Identifying Strategies and Methodologies for the Establishment and Maintenance of Trust in Business-to-Consumer E-Commerce for Small to Medium Enterprises

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DECLARATION

This thesis contains no material which has been accepted for the award of any other degree or diploma except where due reference is made in the text of the thesis. To the best of my knowledge, this thesis contains no material previously published or written by another person except where due reference is made in the text of the thesis.

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ABSTRACT

The advent of the Internet as a method of transacting business has challenged consumers to trust in a new technology and deal with virtual vendors residing in unconfirmed locations. Consumers have been expected to accept risk in exchange for convenience of place and time. Lack of trust has been identified as a major contributor to the slow uptake of e-commerce. The initial surveys undertaken support this assertion when applied to an Australian context and in particular in reference to the generation that has been raised with the Internet as a research tool and for social networking. The analysis also demonstrated that the surveyed participants were unable to recognise the trust mechanisms that had been included to reduce the risks involved in online transactions. Without the required understanding and lack of trust of e-commerce as both a technology and a benevolent vendor/consumer relationship the incidence of vulnerable transactions and vulnerable consumers could lead to growth of mistrust and a failing e-commerce business model.

This research aims to identify existing and potential control mechanisms and environments which improve trust in Business to Consumer (B2C) electronic-commerce (e-commerce) and in particular for small to medium enterprises (SME) trading over the Internet in Australia. The studies disclose a multifarious understanding of the term trust and its relationship with the multi-disciplined e-commerce. This complexity demonstrates the difficulty in answering how trust is developed and maintained. In defining trust the inadequacy of singular discipline research is identified and the need to merge disciplines arises. The Technology Acceptance Model (TAM), as frequently proposed as an explanation for the lack of trust in e-commerce, is inadequate to demonstrate the complexity of trust in relation to e-commerce and is thus extended to include the Theory of Planned
Behaviour (TPB) and the control trust/party trust equation. The inclusion of these Information Systems models demonstrates the need for further discussion of the human aspect in relation to trust in psychology, sociology and human-computer interaction and its design elements. The study of trust in e-commerce had in the past been considered from the discipline of the researcher and it had reached a stage of maturity where the merging of disciplines was intrinsic to develop a comprehensive understanding if solutions were to be derived.

The merging of disciplines formed a basis for understanding trust as a theoretical concept in relation to e-commerce and an inclusive analysis of trust factors that had been identified as assisting trust development and maintenance from discipline specific research. It is from this basis that the Multi-Disciplinary Model of Trust (MDMT) was developed which offers a more holistic view of e-commerce trust, collating trust determining factors while removing redundancies where they occur.

To enhance the MDMT, the concept of unbundling trust as a single issue is offered, where trust is considered to be not only with the vendor but also in the vendor’s ability to provide a safe and secure transaction and delivery.

The analysis of the testing of the MDMT with participants demonstrates the benefit of testing each of the factors and concepts in unison rather than disciplinary isolation. Participants acknowledge some redundancies and offer new factors to be considered. The participants also demonstrated their lack of knowledge of a safe and secure technology and classified integral factors as unimportant, once more creating an avenue for vulnerability and the growth of mistrust. The vulnerability was even further exasperated where the participants recognised signs of an unsafe transaction, however were willing to take a risk as their trust in the vendor outweighed their trust in the vendor’s ability.

Further research into why consumers were willing to take such risks unveiled Internet B2C e-commerce SMEs that had implemented this level of vendor trust as a strategy for trust building and maintenance, either through design or general benevolent behaviour of the company. Each of these companies had built communities either online or in the Bricks and Mortar (B&M) world before entering the Internet market. They had also established methods to educate their customers on the use of Internet transactions and offered varied methods of transacting, all of
which were backed by personal service. That is community, benevolence and support overcame many of the shortcomings offered by each of these companies in their technological capability.

The establishment of trust is a difficult enough task for the new SME entering the market, however there are many pitfalls that enable distrust to occur if the vendor is not vigilant. The experiences of established Australian online B2c e-commerce SMEs have been collated as a set of guidelines to assist establishing companies gain and maintain trust to ensure technical reliability and robustness of their online business.

