companies with no long-term, committed partners should consider the issues that might affect the creation of trust and commitment before they adopt c-commerce. This paper presents a model that addresses those issues when applying c-commerce. The goal of the article is to propose a model to describe the building process of trust and commitment in the context of c-commerce.

## BACKGROUND

The globalization of economy and increasing demands from customers are gradually changing businesses' views of competition and cooperation. Competition occurs not only among individual firms, but also among supply chains or coalitions. Companies in a coalition or in a supply chain of products that are substitutes for each other may need to cooperate to compete. Also, cooperation occurs not only among business partners, but also among competitors. For example, in order to develop compatible products, it is not unusual that software vendors collaboratively work together to develop industry standards or protocols.

A supply chain can be created in four different forms (9). The first form of a supply chain is created through open market negotiations. This is usually price-based and legal binding.

Penalty is often used as an enforcing mechanism of contracts. The duration of such a relationship is short, if not one-time, and the relationship is often adversarial. The second form of a supply chain is created through cooperation of organizations in which there are usually only a few select partners. Such a cooperative relationship is upheld by a relatively long-term contract. The third form is created through coordination among organizations by integrating information and workflow with mechanisms such as Just-In-Time (JIT) and Electronic Data Interchange (EDI). The last form of supply chain is created through collaboration in which partners need to share not only information but also a common vision of the future. Supply chain integration, joint planning and technology sharing should be achieved in this form. Collaboration may take place in many aspects of business, such as joint product development and knowledge management among partners. Due to the need for supporting such a collaborative relationship, business pioneers are experimenting emerging technologies.

C-commerce is a new special type of electronic commerce (e-commerce) and is different from traditional e-commerce in several aspects. The traditional e-commerce focuses on supporting business transactions and the exchange of structured data. For example, it supports searching for products, price discovery and comparison, availability check, and order matching, as well as auctions. It also used for product routing, credit approval, compliance, and verification, as well as management of documents associated with business transactions. In contrast, c-commerce offers plenty of opportunities for supporting intellectual effort among business partners, including supplier and customer relationship management, knowledge sharing and joint product development and planning, in addition to those functions done by the traditional e-commerce.

C-commerce is also different from Enterprise Resource Planning (ERP), from traditional Supply Chain Management (SCM) and from Customer Relationship Management (CRM) systems in several aspects. ERP, SCM and CRM focus on optimizing machine-to-machine interactions about well-defined logistics of well-defined products (11). Compared to ERP, SCM, and CRM, c-commerce focuses on supporting inter-company human collaboration in uncertain business of inventing, designing, developing, deploying and supporting new products and services, while negotiating the legal and financial conditions required by the interaction (11). C-commerce also includes technology called "Interaction Technology" to promote trust, as people see others regularly keeping their promises (11).

C-commerce enables businesses to perform tasks beyond transaction processing, such as structuring knowledge sharing and structuring community (1). Businesses could employ c-commerce to empower their employees with knowledge about customers, technical solutions and sales skills. C-commerce also enables competitors and partners to work along the product life cycle from designing, to raw material acquisition, to manufacturing, to marketing, and to selling and after-sale service support. Furthermore, businesses could adopt c-commerce to achieve cost-effectiveness and efficiency by teaming-up complementary partners and by outsourcing part of business processes previously performed in-house (11). Because collaboration could occur in mission-critical business processes, trust and commitment among partners critical to the success of c-commerce could have significant impact on the organizational performance.

Trust and commitment are premises for establishing a collaborative relationship (9). Trust could be broadly defined as the belief that others will act or react in a predictable way (6). Trust is

important for the creation of partnership because it could reduce uncertainty and provide a certain extent of assurance for managers' decisions. Trust and commitment are a relative concept. Just like relationships between individuals, relationships between companies begin, grow and develop (5). The level of trust and commitment grows following the development process of relationship between two parties. The trust level built from an acquaintance is presumably lower than that acquired from a friendship. The level of trust and commitment will determine the level of involvement that one party is willing to engage with another party and as a result, it will indirectly determine the level of c-commerce that one party would like to establish. Traditionally, physical proximity and human interaction are driving forces of establishing trust and commitment. However, the trust building-process based on these two forces is lengthy and partners are geographically limited. There are two conflicting views regarding relationship between the use of information technology and the establishment of trust. Some view that broad-access computerized information system substitutes for lengthy trust-building process (7), while others think that trust must be established first to effectively use c-commerce (11).

### ISSUES OF TRUST AND COMMITMENT

This section discusses issues of trust and commitment in c-commerce. When an organization applies c-commerce software, there are several decisions it must make to address the issues of trust and commitment. Those decisions include:

- What services does it want to outsource to or receive from partners?
- How deep and wide does it want to extend its supply chain group?
- How flexible is its supply chain in terms of configuration of partnership?
- How much does its group want to accept partners from different cultures?
- How many existing partners does it want to include in a group?
- How soon can it allow establishing trust and commitment with new partners?
- How does it want to establish trust and commitment?

