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## **Towards a definition of B2C & B2B e-commerce**

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### **Abstract**

This paper discusses and compares definitions of the terms business-to-consumer (B2C) and business-to-business (B2B) e-commerce to assist the e-business community to take better advantage of the potential of the e-commerce medium. The absence of consensual definitions in terminology may be preventing the e-business community from taking full advantage of the unique characteristics that the medium provides. A definition of B2C e-commerce is proposed. Finally, the paper notes the overlapping nature of B2B and B2C e-commerce.

### **Keywords**

Internet; Electronic Commerce; Business Models; e-Business Strategy

## **INTRODUCTION**

Corporate leaders are recognizing that electronic business, (e-business) is the biggest transition for businesses, the economy and competition since the Industrial Revolution (Herman, 1999). Business to Consumer e-commerce (B2C) grew beyond all expectations in 1999 according to the US Department of Commerce. Yet in April 2000 the Nasdaq had its largest ever loss of 39.3% in total value at the close of a year that will be remembered as "The Year of the Dot.Com Crash." IBM Chairman and Chief Executive Officer Louis V. Gerstner, Jr., stated in his 2000 annual report to shareholders (Gerstner Jr, 2001) that "the collapse of the dot-coms was not a failure of e-business. It was an overly narrow approach to e-business". Perhaps a minor contributory reason was a lack of agreement by stakeholders on the meanings of terms used in the e-business sector.

A study commissioned by Cisco Systems, carried out by the University of Texas' Center for Research in Electronic Commerce shows that the Internet is transforming the economy and the way people work, to an extent few people imagined only a few years ago. The study reports that although currently, Internet revenue is only one quarter the size of non-Internet revenue, it is growing three times as fast as corporate revenue as a whole (University of Texas, 2001). In 1999, the US Department of Commerce estimated that 200 million people worldwide were connected to the Internet. The Forrester Group estimate that the global value of e-commerce in 2004 will be \$US6.9 trillion (Powell, 2001). The recent failure of many B2C based organisations could accord more importance to an understanding of the definitions of the many components that constitute e-commerce. It may also assist organisations involved in e-commerce to better meet the demands of their clients.

It is important to note that prior to 1995 the common platform for predominantly B2B e-commerce transactions was Electronic Data Interchange employing either peer-to-peer networks or using Value Added Network (VAN) providers. EDI frequently required contractual relations to be established prior to trading. The spread of the internet and triangulation between anonymous buyers, sellers and secure online financial processing agents, mainly credit card companies, is driving the VAN / EDI model to a minor role in the e-commerce ecosystem.

This paper attempts to define the meanings and potential hidden overlap between B2B and B2C e-commerce transactions. Definitions of B2C and B2B e-commerce vary widely. This paper attempts to review these and establish a more focused definition for B2C e-commerce.

Much of the research that has been conducted in this area has been based on a US perspective and there has been little research carried out specific to the Australasian environment. Twemlow (2001) challenges the assumption that the Australian market will behave in a similar manner to the US market. Therefore cultural and demographic differences may need to be addressed in providing definitions that are appropriate for other than a US environment.

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## **DEFINITIONS**

A report from the U.S. Department of Commerce (1999), states that a standard definition for e-commerce is yet to be established. A range of commonly applied definitions is provided in order to demonstrate both the variations in perceived meanings and to explain the dynamic relationships between individual components.

The overuse of acronyms in the world of information technology (IT) and information systems (IS) can sometimes lead to misinterpretation. Depending on the users reference viewpoint, terms that have yet to be standardised may be interpreted differently, leading to possible loss of business opportunities.

### **E-commerce**

Although e-business encompasses a wide spectrum of activities, including internal business processes, external interfaces with customers, suppliers and partners, as well as Internet-based technologies for shared electronic systems, the main manifestations of e-business so far, have been in marketing and sales essentially electronic commerce (e-commerce) (Herman, 1999). E-business is able to create new channels to communicate and exchange transactions both internally and with customers and suppliers (Lewis, 2000).

Bambury (1998) segregates current e-commerce business models into those that occur naturally in traditional trading and those that have been transplanted onto the Internet and those that have evolved within the Internet environment and are native to it.

<b>Transplanted</b>	<b>Native</b>
The mail-order model	The library model
The advertising based model	The freeware model
The subscription model	The information barter model
The free trial model	Digital products and the digital delivery model
The direct marketing model	The access provision model
The real estate model	Web site hosting and other Internet services
Incentive scheme models	
Business to Business	
Combinations of the above models	

Table 1: Bambury (1998) e-commerce business models

The (Cisco iQ, 2001) glossary defines e-commerce simply and rather simplistically, as the buying and selling of goods and services on the Internet. This includes buying and selling products with digital cash and via Electronic Data Interchange. As such this definition is an example of the overly narrow approach referred to earlier.

In their attempt to define e-commerce, (Sproule and Archer, 2000) first use a definition of commerce by (Nissen, 1997) as the process flow associated with a commercial relationship or transaction, including activities such as purchasing, marketing, sales and customer support. They believe that e-commerce is this same process, enabled by the use of communications and information technology.