This research is of benefit to e-commerce researchers as a resource for a multi-disciplinary perspective to B2C e-commerce. It is also of benefit to businesses establishing themselves as Internet based B2C e-commerce SMEs in that the MDMT offers factors that will encourage a visibly safe and secure site, the examples of tried methods can encourage initial trust and a set of guidelines to assist in reducing the possibility of building distrust.
AUTHOR’S PUBLICATIONS


**Best Paper Award**


**Panel Forum**

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References for researched companies are available on request to supervisors
CHAPTER 1
INTRODUCTION

We are currently witnessing the growth in the global business community of the Internet as a platform for electronic commerce. Much attention is dedicated to the Web, its potential and the risks that it holds for marketing and selling products and services online. In the context of business-to-consumer (B2C) electronic commerce (e-commerce), the consumer not only compares product and pricing alternatives, but also the risks of conducting the transaction online.

This chapter will initially turn its attention to the nature of the problem that is impeding the uptake of B2C e-commerce. Following this will be an outline of the subsequent chapters of this study.
1.1 THE PROBLEM IDENTIFIED

E-commerce, while once the domain of large businesses with virtual private networks, has become a part of our everyday language but is still to become part of our everyday commercial life. It is considered to be the future in economics for large corporations, manufacturers and small businesses selling products and services online. The Internet, once considered a tool solely for research, has evolved to be a market force in the consumer network, offering goods and services outside of the consumer’s physical locality and time zone. Consumers are given the opportunity to research compare and contrast business offerings with minimal time and financial outlay. Businesses are given the opportunity to reach an audience limited only by accessibility to the Internet. In all business ventures there is always risk involved and the Web environment is no exception. The notion of trust is especially relevant in the online context where the intended purchase may be from a supplier that is operating in a different country, time zone, currency and legal system. In the process of e-commerce, vital information essential to the completion of transactions, moves from site to site. However there are concerns, amongst others, that the data is vulnerable to security breaches and misuse. B2C e-commerce offers the ability to reach a wider audience with 24/7 opening hours, however it also brings with it extra concerns not experienced by the average Bricks and Mortar (B&M) shop front business (Gefen 2004; Ba 2002; Pavlou 2006; Furger 1998). B2C e-commerce has its own exclusive set of risks due to its virtual and dehumanised nature.

1.2 E-COMMERCE, A RISKY BUSINESS

E-commerce is fraught with risk and hence must make substantial efforts to win over the trust of its potential consumers. “Without risk or uncertainty there would be no need for trust” (Lewis & Weigert 1985; Schlenker et al. 1973). The determination of the consumer’s perception of how they are at risk, what are the security issues and how they feel their trust may be violated while using e-commerce, may assist in developing trust-engendering strategies.
This chapter will provide a background of B2C e-commerce as it was perceived at the commencement and throughout this study. It will then consider the risks that affected both businesses and consumers in B2C e-commerce, in order to assist in understanding the fears and concerns held that may impede trust in purchasing online.

1.2.1 PERCEPTIONS OF B2C E-COMMERCE

Within six years of the advent of B2C e-commerce it was becoming evident that the uptake of B2C e-commerce was not reaching the expected sales projections (Forrester 1999) and that the Internet lent itself to unscrupulous, untraceable behaviour. Even in its early days it was noted by Nielsen Media Research that “an awareness of concerns to Internet business misconduct is increasing” (Nielsen 1997). The US chairman of the Federal Trades Commission, Robert Pitofsky, described B2C e-commerce as having “the appearance of the Wild West with no law and no sheriff” (Kuchinskas 1999). The lack of social presence (Gefen and Straub 2004) has altered the accepted and expected social exchange practices that are considered as essential norms for transactional behaviours in the equivalent B&M businesses (Zhang and Zhang 2005). The concerns held with the perceptions of B2C Internet e-commerce has led to a number of surveys into discovering the impediments to its uptake and the cause for these impediments.

From the inception of B2C e-commerce, surveys have shown concerns by consumers in relation to purchasing online and in the amount of fraudulent behaviour occurring in this untraceable and anonymous environment. A survey by 60 consumer oriented organisations, including the Australian Competition and Consumer Commission located 5000 sites involved in activities thought to be suspicious in nature, including pyramid selling, gambling operations and the sale of non-existent products as early as 1996 (Jarvenpaa and Todd 1996).