We consider those decisions in a trust and commitment building model for c-commerce (Figure 1).

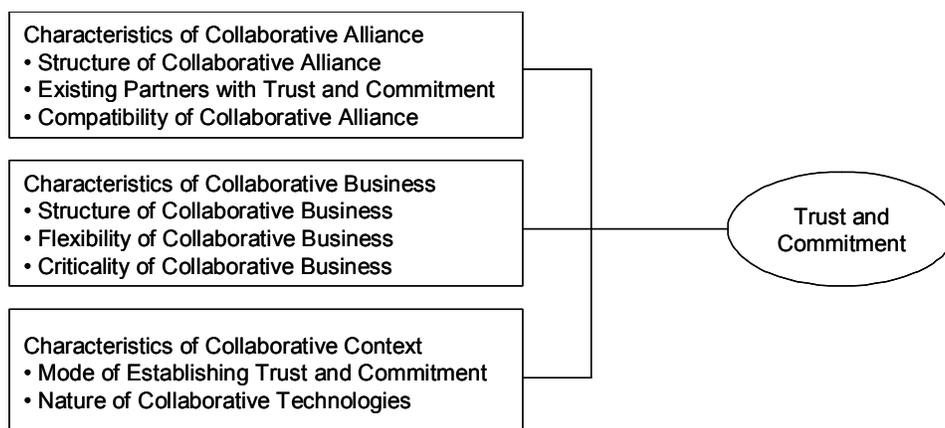


Figure 1. A Trust and Commitment Building Model for C-Commerce.

#### Issues on Characteristics of Collaborative Alliance

Collaboration may exist in different forms, such as vertical, horizontal or hybrid collaboration. An example of vertical collaborations is that when companies located in the upstream and downstream of a supply chain work together to improve the efficiency of goods, payment, and information flows. A horizontal collaboration occurs when competitors in an industry or companies in different industries work together to accomplish a mission they agreed upon (e.g., development of product specification or establishment of electronic marketplace). The characteristics of a collaborative alliance have a profound impact on the process of building trust and commitment. Organizational sociologists (e.g., 3, 10) assert that organizational field or domain that is specific to collaboration shapes the organizational behavior. Organizational field refers to a recognized space of institutional life that consists of suppliers, consumers and other stakeholders. Consequently, we assert that companies should examine the characteristics of their collaborative alliances and understand what might facilitate or inhibit the creation of trust and commitment.

Structure of Collaborative Alliance

Figure 2 depicts an organizational field from which a firm could possibly establish a collaborative alliance. Due to the traditional mindset of competitiveness, vertical collaboration seems to be more common than horizontal collaboration. However, because vertical collaboration usually occurs in a mature market, it tends to be perceived as a zero-sum game. This implies that the collaborative effort needs to be oriented towards changing the zero-sum perception to positive-sum perception so that the trust and commitment can develop. In contrast, the positive-sum perception might be the major reason for competitors to collaborate. This implies that while trust and commitment could be a major issue in the relationship, the collaborative effort could be oriented toward the implementation of collaborative business.

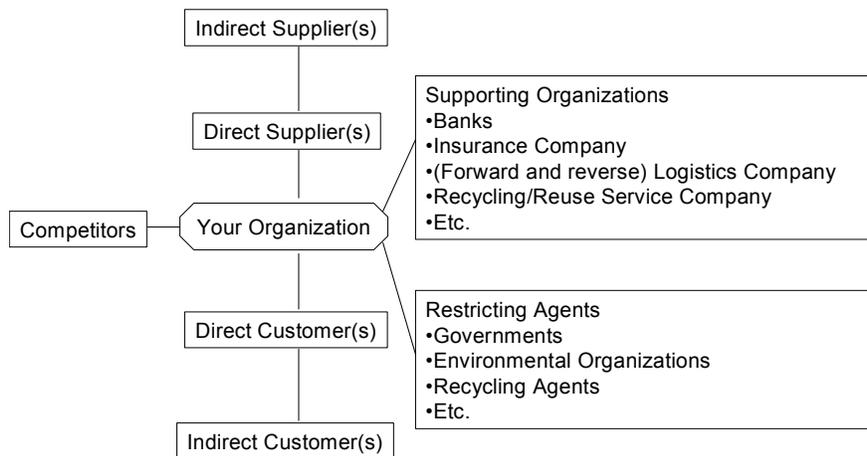


Figure 2. An Illustration of Organizational Field

Existing Partners with Trust and Commitment

Another factor is regarding the expansion of an existing collaborative alliance. Because of the efficiency of c-commerce software, it is not unusual that when considering employing c-commerce systems, an existing partnership will consider including more players to join. In this case, it is critical to consider how many of partners in a group have already established trust and commitment level before a c-commerce system is adopted. With more partners having established trust and commitment level, a success rate of c-commerce application is high. Many

research studies conclude that trust needs to be established before applying a technological solution such as e-commerce.