An hierarchical conceptualisation of e-commerce consisting of three meta-levels is provided by Zwass (1996), who describes it in the following manner,

- Infrastructure: the hardware, software, databases, and telecommunications that together deliver such functionality as the World Wide Web over the Internet, or support electronic data interfaces (EDI) and other forms of messaging over the Internet or over value-added networks;
- Services: messaging and a variety of services enabling the finding and delivery (on business terms, if desired) of information, as well as negotiation, transacting business, and settlement;
- Products and structures: direct provision of commercial services to consumers and business partners, intra-organisational information sharing and collaboration, and organization of electronic markets and supply chains.

A strategic management view is provided by Wigand (1997) denoting E-commerce as, the seamless application of information and communication technology from its point of origin to its end point along the entire value chain of business processes conducted electronically and designed to enable the accomplishment of a business goal.

E-commerce is frequently referred to in terms of business-to-business e-commerce between organisations (B2B), and when conducted between organizations and consumers as business-to-consumer e-commerce (B2C), (Zwass 1996). Goldman Sachs (1999) extends this taxonomy segregating e-commerce companies into business-to-consumer (B-to-C), consumer-to-business (C-to-B) or consumer-to-consumer (C-to-C) companies. In particular

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they define Business-to-business e-commerce as the exchange of products, services, or information between businesses via the Internet. B2B Web sites fall into several categories: company Web sites, product supply and procurement exchanges, specialized search sites, and trade and industry standards organization sites.

Business-to-consumer e-commerce is defined as the exchange of products, services, or information between businesses and consumers via the Internet, and Business-to-business as the exchange of products, services, or information between businesses via the Internet (Cisco iQ, 2001). There is an inference that the difference between B2C and B2B is that one type of business transaction occurs with businesses and the other with consumers. This definition does not adequately describe those exchanges that occur with businesses that are also consumers, nor consumers that are also businesses.

Therefore, in order to further develop these definitions it is necessary to define secondary terms in use. A consumer is a person who uses a product or service and a business is a person or company buying and selling goods for profit (Blair, 1982). The term customer is synonymous with client, consumer and patron according to the (Reader's Digest, 2001) which also describes a consumer as a person who buys a product or service for personal use. Using this definition of a consumer there is a corollary that the products or services bought should not be a factor of production for other products and services for future consumption.

In order to compare B2B with B2C, a summary of differences is provided by IBM (Table 2)

	<b>Business-to-Consumer (B2C)</b>	<b>Business-to-Business (B2B)</b>
Topology	Traditional Internet: End-user (buyer) connected through ISP. Seller behind firewall, either directly connected or through ISP.	Traditional Internet or private network with trusted trading partners. Private network might be a virtual private network (VPN) using the Internet infrastructure.
Order characteristics	Unique (not standing or repeat): usually smaller quantity and total value	Scheduled orders (contract with multiple shipments); repeat orders (the same supplies or parts on each order); can be very large quantities or values
Payment type	Credit card	Varied: credit card, purchase order, open contract
Pricing	Standard retail: list with discounts, sales, coupons, etc.	Often negotiated prices for each buyer. Volume discounts. Special bid prices for custom products.
Terms and conditions	Standard	Often negotiated for individual customers; EDI sometimes required
Products available	Standard products found in an e-catalogue	Standard products found in an e-catalogue; complex custom-ordered products; industry-unique processes for some raw materials (e.g. paper, chemicals); special-bid products
e-Catalog	Usually required	Not always required. Orders might be by part number or from a configurator.
Supply chain participation	Not usually	Demand forecast; automatic purchase order generation; supply chain visibility

Table 2: IBM B2C B2B comparisons, (IBM, 2001a)

## **B2B**

Business-to-business (B2B) is the use of Web-based technologies to buy, sell or exchange information between two or more companies. B2B transactions can take place directly between companies or through a third party (an intermediary) who helps match buyers and sellers, (IBM, 2001a) . IBM report that a recent Gartner Group study estimates \$US2.7 trillion in sales transactions in B2B eMarketplaces by 2004, contrasting with only about \$US500 Billion B2C transactions in this timeframe. (IBM, 2001a)

The Gartner Group defines B2B Internet commerce as the sales of goods and services for which the order-taking process was completed via the Internet. This includes purchases via Internet EDI, e-marketplaces, extranets and other sell-side initiatives, but excludes activity over proprietary networks. Gartner's forecast of \$US2.4 trillion by 2005 is based on the value of B2B non-financial goods and services sold, resold and brokered over the Internet through establishments every time they are turned over, (CyberAtlas, 2001a).

The four common B2B models can be summarised as:

Buy-side (e-procurement)	Pre-negotiated arrangements made with buyers
Sell-side (e-catalogue)	Supplying a wide marketplace and may be supported by ERP connectors (supply chain management)
E-Marketplaces	Networks of buyers/sellers using auctions, reverse auctions, and exchanges
Trading Partner Agreements	Inter business automation processes

Table 3: B2B common models (Adapted from Hemond-Wilson 2000)

## **B2C**

Confusion over the meaning of acronyms is particularly relevant in the case of B2C where popular belief is that the “C” is interpreted to mean “customer”. In order to differentiate between B2C and B2B (business to business), where the second “B” might be also a customer, it has become more common for the acronym B2C to mean “business to (end) consumer” trading. Further such ‘end consumption’ means that the goods or services do not contribute directly to the factors of production for other goods and services.

