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Stakeholder Relationships and Electronic Commerce Differentiation: A Preliminary Investigation in Singapore and Australia

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Abstract
This paper examines a typology of Electronic Commerce and uses this typology to examine the role and nature of stakeholder relationships in the practices of Electronic Commerce. Studies from Singaporean and Australian SMEs are used to provide examples of the nature of these relationships. This paper also suggests a framework that uses stakeholder relationships to differentiate between the two major types of Electronic Commerce, namely Business-to-Consumer Electronic Commerce, and Business-to-Business Electronic Commerce, arguing that the nature of stakeholder relationships presents a more understandable expression of the nature of the business transaction rather than differentiation of business actions by the more usual acceptance of the exchanged product or service. This paper contributes to Electronic Commerce research by highlighting the importance of inter-stakeholder relationships, and using such relationships as the units of analysis for empirical studies.

Keywords: Electronic Commerce; Electronic Markets; Interorganizational Relations; Buyer-Supplier Relations.

1. Introduction

Electronic Commerce is often associated with the buying and selling of consumer products over the Internet. While this narrow definition of Electronic Commerce is not incorrect, there are many other commerce and business activities that also fall under the term “Electronic Commerce”. The stakeholders who create commerce, either actively or passively construct and determine the nature of the commercial relationship. The aim of this paper is to suggest the Electronic Commerce Differentiation Framework, which uses the nature and activities of stakeholders to distinguish between the two major types of Electronic Commerce, namely Business-to-Business (B-to-B) Electronic Commerce and Business-to-Consumer (B-to-C) Electronic Commerce. This framework will use examples of Electronic Commerce in Small and Medium Enterprises (SMEs) in Singapore and Australia. The study was carried out in these two countries over a period of four months in 1999.

Electronic Commerce has captured the attention of businesses large and small, government officials, academics, and the greater public, due to its rapid growth in recent years and the amount of money it commands. According to a recent forecast by the GartnerGroup, the global market for B-to-B Electronic Commerce alone is expected to rise from US$145 billion in 1999 to US$7.29 trillion in 2004 (GartnerGroup, 2000). While not being overwhelmed by such forecasts and statistics (OECD, 1999), Electronic Commerce is a phenomenon that
promises to impact business operations, government policies, consumer buying behavior, and many other elements of the modern society.

The definition of Electronic Commerce is still indeterminate (Clarke, 1998; DCITA, 1999; USDC, 1999). For the purpose of this paper, Electronic Commerce includes commerce and business activities that are performed over electronic networks (both fixed and mobile networks), including upstream and downstream supply chain activities, and consumer purchases that are initiated through electronic means. The different types of Electronic Commerce activities are essentially determined by the stakeholders involved. A review of existing literature in Electronic Commerce (Kalakota and Whinston, 1996; Lawrence et al., 1998; Rangan and Bell, 1998; Riggins and Rhee, 1998; Whinston et al., 1997) identified the two major types of Electronic Commerce as Business-to-Business Electronic Commerce, and Business-to-Consumer Electronic Commerce. Creating a framework for distinguishing the two types of Electronic Commerce activities aids in identifying and understanding the stakeholders involved, the roles they play, the nature of electronic commerce relationships, and the potential benefits to different stakeholders. It is hoped that the outcome of this study will enable businesses to formulate strategies to align their business operations more closely with Electronic Commerce strategies, thus improving the management of resources like raw materials, labor, capital, and entrepreneurship.

This study draws on Electronic Commerce examples in Singapore and Australia as these two countries are considered early adopters of technological innovations in the region.

2. Literature Review and Research Framework

On the surface, the two identified categories of electronic commerce (B-to-B and B-to-C) appear to share the similarity of using electronic networks to enable commerce activities. However, a more detailed analysis will highlight where the similarities end, and what the distinguishing features are. This paper thus proposes the Electronic Commerce Differentiation Framework for distinguishing and categorizing the two major categories of Electronic Commerce. Figure 1 illustrates how the Electronic Commerce Differentiation Framework is used for differentiating B-to-C and B-to-B Electronic Commerce relationships. The three criteria for differentiation are stakeholder characteristics, transaction characteristics, and stakeholder relationship characteristics.

2.1 Stakeholder Characteristics

In this section, we intend to gain an insight into stakeholder characteristics like the number of stakeholders, location and dispersion of stakeholders, and the business nature of stakeholders.