In a survey on the trustworthiness in the usage of e-commerce (Cheskin Studio Archetype/Sapient 1999), only 10% of the participants considered little or no risk when purchasing on the Web. 23% felt threatened by hackers and 16% were concerned about people or firms obtaining and abusing their personal information.
Furthermore it was found that the five major areas of concern that stand in the way of trustworthiness in e-commerce trading are: Authentication, Privacy/Confidentiality, Integrity, Guaranteed Delivery, and Non-Repudiation. The most obvious risk offered from this survey was one that both the vendor and consumer take in e-commerce transactions in that the vendor may decide not to deliver the products or services paid for, or the client may deny ever having made such a request. Consumers also reported that for less known brands navigation impacts perceptions of the Web site’s trustworthiness and that they required a clearly stated returns policy. With security of their information, consumers required clearly stated and authenticated policies of security and encryption. Once the submit button was selected consumers also wanted the ability to back out of a transaction to be provided.

A study sponsored by Trust-e, an independent online trust authority in the U.S.A. and conducted by Taylor Nelson Soffres (TNS) (Taylor 2006) found that only 55% of those customers who intended to purchase online over the holiday season in 2005 felt secure with their online transactions. Concerns with risk, both personal and performance were recorded by over 50% of Web shoppers in a survey at the University of Nashville (Hoffman, Novak et al. 1999).

In 1997 the US Federal Trade Commission received less than 1000 complaints for online fraud and deception from consumers, a figure that rose to over 25,000 by 2001 (US-FTC 2001). The ‘Internet Crime Complaint Centre’ (ITCC 2007) established to oversee Internet crime, released its seventh annual report in 2007 indicating that the number of fraud and deception complaints had risen to over 206,000 within the preceding 12 months.

The International Crime Victimisation Survey’s (ICVS) Australian component conducted a survey into the prevalence, reporting and handling of Internet crime as perceived by households. The Australian component of the ICVS was conducted by the Australian Institute of Crime (Krone and Johnson 2007). Within the households surveyed, of those who had made a purchase online in the past 5 years, 11% reported having experienced problems relating to theft, non repudiation, quantity and or quality not as advertised and other non specified problems. Half of these problems were reported to be in the past 12 months of the survey while there were
only 24% in the 12 months earlier and 26 % in the 3 years (in total) previous to this. This data suggests that the incidence of problematic behaviour over Internet commerce is increasing in Australia as is the case as shown in the US ITCC studies previously discussed.

The trend in the data towards consumer concerns with Internet purchasing has continued through the new millennium as can be seen by the survey carried out by the Australian Institute of Crime (Krone and Johnson 2007). The survey found that only 43% of participants or members of their household had used Internet commerce in the past 5 years. Of the remaining 57% of households surveyed who had not used any form of Internet commerce, 63% gave their reason as being related to their concerns with security and a further 10% declared they were not confident with the technology.

From a study carried out by Nielsen Media Research (Nielsen 1997) it was found that the more experience the user has in online usage the less important is the usage of online shopping and the more important are concerns of trust of security and privacy of personal information.

The general consensus by both researchers and business forecasters was summarised by Higginbotham that one of the reasons considered as a main obstacle in the uptake of e-commerce is “the fundamental lack of faith between most businesses and consumers” (Higginbotham 1999). This sentiment has continued to grow through the life of e-commerce (Stewart, Pavlou et al. 2002; Koufaris and Hampton-Sosa 2004; Krone and Johnson 2007) and is reflected in current literature with over 90% of US e-commerce users reporting their intention to reduce or stop using e-commerce due to concerns with security, identity fraud and other issues related to trust (Consumer Web Watch 2005).

Previous empirical studies have shown that trust and risk factors account for a significant proportion of the concerns acknowledged by subjects for not completing a transaction in B2C e-commerce. These studies reflect the positions taken by subjects ranging from no exposure to e-commerce to experienced B2C e-commerce purchasers (Jarvenpaa et al. 2000) (Van der Heijden, Verhagen et al. 2003). Even where biases in the samples existed with students, male, computer competent,
experienced in e-commerce, users still expressed a substantial number of concerns with trust and risk (Verhagen, Meents et al. 2006).