Oracle, in their “Application Developers Guide”, (Oracle, 2000) define business-to-consumer (B2C) as “a term describing the communication between businesses and consumers in the selling of goods and services”. Using a similar theme, (Sybase, 2001) however, in their “Glossary of Industry-Specific Abbreviations, Acronyms and Terms”, interpret business-to-consumer (B2C) as “the ability of companies to deliver products, services, support, and information over the Internet directly to individual consumers”. While (IBM, 2001b) presents a similar perspective they define business-to-consumer (B2C) as “the use of Web-based technologies to sell goods or services to an end-consumer”. These three similar definitions referring to B2C in terms of “communication between”, “ability of”, and “use of”, contrasts with more popularly implied interpretations describing business-to-consumer (B2C) as referring to simply “the sale of goods, products or services between a business and consumer” (Smart Computing Dictionary, 2001).

B2C e-commerce involves goods, products and services but also inherently involves the two-way exchange of information between the user (consumer) and the system (business).

B2C e-commerce may therefore be defined as:

*an exchange between producers and end consumers of goods, services and explicit knowledge about goods and services (or information about consumers) for available consumption in return for the actual or potential payment of monies.*

## **DISCUSSION**

The belief that the entire business model, strategy, execution, and fulfilment of B2B differs from that of B2C (NetLingo, 2001), is challenged by examples of many companies working seamlessly and efficiently in both areas. As one of the top performing e-commerce organisations, Dell and other online computer retailers sell to enterprises through customised Web portals and to consumers through Dell.com. The airline industry provides similar on-line services to both business and leisure passengers (The Internet Economy Indicators, 2001). Although there needs to be an appreciation that there are significant differences in the operations of the different models, there needs also to be a realisation that, as in the above cases, the two models can co-exist comfortably and in many cases be organisationally complementary to one another.

The creation of separate e-commerce strategies for B2B and B2C, therefore, may be flawed where organisations fail to recognise that B2B e-commerce may occur through B2C channels. Failing to recognise a B2B transaction or mistaking it for a B2C transaction may diminish the opportunity to foster future business from the other party to that B2B transaction.

In an environment in which definitions of core components have yet to be adequately defined and where even acronyms may have multiple meanings, it may be worthwhile to consider whether a firm distinction needs to be made between B2B and B2C. Stroud (1998), in his book, “Internet Strategies”, may be offering a different approach in providing a corporate guide to exploiting the Internet, by omitting, even in the glossary, all references to B2B and B2C. Direct and personalised marketing techniques employed by B2C organisations are starting to look similar to traditional relationship marketing techniques used by B2B companies.

Even the popular meanings of B2B and B2C would indicate that the terms must have some overlapping business functionality.

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Leading e-commerce performers such as Cisco and Dell challenge the popular belief that B2B and B2C are fundamentally different. These organisations employ business models that exhibit significant overlap between B2B and B2C. Traditional organisations that may concentrate their marketing efforts on supplying either wholesale or retail customers, are not precluded from taking advantage of business opportunities by operating in both areas unless they declare themselves as either specialised wholesalers or retailers. There is a risk that e-commerce organisations that do not fully understand the environment in which they operate might choose to limit their involvement to either B2B or B2C, consequently not taking advantage of the business opportunities provided in the area of overlap.

An Australasian model may also need to be applied differently than for a US counterpart. The difference between US and Australasian markets are described by Twemlow (2001), in three key areas,

- The magnitude and complexity of the US, which is capable of absorbing many iterations of a similar product.
- The relative openness of the US towards new technology and products.
- The availability of private equity capital.

The two year lag between US and Australian e-commerce booms meant that Australia has had only about two years of experience prior to the dot-com crash of 2000. Even in such a fast developing environment there has still been little time for e-commerce stakeholders to mature before being confronted with a significant readjustment of market values, and subsequent stakeholder confidence. There has therefore been little opportunity, especially for Australian companies to establish clear patterns for either success or failure.

## CONCLUSION

Globally, e-commerce stakeholders have had little more than five years to develop appropriate business models from which they can take advantage of unique characteristics of the medium. As e-commerce further develops, the associated maturing of both buyers and sellers is expected to provide clearer and more widely understood definitions of the components associated with the environment. Coupled with this expected greater understanding of the individual components, there will hopefully be a better understanding of the dynamics and interactions between the various components.

It is expected that any differences between the US and Australian experiences and applications of e-business models will become more apparent as additional local research is conducted based on the experiences in local markets. To merely import the lessons from research that has been predominantly carried out in a different market environment would appear to be presumptuous. In what must be considered an immature stage of e-commerce development, to make critical business decisions without fully understanding either the market components or how they behave in a local environment, could be considered a high-risk strategy for e-business firms.

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