In B-to-C Electronic Commerce, the primary participants are members of the public who form the customer base, and the retailers, who sell the products via an electronic storefront. Buyers in B-to-C Electronic Commerce purchase products for their own consumption. B-to-C sellers may target buyers in the local geographical proximity, or those distributed across time, geographical and national boundaries. Sellers in B-to-C Electronic Commerce are retailers, distributors, resellers, or even the product manufacturer itself. Examples of manufacturers who sell products direct to consumers via an electronic storefront are Dell.com\(^1\) (Rangan and Bell, 1998), and Toyota Australia\(^2\). These organizations bypass their traditional distribution

\(^1\) Dell.com, URL: http://www.dell.com
\(^2\) Toyota Australia, URL: http://www.toyota.com.au
channels by selling direct to the public. The manufacturers themselves will have to get involved in promoting and marketing the products. Consumers tend to buy direct from manufacturers’ electronic storefront when they are able to enjoy reduced price, good customer service, or simply have faith in the product/brand.

![E-Commerce Relationships Diagram]

Figure 1. The Electronic Commerce Differentiation Framework

On the other hand, many B-to-C businesses consist of resellers and distributors selling consumer goods and services to consumers electronically. These B-to-C businesses may have an existing brick and mortar storefront, or may exist electronically only. Examples of B-to-C retailers that maintain both brick and mortar and virtual storefronts are NTUC-FairPrice in Singapore and the Dymocks Booksellers—book retailer in Australia. B-to-C Electronic Commerce pioneers like Amazon.com and CDNow are virtual retailers which do not maintain a brick and mortar storefront.

Very often, B-to-C Electronic Commerce retailers band up together and operate from an electronic shopping mall. In this way, they increase their exposure to the public, as well as benefit from cross-promotion and providing one-stop shopping to customers; the very same idea which has led to the boom of shopping complexes and malls in the 20th century. Examples of electronic shopping malls are Telstra’s “The Arcade” in Australia, and the Yellowpages Electronic Mall in Singapore. Many of these shopping malls provide additional services like transaction processing facilities.

3 NTUC-FairPrice, URL: http://www.ntuc-fairprice.org.sg
4 Dymocks Booksellers, URL: http://www.dymocks.com.au
In contrast, B-to-B Electronic Commerce usually involves trading partners that are located in the same geographical region. Members of the supply chain may use B-to-B Electronic Commerce technologies like Electronic Data Interchange (EDI) and Extranets to link up their inventory management systems or accounting systems. More often than not, B-to-B Electronic Commerce participants are traditional businesses which use Electronic Commerce technologies to trade. As such, B-to-B Electronic Commerce involves electronically linking manufacturers, suppliers, distributors, retailers, service providers and financial institutions. In more recent years, electronic marketplaces for B-to-B purposes has been developed to provide a trade and exchange facility for the respective industries. In Australia, the Pharmaceutical Extranet Gateway (PEG) provides a marketplace for hospitals, clinics, pharmacies and, of course, the pharmaceutical suppliers, to trade. Other similar B-to-B electronic marketplaces are the Automotive Network eXchange (ANX) (AIAG, 1999) for the automotive industry, and Chemdex for laboratory products, both of which are highly successful B-to-B electronic marketplaces in North America.

2.2 Transaction Characteristics

This study also intends to gain an insight into transaction characteristics like transaction volume, frequency, monetary value, and the item being exchanged between stakeholders in Electronic Commerce. Starting with the B-to-C scenario, transactions are expected to be low-volume, or once-only events. Unless buyers use the electronic storefront to purchase day-to-day products like groceries, they are unlikely to use B-to-C Electronic Commerce to purchase consistently, or at regular intervals. The dollar value of each B-to-C transaction is expected to be lower than that of B-to-B transactions.

Typically, B-to-C Electronic Commerce activities consist of the sales and purchase of consumer goods like toys, compact discs, and stationery products. Digital products (Tolrina et al., 1999; Whinston et al., 1997) like computer software, and electronic magazine subscription make up the rest of B-to-C Electronic Commerce. Innovative B-to-C Electronic Commerce in recent years includes the distribution of sample goods to consumers for evaluation prior to the actual purchase. For example, a sample audio track of the latest music album can be downloaded (Wang and Chong, 1999), or an evaluation copy of the software can be downloaded and used for a limited period of time. Other B-to-C Electronic Commerce activities include consumers obtaining product specifications, and participating in online share trading, confirming payment, tracking product delivery, obtaining after-sales service, and B-to-C electronic auctioning (e.g. eBay Australia, and Yellow Pages Auction), although electronic auctioning is also rife in the B-to-B Electronic Commerce arena (Kambil and van Heck, 1998).