Wherever there are risks there is a need for trust. Every honest B2C e-commerce business must harness the necessary technical, business, and social skills to reduce the risks to the consumer if they are to be successful. At the same time the Internet offers the ability to be anonymous and unscrupulous in business behaviour, not only financially but also with personal information. The next two sections will discuss the risks that both consumers and businesses face when trading goods and services online.

1.2.2 RISKS TO THE CONSUMER

The B2C e-commerce consumer faces what appears to be a void when they purchase a product or service online. In most cases, after a payment has been made there is no physical result from the transaction as is the case when a consumer leaves a store after a purchase. There is no physical location to return to should the transaction go wrong and there is no known individual responsible for refunds. A level of confidence that is understood by knowing the agent or sales assistant is not developed in an e-commerce store, thus leaving the difficult task of attempting to build a 1-1 trusting relationship with a submit button. These issues form a basis for the risks being undertaken by the online consumer that do not apply to the B&M consumer.

1.2.2.1 Anonymity of the Internet

It is far easier to practice deceitful behaviour when the only presence a business has is virtual and not physical. From the consumer’s perspective, companies who profess to be reliable, dependable and able to deliver can appear and disappear in an instant taking with them both the consumer’s personal details and funds. The unscrupulous trader is seen to be able to commit fraud and steal identities by posing as a legitimate business. Consumers experience the added fear with online purchasing due to the ‘spacial and temporal separation’ affording product and identity uncertainty as described by Ba and Pavlou (Ba and Pavlou 2002).
1.2.2.2 Product Delivery

Forrester senior analyst Maria LaRour Kadison, states that “Consumers are concerned about dealing with an unknown merchant. They wonder if they will ever get the goods” (Forrester 1997). The research undertaken by Cheskin (Cheskin Studio Archetype/Sapient 1999) supports Kadison’s statement naming dispatching of the purchased product and that the received product is not what was expected as the main concern offered by subjects when asked about purchasing online. This again relates to firstly whether the company even exists to deliver the product and secondly if they are capable of developing the infrastructure to complete a delivery. Consumers also raised the concern that they may not get what they expected in quality, size, brand or number. Each of these concerns have been substantiated by the reported incidences in both the US and Australia (US-FTC 2001; Krone and Johnson 2007).

1.2.2.3 Privacy and Confidentiality of Personal Information

Managing privacy and personal information is regulated by government bodies in many countries, however although a business may use information that has been supplied to them for their own business needs the practice of the ‘selling on’ of these details to other marketing companies has become common place. What actually happens to the consumer’s data once it is received appears to be totally out of the hands of the consumer whether it is credit card or personal information. “Personal information can be easily collected, processed, and exploited by multiple parties not directly linked to the transaction” (Pavlou and Mendel. 2006).

A consumer may not be aware of all the data that they are handing over to a business as this is not always obvious. While the consumer is filling out personal data, the system that is behind the form is asking the customer such questions as, where the customer has been online, how often has the customer has been online in the past, and what processor does the customer have? (Dancer 1999). Companies such as Amazon recognise the user when they log on and have a full record of personal details.

In a survey undertaken by Pitkow and Kehoe (Pitkow and Kehoe 1997) it was found that 87% of Web users think they should have complete control over the
demographic information that a Web sites captures. Furthermore, 67 – 75 % of Web users do not even wish to sell their data to Web sites. It was also found that of the 95% of Web users who have declined to provide personal information requested at a Web site at one time or another 69% say it is because the site provided no information on how the data would be used (Hoffman, Novak et al. 1999). Given that such a large proportion of the user population are of the opinion that they should have control of their personal information, the finding that their data was being collected without their permission could undermine their confidence and trust in the e-commerce system.

Once again the issue of the mishandling of personal information by deceitful individuals is available due to the anonymity of the Internet, however, for the reputable businesses there is also the possibility of simply a lack of understanding of the regulations governing personal information that leads to mismanagement and its consequences.