### Compatibility of Collaborative Alliance

The globalization of economy brings in another issue in establishing trust and commitment. As companies seek for the best-of-breed worldwide, those potential partners might be from different cultures. Different cultures mean different customs, levels of expectation, levels of decency, levels of honesty, and informal rules. Difference in those aspects might increase the difficulty level of collaborative efforts. While a formal governance structure might attenuate the effect of the difference, the impact of incompatibility of different cultural backgrounds should not be understated.

### **Issues on Characteristics of Collaborative Business**

C-commerce provides companies with many opportunities for collaboration ranging from CRM, SCM, knowledge management, and joint product development to community development. The nature of collaborative business will impact the level of trust and commitment. We discuss how the structure, flexibility, and criticality of collaborative businesses affect trust and commitment.

### Structure of Collaborative Business

Structure of collaborative business refers to two conceptually separated, yet practically related concepts. The first concept refers to the structuredness of collaborative effort. The second concept means the relative relationship of individual effort of collaborative alliances. For example, when one company uses e-commerce to outsource part of business processes previously performed in-house, the outsourcer might be capable of performing the outsourced part with its own know-how. Or, the outsourcee might need to share its know-how with the outsourcer. It is obvious that the two different scenarios will have different impacts on the development of trust and commitment.

### Flexibility of Collaborative Business

A highly competitive market requires a flexible supply chain to accommodate changes in customer needs. There are three possible ways to maintain the flexibility of a collaborative alliance. The first alternative is to enhance the capability of existing partners of a supply chain through training and education. This alternative works when customer needs gradually change and high level of trust and commitment exists in the alliance.

When changes in customer needs are dramatic, external capacity might need to be acquired by inviting new partners who are capable of coping with the changes. Finally, another alternative is to replace a partner who is no longer significant with a new partner as necessary. The alliance will be very flexible in this manner; however, trust and commitment level in this type of group could be low.

### Criticality of Collaborative Business

One fundamental principle of outsourcing is that a firm should not outsource its mission-critical applications. However, as benefits of collaboration outperform the risk or technology brings new opportunities, companies may be more willing to collaborate on projects that previously

were performed in-house due to the criticality of the projects. As a result, companies need to factor in the criticality of collaborative business when considering c-commerce.

### **Issues on Characteristics of Collaborative Context**

The context of collaboration should be taken into account when considering c-commerce. Contextual factors include modes of establishing trust and commitment, and types of collaborative technologies. To establish trust, it may be critical to achieve appropriate fitness among tasks, collaborative technologies and technology-readiness of users.

#### Mode of Establishing Trust and Commitment

Face-to-face human interaction is the traditional method to establish trust. People learn to trust others by noting their behaviors. Fulfilling promises earns trust between transaction parties (11). Partners may want to use the traditional physical interaction mode to establish trust before adopting c-commerce technology. Meantime, interaction technology can be used to establish trust if no history of experience-based trust exists (11). Rich features of c-commerce software, such as brainstorming, bulletin board, threaded discussion, can help to structure community (1). Co-browsing, screen sharing, and application sharing can be also used to create computer-mediated interactions among partners. Those features are helpful to establish trust and commitment among geographically dispersed partners. However, the readiness of partners for using such technologies should be taken into account.

#### Nature of Collaborative Technologies

C-commerce requires the integration of several technologies. Those technologies include application components that support value chain activities, and collaborative technologies, such as virtual meeting, brainstorming, discussion board, whiteboard, instant messaging, and screen and application sharing. Several c-commerce vendors, such as J.D. Edwards, Oracle, SAP, PeopleSoft, and IBM, provide their solutions to the integration of application components and collaborative technologies.

The use of EDI and integration of different ERP components could be very time-consuming and costly. IBM and Lotus proposed the use of messaging and collaborative platform, Lotus Domino, as a solution to this situation (8). Also, the use of Web Service as a core integration infrastructure engine was proposed as a solution to the integration issue (4). This method allows a plug-and-play platform for various application-building components. Different integration methods result in different levels of switching costs incurred to participants, affecting a commitment and trust level of participants.

### **SUMMARY**

The creation and sustainment of a collaborative relationship involves tremendous investment in resources and commitment. The relationship is usually not temporary. Our position is that those partners that progressively go through several stages of the trust-building process over time will have greater success possibility of applying c-commerce software because they could gradually cultivate skills and techniques for managing their partnership using this new technology. Meantime, we believe that some factors offer opportunity for companies to engage in a higher

level of collaboration without going through a lengthy process using this new technology. This paper identified several issues regarding trust and commitment when a group of organizations is planning to apply c-commerce software. We are currently preparing a research study that addresses the following issues:

- What enables and/or inhibits establishment of trust and commitment through c-commerce software?
- How an IT-enabled partnership evolves from one stage to another?
- What causes the evolution of intra-stage process and how the intra-stage process evolves?
- What functionality of the software helps to build a collaborative commerce?

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