In contrast, B-to-B Electronic Commerce usually involves the exchange of information among trading partners. Distributors may access a supplier’s Extranet to check production levels, inventories, and delivery details. As such, the B-to-B transactions are of greater volume, and occur at fixed and close intervals. For convenience, cost-effectiveness, and to save time, many businesses also use B-to-B Electronic Commerce to present and bid for tenders. Incidentally, the monetary value of B-to-B Electronic Commerce transactions is

7 Pharmaceutical Extranet Gateway, URL: http://www.pecc.org.au
8 Automotive Network eXchange, URL: http://www.anxo.com
9 Chemdex, URL: http://www.chemdex.com
10 eBay Australia, URL: http://www.ebay.com.au
11 Yellowpages Online Bidding, URL: http://www.ebid.com.sg/ypa
relatively higher than that of B-to-C Electronic Commerce. In addition, many B-to-B transactions are automated and require minimal human intervention. Instead of engaging store managers and sales personnel to check the inventories and manually key in purchase orders, many B-to-B electronic commerce systems are integrated with point-of-sale (POS) systems, enabling inventory information to be updated automatically, and orders for new stock generated when inventories drop below the stipulated level. The development and advances in B-to-B Electronic Commerce have catalyzed and enabled many supply chain initiatives like Just-In-Time (JIT) manufacturing, Vendor Managed Inventory (VMI), and Quick Response (QR) retailing. B-to-B Electronic Commerce is also used extensively in the banking sector. Increasingly, organizations are using B-to-B Electronic Commerce to purchase digital products like computer software, and to obtain commercial services (e.g. mySAP.com12-B-to-B portal).

2.3 Stakeholder Relationship Characteristics

Stakeholder relationship characteristics refer to the nature and characteristics of relationships between sellers and buyers in Electronic Commerce. Although existing work in Electronic Commerce (Bensaou, 1997; Kalakota and Whinston, 1996; Kambil and van Heck, 1998; Kumar and van Dissel, 1996; Lee et al., 1999; Mukhopadhyay et al., 1995; Whinston et al., 1997) highlights the characteristics of stakeholder relationships, few actually use stakeholder relationships to distinguish B-to-B and B-to-C Electronic Commerce. Elements in stakeholder relationship characteristics are: formation, structure, nature, complexity of relationships, uncertainty, trust, inter-stakeholder reliance, duration, and industry-wide relationships.

In B-to-C Electronic Commerce, the electronic storefront has to attract potential customers, encourage customers to purchase, and if possible, encourage customers to make future purchases. The relationship is formed when customers decide to make a purchase. Since customers are the end-users of the product, the relationship between the buyer and seller is more intimate and personal than in the B-to-B scenario. The retailer has to gather information like personal preference, liking, financial capability, delivery, and payment methods from the customer. Essentially, the retailer has to build-up trust and confidence with customers by giving them assurance of product quality and satisfaction. The intimate and personal information that retailers obtain allows them to provide customized, one-to-one service to customers, using a strategy known as micro-marketing. The uncertainty level in B-to-C relationships is higher than that in B-to-B. This is especially true in terms of product quality uncertainty because consumers who are purchasing physical goods electronically may not have the opportunity to visit a showroom or salesperson for product inspection or trial. Uncertainty in product availability and payment is also a big issue in B-to-C Electronic Commerce.

The duration of many B-to-C relationships is short to medium-term. In fact, a B-to-C relationship may be a once-only event since buyers are not obliged to return to the same seller if they are not satisfied the first time. The inter-stakeholder reliance in B-to-C Electronic Commerce is also expected to be lower than that in B-to-B Electronic Commerce. An individual customer does not represent a huge portion of income to a retailer, and an individual retailer is not the sole supplier of the product to the customer. Benefits arising from using B-to-C Electronic Commerce usually flow to individual consumers, or the individual retailer.