1.2.2.4 Technical Capabilities

As there are no formal regulations governing the setting up of an online business it is feasible and practiced to create applications for payments and sending and receiving information through non secure channels. This sentiment was summed up by Furger with “too many smaller sites refuse to use encryption or firewalls or disclose their policies” (Furger 1998). This leaves both financial and personal information open to ‘eavesdropping’, that is copying information during the transmission from consumer to e-commerce site. There are many technical methods to reduce the opportunities to eavesdrop with encryption, secure servers, password authorities or using a trusted 3rd party to deliver a secure information transmission, however none of these are mandatory and often overlooked by the start up company on e-commerce. The consumer relies on the technical capabilities of the e-commerce business to perform to standards that are impenetrable by hackers.

Poor usability of the business site can also lead to customers moving away from sites. As the consumer’s understanding of the standards expected of a B2C e-commerce site increases so does their expectation of the usability of the site. Other
issues relating to usability include incorrect navigation or providing partial information that can cause confusion and incorrect processes to occur during sales. For example a customer who is unsure if a sale has been finalised given there is no confirmation from the application ends up making multiple purchases.

The challenges to e-commerce consumers trust thus far mentioned depict only some of the many issues faced. As well as the measurable risks reducing consumer’s trust there are also those elements that are immeasurable. A level of confidence that is understood by knowing the agent or sales assistant is not developed in an e-commerce store, thus leaving the difficult task of attempting to build a 1-1 trusting relationship without ever interacting with a human.

While the consumer faces many difficulties in deciding to trust a B2C e-commerce business, the business itself has issues it faces that must be overcome to successfully trade online.

1.2.3 RISKS TO THE BUSINESS

By its physical presence and immediacy of securing a purchase, the ‘Bricks and Mortar’ business has many advantages over e-commerce businesses. In the B2C context products are typically paid for in advance and only received after the transaction.

1.2.3.1 Anonymity of the Internet

In answer to the issues raised by the consumers, businesses must also brace themselves against the unscrupulous purchaser. Unlike the B&M store, consumers have no need of visual identification when they supply their personal and credit card details allowing for falsification and identity fraud.

Security checks with card details or allowing a 3rd party to conduct payments may overcome these concerns but generally in a start up company, the lessons are hard learnt given that they are often the target of fraudulent information.

1.2.3.2 Product Delivery

In a B&M store the sale is immediate and the consumer generally takes the product as they leave. In the main this concludes the transaction. For the e-commerce
business non-repudiation, that is, the denial that the purchase order was ever made, is a risk that involves expense in retrieving the product, refunding payments and in delivery both ways.

1.2.3.3 Privacy and Confidentiality of Personal Information and the Technical Issues

There are many methods of securing a Web application that would reduce the possibility of hackers entering into stored information. Typically the start up company is a primary target for hackers in that they do not always have security at a safe level when they commence. Not only do businesses need to brace themselves from outside intrusions but also from inside. There have been numerous studies to show that while hackers are perceived to be a threat, most security breaches are from within the business itself. One such study by Walker illustrated that of all the attacks on security that had occurred in the past year, 83% of those who were aware of the intrusion said that it had been an inside job. Only 25% of attacks were considered to be for financial gain while the others were considered to be a nuisance or for curiosity. Furthermore, it is estimated that 9 out of 10 security breaches are not even reported in the face of adverse publicity and the concerns with being noted as having insecure systems (Walker 1999). The instances of security breaches have increased considerably at an escalating rate as the Internet becomes more freely available to the community (Krone and Johnson 2007).

It is up to the e-commerce business to persuade the consumer that they are genuine and up to the challenge of providing a safe, efficient and effective online business. This entails not only getting the technical side of their business correct but being able to follow through with fulfillment of delivery and after sales servicing. An e-commerce business must consider each of these risks, including the viability, sustainability, integrity and intrusion of their business.

Consequently it can be seen that there are a substantial number of risks realised by both parties in any transaction and that the development of trust in both directions plays an integral part of being able to pursue a positive, rewarding commercial experience.