12 mySAP.com, URL: http://www.mysap.com
On the other hand, stakeholder relationships in B-to-B transactions have several distinguishing features. According to an industry contact, “Business-to-Business Electronic Commerce is about using electronic means to maintain and manage existing trading relationships.” Many B-to-B Electronic Commerce relationships are expected to be based on existing trading relationships. As a higher volume of products is transacted in B-to-B Electronic Commerce, B-to-B relationships require a higher level of trust between the transacting parties. Buyers and sellers need to have prior agreements and contracts to agree and guarantee product quality, shipment schedule, payment, and future transactions. B-to-B Electronic Commerce thus becomes the platform on which these pre-agreed terms of trade are carried out. Regarding the structure of B-to-B relationships, four structures (as shown in the following) suggested by Clarke (1998) will be investigated.

(a) 1-to-1 relationships (interorganizational systems),
(b) 1-to-1-to-1 relationships (cascading systems),
(c) 1-to-n relationships (hub and spoke systems),
(d) and m-to-n relationships (networking systems)

As for the nature of B-to-B relationships, they are expected to be more impersonal than is the case for B-to-C. The transacting parties – the stakeholders, represent businesses. Security in B-to-B Electronic Commerce becomes a major issue when organizations give trading partners access to their internal information system. Personal preference and liking have less influence on B-to-B transactions because B-to-B transactions are bound by agreements, company policies, and legislation. Consequently, the complexity of the B-to-B relationship is high, and such B-to-B relationships are expected to last for medium to long-term. Businesses will find it costly and inconvenient to form and terminate B-to-B relationships quickly, hence increasing the barriers to entry and exit to B-to-B relationships.

B-to-B Electronic Commerce tends to reduce a lot of uncertainty in inter-organizational relationships. Once contracts and agreements are put in place, the B-to-B electronic commerce system has difficulty in telling the organizational size of trading partners. Big players cannot bully smaller players using tactics like delaying payment or shipment. Trading partners can use B-to-B Electronic Commerce to track and change transaction processes, thus, late delivery and payment may result in instantaneous penalties. Suppliers are encouraged to deliver promptly to get prompt payments. Customers are pressured to pay promptly as B-to-B Electronic Commerce supports and enhances debt-tracking. With B-to-B Electronic Commerce, trading partners have the ability to foresee shortfalls in supplies, and then source from alternative suppliers. Incidentally, B-to-B Electronic Commerce tightens the coordination and level of integration among trading partners, enabling them to operate with less inventories, leading to more efficient production runs, and increasing the flexibility and responsiveness of the supply chain. The inter-stakeholder reliance in the B-to-B environment is expected to be much greater than that in B-to-C.

Stakeholder relationship in B-to-B Electronic Commerce promises to have an impact on industry-wide practices as well, with benefits expected to be distributed among various stakeholders. In B-to-C Electronic Commerce, businesses compete for customers, leading to increased customer satisfaction. The flow of benefit is greater from seller to buyer than vice versa. However, in the case of B-to-B Electronic Commerce, a win-win scenario is more

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13 Personal communication with a supply chain manager of a major electronics component company in Australia.
obvious. According to a study by the Automotive Industry Action Group (AIAG 1999) in USA, if EDI is implemented in the entire supply chain, US$1 billion could be realized industry-wide. eSteel is another example of a B-to-B Electronic Commerce initiative which provides industry-wide benefits. Small and medium enterprises stand to enjoy reduced telecommunication costs, while the major players stand to enjoy reduced transaction processing costs.

Table 1 summarizes the differentiation criteria, and elements within each criteria which were brought up in Sections 2.1, 2.2 and 2.3.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder Characteristics</td>
<td>Number of stakeholders</td>
</tr>
<tr>
<td></td>
<td>Location and dispersion of stakeholders</td>
</tr>
<tr>
<td></td>
<td>Business nature of stakeholders</td>
</tr>
<tr>
<td>Transaction Characteristics</td>
<td>Volume of transaction</td>
</tr>
<tr>
<td></td>
<td>Frequency of transaction</td>
</tr>
<tr>
<td></td>
<td>Monetary value of transaction</td>
</tr>
<tr>
<td></td>
<td>Products involved in transaction</td>
</tr>
<tr>
<td>Stakeholder Relationship</td>
<td>Formation of relationship</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Structure of relationship</td>
</tr>
<tr>
<td></td>
<td>Nature of relationship (intimacy)</td>
</tr>
<tr>
<td></td>
<td>Complexity of relationship</td>
</tr>
<tr>
<td></td>
<td>Uncertainty and trust in relationship</td>
</tr>
<tr>
<td></td>
<td>Inter-stakeholder reliance</td>
</tr>
<tr>
<td></td>
<td>Duration of relationship</td>
</tr>
<tr>
<td></td>
<td>Industry-wide relationships</td>
</tr>
</tbody>
</table>

3. Research Methodology

To verify the stakeholder relationship issues identified above, the researchers conducted a series of open-ended in-depth interviews with 15 SMEs in Australia and 10 in Singapore (Kong, 1999). These firms were chosen from responders to two surveys, one in Australia and one in Singapore, which were based on lists supplied by the Association of SMEs in Singapore and a number of industry associations in Australia. To gain a broader understanding of the stakeholder relationships in both countries, the researchers chose to interview a selected number of SMEs chosen randomly from responders until a cross-section of business types/industry types had been covered. In searching for meanings in people's actions, and in seeking to identify practices within the SMEs as they relate to their stakeholders, this research hopes to describe and analyze the forms of Electronic Commerce used in SMEs in Singapore and Australia. As part of this study, accounts of the decision-making process and the interactions between a consistent set of actors or players, each with their own agendas and each with their own operating mechanisms, are used to frame the data that emerged from the study.

An informal, semi-structured, interview technique was used following the techniques developed and used by Kitwood (1980) and Wilson and Arnold (1986). Fetterman (1989:48) notes that “formal or structured interviews have an explicit agenda, while informal interviews

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14 eSteel, URL: http://www.esteem.com
have a specific but implicit research agenda and informal interviews can be used to discover the categories of meaning in a culture and are useful in discovering what people think and how one person's perceptions compare with another's”. A sample of questions asked are included the Table 2.

<table>
<thead>
<tr>
<th>Table 2. Example of questions asked in interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Can you describe the nature of the relationships you have with suppliers?</td>
</tr>
<tr>
<td>2. Can you describe the nature of the relationships you have with your customers?</td>
</tr>
<tr>
<td>3. Of the relationships you have described, which are the most significant for the business? and Why is this so?</td>
</tr>
<tr>
<td>4. Do these stakeholder relationships change? If yes how?</td>
</tr>
<tr>
<td>5. What issues are important to you in the formation and continuation of these relationships with stakeholders?</td>
</tr>
</tbody>
</table>

Non-directive questioning which is open-ended and acts as a stimulant for the subject’s thoughts, was often used to make the subject feel at ease so that he/she would be able to give considered views and opinions rather than just giving yes or no answers. The questions themselves emerged from an understanding of the constituent nature of the stakeholder relationships (Corbitt, 1997) garnered from existing literature and other research.

The data collected were analyzed using development of a matrix reporting text about relevant issues on stakeholder relationships in Electronic Commerce using a hermeneutic approach (Lee 1994) combining literature with emergent themes from text in an iterative form. The results are summarized in tabular form to highlight differences which emerge. To evaluate the validity of the research process and the integrity of the data, this research adopts the schematics for qualitative research in Information Systems in Klein and Myers (1999) and Corbitt and Thanasankit (2000). See Table 3.

<table>
<thead>
<tr>
<th>Table 3. Schematics for Qualitative Research in Information Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The principle of the hermeneutic circle: Interview data was transcribed. Analysis of that data initially sought to understand the obvious. Repeated iterations of searching for themes and ideas created some understanding of what happened with Electronic Commerce adoption and why.</td>
</tr>
<tr>
<td>• The principle of contextualisation: Interviews were conducted in Singapore and in Australia. The researchers are a mixture of Singaporean and Australian.</td>
</tr>
<tr>
<td>• The principle of interaction: With the use of open-ended questions in the interviews, the researchers were able to extend the interviews explanations and extend the depth of understanding about the processes and human agency being described. In this way the researcher was able to ensure understanding of the way the managers interviewed were constructing their interpretation. The researchers stretched the interviewees when statements suggesting judgements or opinions were expressed.</td>
</tr>
<tr>
<td>• The principle of abstraction and generalization: Interpretation of the data was based in sustained application of EC literature. The theoretical frameworks in that literature enabled the researchers to facilitate some generalization and theorizing from the data. The findings generated in the study were then applied to existing conceptualizations of Electronic Commerce adoption.</td>
</tr>
</tbody>
</table>
• The principle of dialogical reasoning: In the analysis of divergence from existing Electronic Commerce frameworks, deviation of practice from theory was accepted as an integral part of this study adding to knowledge and suggesting modification of existing theories and structures within the Information Systems.