The Australian government committed to e-commerce and in a discussion paper on “Moving to an Electronic Marketplace” (Office for Government On-line 1999),
proposed that the first step would be to “build certainty and confidence with clear and consistent policy, legal and regulatory framework.” For the success of B2C e-commerce, if we are to build trust and confidence businesses need to understand the concerns and fears of the consumer and devise means to overcome these. The lack of growth expected by business forecasters together with the evidential data retrieved from research indicates that trust is recognised as a significant problem in the uptake of B2C e-commerce.

1.3 PROBLEM STATEMENT

A general consensus exists that lack of trust is impeding the uptake and progress of B2C e-commerce. For B2C e-commerce to reach its potential in the marketplace it is essential that companies are aware of consumer attitude towards e-commerce that may cause impediments to building trust and impeding its progress. Current research, consumer attitudes current practices require research, collation and interpreting to identify any strategies that may build trust and facilitate its progress.

1.4 SCOPE AND AIM

1.4.1 SCOPE

Electronic Commerce includes the buying and/or selling of goods and/or services over an electronic system. Initially this included phones, faxes and virtual private networks predominantly owned by large business. E-commerce assists with electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI) a business to business (B2B) transactions service, inventory management systems, and automated data collection systems. The advent of the Internet allowed for cost effective initial entry into a field that had previously been restricted to expensive high maintenance infrastructures. Internet e-commerce has made it possible for manufacturers and retailers to reach a global audience with a 24/7 availability. This technology has also reduced the need for a physical storage and large stock warehousing. The
acceptance of the Internet as a tool for conducting B2C transactions is yet to be proved. “As with the emergence of the ATM’s over the past 25 years it could be possibly 10 years into this century before e-commerce becomes a truly significant factor in terms of total commerce” (Wolhandler 1999). As with ATMs the technology has moved into a general consumer market place where there are rules the user needed to understand and the protocols for security when facing a machine. The introduction of a technology such as the ATM took at least ten years to be accepted by the general community and yet the risk was minimised by working with a trusted 3rd party being the banks. B2C e-commerce adds the extra dimension of risk by introducing businesses that are yet to prove themselves in the online market and technologies that are yet to be accepted as trustworthy. While ATMs managed to capture the trust of the marketplace, B2C e-commerce, while growing in uptake, is simultaneously losing current customers through loss of trust (Consumer Web Watch 2005).

This study will consider e-commerce that is transacted over the Internet and the general consumer community (Business to Consumer) rather than the structured business protocols that exists in Business to Business (B2B) e-commerce. Much of the current research relates to the United States and European economies. The target audience will be the Australian consumer, its perceptions and uptake of the technology. The term “trust” will be discussed in Chapter 2 where a working usage of ‘trust’ will be defined for this study.

The study is aimed at Small to Medium Enterprises (SME) which by Australian definition (Australian Bureau of Statistics) relates to employment with small enterprises employing 5 to 19 full time employees and medium enterprises employing 20 to 200 employees. In particular the new SME has been selected as the target for this study as generally they do not have the funds or technical knowledge to enable a wide scale research and implementation of the highest level of design and security that is available to the larger enterprises. For this reason the new SME has to consider cost affective initiatives to assist in developing and maintaining consumer trust.
1.4.2 AIM AND OBJECTIVES

The aim of this research is to develop knowledge of existing and potential control mechanisms and environments that improve trust in B2C e-commerce.

This will be achieved by meeting the following three objectives:

**Objective 1:** to develop an understanding of the position of the consumer in Australian B2C e-commerce SMEs in relation to their knowledge and opinions of the relevance and necessity of recognised e-commerce trust mechanisms.

**Objective 2:** to merge and validate the unified previous discipline specific B2C e-commerce SME research.

**Objective 3:** to build methodological knowledge to assist B2C e-commerce SMEs to develop and maintain consumer trust.

The following questions will be posed in order to achieve the above objectives.

**Question 1:** What is the position of the consumer in B2C e-commerce SMEs in relation to their knowledge and opinions of the relevance and necessity of recognised e-commerce trust mechanisms?

**Question 2:** Does the merging and validating of the previous discipline specific B2C e-commerce SME’s research enable a richer understanding of the consumer perspective of B2C e-commerce trust when presented as a unified research?