• The principle of multiple interpretations: Using three researchers to interpret the data enabled emergence of different interpretations. However, the study accepts that the natural bias of the researchers is embedded in the interpretations offered accepting that any other researcher will construct interpretations that may be different.

• The principle of suspicion: There is no doubt that the interview data and the interpretations derived from that data by the three researchers are infused with bias. Each person involved is informed by sets of values and beliefs that are expressed in this type of research. The researchers recognize this but as the research is set within a critical perspective, such bias is accepted as real meaning. To ensure that the bias of the researchers was not imposed in the construction of the stories, all transcribed data was returned to them to check that meaning generated was the same as the meaning written.

• The principle of emancipatory recognition: This study accepts that discovering the hidden discourse within textual analysis of interpretative analysis of text derived from interviews enables identification of those political, social and economic constraints on people. Understanding such emancipatory needs enables those working in the practitioner applications with the ability to modify their expectations and their demands to meet those needs which the recognition of emancipatory needs suggests.

4. Research Results and Analysis

The preliminary analysis reported below attempts to search for cultural differences as they impact on the adoption of Electronic Commerce in the stakeholder/organization relationship. Preliminary analysis of raw data confirmed many characteristics of Stakeholder Relationships that distinguish B-to-B and B-to-C Electronic Commerce as suggested in Table 1 earlier. Table 4 summarizes the data collected in this research, matching them with elements of stakeholder relationships from Table 1. Qualitative judgements are made based on the nature of language used by respondents in their interviews. Each element of Stakeholder Relationship characteristic is qualitatively compared based on the differentiation of word usage. Table 4 shows that there is little difference between existing practices in B-to-B and B-to-C Electronic Commerce in Singapore and Australia at the stakeholder level. However, the data clearly distinguishes the two types of Electronic Commerce.

Table 4. Summary of research results in Singapore and Australia, matched against Stakeholder Relationship Differentiation Criteria and Elements

<table>
<thead>
<tr>
<th></th>
<th>B-to-C Electronic Commerce in Australia</th>
<th>B-to-C Electronic Commerce in Singapore</th>
<th>B-to-B Electronic Commerce in Australia</th>
<th>B-to-B Electronic Commerce in Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Stakeholders</td>
<td>Large</td>
<td>Large</td>
<td>Small</td>
<td>Small</td>
</tr>
<tr>
<td>Number of Sellers</td>
<td>Varied</td>
<td>Varied</td>
<td>Usually small</td>
<td>Usually small</td>
</tr>
<tr>
<td>Number of Buyers</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Location &amp; Dispersion of</td>
<td>Widespread</td>
<td>Very localized</td>
<td>Widespread</td>
<td>Localized</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>Retailer-to-Consumer</td>
<td>Retailer/Distributor-to-consumer</td>
<td>Manufacturer/Supplier-to-Retailer/Distributor</td>
<td>Manufacturer/Supplier-to-Retailer</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----------------------</td>
<td>---------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td><strong>Business nature of stakeholders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume of Transaction</td>
<td>Low</td>
<td>Usually low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Frequency of Transaction</td>
<td>Irregular, seasonal, or once-only</td>
<td>Irregular and often seasonal</td>
<td>High and regular. High levels of consistency</td>
<td>High and regular. High levels of consistency</td>
</tr>
<tr>
<td>Monetary Value of Transaction</td>
<td>Low</td>
<td>Low</td>
<td>Medium-high</td>
<td>Medium-high</td>
</tr>
<tr>
<td>Formation of Relationships</td>
<td>Always new. Multiple movements into and out of the relationship by customers</td>
<td>Always new. Multiple movements into and out of the relationship by customers</td>
<td>Quite often new relationships are formed and stabilized</td>
<td>Based on existing trading relationships and other social contacts</td>
</tr>
<tr>
<td>Structure of Relationships</td>
<td>One seller-to-many buyers</td>
<td>Usually one seller-to-many buyers, but electronic malls feature many sellers-to-many buyers</td>
<td>One seller-to-one buyer, one seller-to-few sellers, few sellers-to-few buyers (within the supply chain)</td>
<td>One seller-to-one buyer, one seller-to-few buyers</td>
</tr>
<tr>
<td>Nature of Relationships (Intimacy)</td>
<td>Highly intimate and personal</td>
<td>Highly intimate and personal</td>
<td>Impersonal, formalized.</td>
<td>Impersonal, based on existing trading relationships where prior personal contact is significant</td>
</tr>
<tr>
<td>Complexity of Relationships</td>
<td>Simple</td>
<td>Simple</td>
<td>Complex</td>
<td>Highly Complex</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Trust</td>
<td>Low</td>
<td>Very low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Inter-stakeholder</td>
<td>Low and variable</td>
<td>Low and variable</td>
<td>High and sustained</td>
<td>High and sustained</td>
</tr>
<tr>
<td>Reliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of Relationships</td>
<td>Short</td>
<td>Short</td>
<td>Extended</td>
<td>Extended</td>
</tr>
<tr>
<td>Industry-wide</td>
<td>Low</td>
<td>Low</td>
<td>Highly inter-related and inter-dependent</td>
<td>Highly inter-related and inter-dependent</td>
</tr>
<tr>
<td>Relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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### 4.1 B-to-C Electronic Commerce in Singapore and Australia

In both countries, **B-to-C** Electronic Commerce implementations take on a more “market-like” structure. Many buyers and sellers operate in the same market. The general public makes up the buyers, while small and medium-sized suppliers and distributors make up the sellers. The products being exchanged in B-to-C Electronic Commerce are mainly consumer goods. There is a small fraction of digital products being exchanged. B-to-C Electronic Commerce transactions do not occur at fixed intervals. More often than not, the timing and regularity of purchases are dictated by consumer buying behavior, which is influenced by trend and fashion, as well as special occasions.

As for the formation of stakeholder relationships in B-to-C Electronic Commerce, there is no prior agreement or contact prior to the B-to-C transaction. Consumers may have a history of purchasing from the same supplier, but the buyer-seller relationships last for only the duration of each transaction. New relationships are formed for each transaction. In the observed cases, customer loyalty programs, like airline frequent flyer program, are not used to encourage long-term stakeholder relationships. The relationship between buyer and seller in B-to-C is more intimate and personal, as personal preference and liking are often used by the retailer to provide customized service. Nevertheless, the relationships remain simple, since the buyer and seller do not enter into purchasing contracts, apart from abiding to legislative obligations to deliver goods (by the seller) and pay up (by the buyer). The buyer-seller reliance is fairly low, since many consumer goods in this study do not command high monetary value, nor require constant after-sales interactions. Software purchases are exceptions to this circumstance.

### 4.2 B-to-B Electronic Commerce in Singapore and Australia

Observation of **B-to-B** Electronic Commerce in Singapore and Australia confirmed that the number of stakeholders is small. The relationship is usually one-to-one. B-to-B Electronic Commerce activities are primarily made up of information sharing and exchange, with extended implementation of EDI. As such, the transaction volume is high, and transactions occur at regular intervals. B-to-B relationships also have a sense of consistency, like the daily exchange of inventory data among upstream and downstream supply chain members.

The complexity of stakeholder relationships is high. Information exchange and the transaction of physical goods between organizations are bound by strict company policies, like budgetary restrictions, confirmation of purchases, guarantee of on-time delivery, and conditions for future transactions. As such, the formation of B-to-B relationships occurs in a
face-to-face manner, instead of online contract negotiation and formation. The relationships are based on existing trading relationships, although the formation of B-to-B relationships in a few Australian cases are initiated electronically, i.e. buyers found the sellers online. B-to-B relationships last longer than the duration of a single transaction. This is due to the high cost of setting up and terminating B-to-B relationships. Although information of commercial importance is exchanged between stakeholders in B-to-B Electronic Commerce, none of the information includes personal details of individuals. There is a high level of inter-stakeholder reliance as each trading partner commands a significant amount of income or spending. A tightly knit relationship it is, but a personal relationship, it is not.

A particular B-to-B Electronic Commerce case in Singapore involves an import-export business. The level of trust between buyer and seller is high. The stakeholder relationships are closely bound by contracts in connection with shipment of products, payment, currency exchange, custom clearance, and product quality. The customers of this business are located all over the world, hence Electronic Commerce allows this organization to accept orders on a $24 \times 7 \times 365$ basis, and maintain a global point of presence without having to set up branches overseas, confirming arguments from existing literature (CTRC, 1997).