**Question 3:** What methodological knowledge could assist new B2C e-commerce SMEs develop and maintain consumer trust?

The outcomes of this research are intended to be of use to both businesses and consumers. Firstly, though not primarily, companies wishing to build a trustworthy B2C e-commerce business. Secondly to assist consumers in making an informed decision in trusting a B2C business, as much as it is possible, when purchasing goods and/or services online.

1.5 OVERVIEW OF STUDY

Chapter 2 will discuss the methodology and methods adopted for this study. To achieve the previously stated aim, Chapter 3 will consider the notion of trust and its relevance in a B2C e-commerce context. This chapter will discuss the concepts of
trust and establish a working definition of trust for this study. Chapter 3 also investigates through experimental study, the existence of trust issues in B2C e-commerce within the scope of this study. It reflects on a previous study that questions if consumers are aware of the significance of the available security measures and if their decision to use e-commerce is based on sound judgment. Finally it turns its attention to the generation raised during the computer era to compare and contrast their knowledge, awareness and concerns in respect to B2C e-commerce trust with the non computer era generations. After establishing the extent of concern with trust and the multi-disciplinary nature of B2C e-commerce, Chapter 4 revisits the notion of trust in the B2C context and isolates recent streams of research in this area. Significant models of B2C trust are categorised within the main streams of research allowing critical reflection on a number of conceptual concerns and omissions due to the fragmented approach of much of the current research. Factors are then extracted from prominent peer reviewed research in the development of e-commerce models to merge the e-commerce models, and define the terminology used by the different disciplines, allowing for the removal of redundancies and overlap. Furthermore this chapter unbundles the definition of trust to include a broader understanding of the issues involved in B2C e-commerce. The study in this chapter leads to the development of the Multi-Disciplinary Model of Trust (MDMT). Chapter 5 undertakes testing in order to validate the model developed and identify any superfluous factors that may be omitted. This study also identifies anomalies in the current model. Chapter 6 undertakes case studies to identify the reasons for the anomalies identified by the previous study and the methods used to overcome these. The case study will discuss how the identified businesses have implemented strategies to induce trust and how they have identified risks that require strategies to overcome threats and risks on an ongoing basis. Chapter 7 analyses case studies to determine strategies SMEs have adopted to build and maintain trust before, during and after start up of their online business. Discussion of issues raised through the study is undertaken and conclusions drawn in Chapter 8.
CHAPTER 2
RESEARCH DESIGN

This section will discuss and argue for the choice of discipline and design methodologies selected. Following this will be an outline and discussion of the User Centred Approach (UCA) with the Human Computer Interaction (HCI) and the Information Systems (IS) methodologies to be used. It will also outline the logic of the progression of the study.
E-commerce itself is multi-disciplinary and requires the integration of technology, visual design, business acumen, sociological and psychological considerations. To research trends and phenomenon that occur within e-commerce it is necessary to be aware of the currently available literature and research being undertaken in each of these areas as well as their respective requirements in the development of an overall strategy.

This research aims to identify issues with trust in B2C e-commerce from a user perspective requiring substantial interaction with primary users. This identification is to assist in the design of a trustworthy consumer application. Therefore to obtain an overall understanding of the issues that arise within trust and e-commerce the multidisciplinary approach of human computer interaction has been adopted.

There are numerous definitions of Human Computer Interaction (HCI) given its multi-disciplinary nature and the need to describe activity and behaviour from multiple perspectives. These include the origins of HCI in traditional psychology, scientific design methods and an engineering perspective, the varying disciplines each recognising their stake in HCI and requiring methods to formalise the analysis, design and testing phases of development. To understand the requirements for designing a trustworthy B2C e-commerce application each of these interpretations needs to be considered. Long and Dowell define HCI as “the use of knowledge to support practices, seeking solutions to a general problem having a particular scope” (Long and Dowell 1990). Preece et al. define HCI as “the study of designing computer systems that support people so that they can carry out their activities productively and safely” and as “a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of the major phenomena surrounding them” (Preece 1994). These definitions emphasise the importance of the identification of the problem, the inclusion of users in the development of the solution and understanding the context in which the product is to be used. The ISO standard 9126-1 defines the quality in use to include the “effectiveness, productivity, safety and satisfaction”. 

2.1 DISCIPLINE
The proximity of the discipline of HCI to Information Systems in certain areas will allow for research methods that are defined within both disciplines to be included in order to undertake exploratory research.