### 4.3 Comparison of Electronic Commerce in Singapore and Australia

Comparing the observations across countries, observations from Singaporean Electronic Commerce cases (both B-to-B and B-to-C) highlight that all the stakeholders are located within a close geographical proximity, apart from the import-export business mentioned above. Singaporean businesses do not have huge incentives to use Electronic Commerce if they already have an efficient traditional distribution channel. In the Singaporean B-to-C cases, the added advantage of expanding into new markets exists only in the sense of selling to targeted-groups who are not accessible through traditional distribution chain, or for marketing the product overseas. This confirms the ideas of micro-marketing, and exploitation of niche markets.

In the Australian cases, the buyers and sellers (in B-to-C and B-to-B) are located within the same city, or in different states and territories within the same national boundary. Electronic Commerce implementation (both B-to-C and B-to-B) in Australia allows local businesses to serve remote population centers. Local businesses can become nation-wide businesses easily with Electronic Commerce.

In all cases, it was found that the readiness of the market is a major determinant of Electronic Commerce implementation. In B-to-C Electronic Commerce, consumers’ readiness to use Electronic Commerce determines whether or not traditional businesses will set up an electronic storefront. Some participants of this study reported that the need to achieve a competitive edge encourages them to venture into the Electronic Commerce frontier. Pressure by trading partners to implement Electronic Commerce is a major factor why many SMEs choose to implement B-to-B Electronic Commerce. As B-to-B Electronic Commerce becomes more pervasive, issues like expanding into new markets may then become factors in implementing Electronic Commerce. This is already the case in a few Australian B-to-B practices.
5. Discussion and Future Research

Preliminary results from this study suggests that although the two major types of Electronic Commerce can be distinguished using the Electronic Commerce Differentiation Framework, more empirical data will be needed to verify and improve the proposed framework. New criteria may be required to describe and distinguish these two types of Electronic Commerce, since the boundary between the two major types of Electronic Commerce is often blur and ambiguous.

The study contributes to existing literature in Electronic Commerce by identifying and emphasizing stakeholder relationships in Electronic Commerce, and how they can be used to differentiate B-to-C and B-to-B Electronic Commerce types. Clear understanding of the distinction of the two types of Electronic Commerce may assist organizations to formulate the appropriate business strategies when venturing into the dot com territory. In addition, this study allows strategies for integrating both types of Electronic Commerce (e.g. a retailer which integrates its virtual storefront with its backend Enterprise Resource Planning (ERP) system) to be developed. Electronic Commerce reduces face-to-face interaction between stakeholders, hence Electronic Commerce organizations will need to pay additional attention to stakeholder relationship issues in order to satisfy trading partners and customers better.

The current state of Electronic Commerce in Singapore and Australia places emphasis on the B-to-C and B-to-B Electronic Commerce types. Other Electronic Commerce models that are expected to draw attention in the near future are Business-to-Government and Consumer-to-Consumer Electronic Commerce. As more governments begin to realize the benefits of Electronic Commerce and come under new pressures to increase efficiency, Electronic Commerce will turn out as a viable cost-reduction tool. The B-to-B Electronic Commerce model can be adapted to suit the Business-to-Government case easily, or rather, governments can operate in a more business-like manner and adopt the B-to-B Electronic Commerce model. The Victorian State Government in Australia has already implemented online purchasing and project tendering. The Internet is expected to encourage the growth of Consumer-to-Consumer Electronic Commerce. Consumer-to-Consumer Electronic Commerce exists today in the form of subscribing to mailing lists that cater for the sale of second hand products and niche market products. However, trading post-type websites will give individuals more freedom and convenience to exchange information to enable the buying and selling of goods and services among individuals. Apart from finding answers to the initial research questions, this study also raises several issues like:

- How does cultural background affect Electronic Commerce adoption?
- What is the role of governments in promoting Electronic Commerce?
- How does Electronic Commerce impact intra and inter-industry competition?

To emphasize stakeholder relationships in Electronic Commerce, this paper uses the word “to” instead of “2” (as in B-to-C instead of B2C), as “to” expresses relationships better than “2”. Lessons learnt from stakeholder relationship analysis in B-to-C and B-to-B Electronic Commerce will enable future researchers to develop substantive hypotheses that will frame research which engages more companies. This study is but a first step towards developing a more rigorous method of using stakeholder relationship issues to differentiate Electronic Commerce.

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15 http://www.vgpb.vic.gov.au
Commerce types. Data collected from this study have indicated that future studies would benefit by considering using stakeholder relationship as the unit of, instead of using products, transactions, individuals, organizations, and industries as the unit of analysis.

References