The discipline of Information Systems entails the juxtaposition of both technical and non technical artifacts, such as computer systems working in human oriented arenas. This is a position that is reflected in the discipline of e-commerce. It is then easy to understand the need for reflection and implementation of research methodologies that are involved in both the ‘hard’ sciences and the social sciences to embrace the diversity (Clarke, 2002). The following section will discuss the foremost general approaches to research methodologies, these being positivism, interpretivism and critical theory, and consequently their application to the phases and questions offered within this research. These methodologies will form a basis for the research perspective and direction.

2.2 RESEARCH METHODOLOGY

The first questions that must be considered when selecting a research methodology are in relation to the motivation for the study and the intended use of the outcomes. This then begs the question, who is the intended audience and what is the intended usage of the research?

Given the relative infancy of e-commerce in industry there has been a tendency in these early stages to concentrate on the initial implementation and dissemination. The technology and consequential uptake has been moving at such a substantial speed that it attracts research posthumously enabling an understanding of how consumers and industry have reacted to the latest innovations in the environment that existed at the time of its release and uptake.

The research that is to be undertaken in this thesis in e-commerce trust is not to consider a phenomenon that has passed but one that has and will underpin each new innovation as it is brought into existence. It is intended that the audience that will primarily benefit in the main will be those in SMEs who are endeavouring to create a trustworthy virtual business. These enterprises may already exist in the B&M world or may be venturing into e-commerce in the virtual world only. The
secondary audience is other researchers in e-commerce who may wish to build on these studies to further their own research.

The determination of the audience assists in deciding on the motivation of the study. The research methodologies to be considered being pure research and applied research can be distinguished not only by the methodology undertaken but also the motivation of the study. Pure research theory aims to contribute to the understanding of the theoretical and the abstract, the motivation being the advancement of knowledge. Pure research theory may form a basis for research that is applicable to real world solutions however this is not achieved without some form of applied research. Applied research is directed towards practical applications to be undertaken by an end user to intervene into personal, organisational or social processes (Clarke 2002). Applied research therefore is more applicable to finding business solutions such as in this study of understanding and overcoming trust issues in e-commerce.

There are three major research traditions in the field of information systems that are perceived to be most relevant to electronic commerce particularly due to its multi-disciplinary nature. The research methods are positivism, interpretivism and critical theory.

August Comte (1798-1857) initially proposed the concept of positivism as the only acceptable form of research, in that positivism disassociates context from observable, measureable, non meta physical facts. Positivism research rejects the notion that there exists the observer’s influence over the study given that the observer is not influenced by the observation and measurement (Meredith, Raturi et. al. 1989). Positivism maintains that basic laws and truth derive all knowledge and that logic can be used to obtain positive conclusions independent of the context of the situation in which it occurs. Positivism research is derived from a body of theory guided by a theoretical framework. In order to undertake positivism research it is essential to define the research question and the explicit hypotheses to which well-defined research techniques are applied.

Much debate regarding the ability to remove the social context ensued in particular from the social sciences. It was determined that the selection of methods to carry out the investigation and how conclusions are to be formulated, motivational drives
for undertaking the research and goal directions all influenced the research outcomes and biased the observations and measurements of the researcher. Golinski describes the choices that are made by scientists and their managers are constructed by their aims, interests and resources (Golinski 1990). This leads to subjective methodology selection, data retrieval and analysis. The stringent concepts of positivism formed the basis for research rigidity and discourse until the end of World War 2.

The postpositivist paradigm followed the decline of positivism after substantial criticism of the exclusion of context as a variable to be considered in the research outcomes. Postpositivism proposes that knowledge is not necessarily set in stone, that while the research outcomes are valid and warranted, they are considered to be modifiable or even revokable given further evidence. In contrast with positivism, postpositivism claims that it is not possible to separate the researcher and the research and that reality can not be defined or comprehended seperatly from culture or values (Philips and C. 2000; Zammito 2004).

An alternative to the strict regime of positivism in the search for truth and reality is interpretivism which defines the knowledge of reality is as constructed by the individuals involved. The work of Max Weber (1864-1920) who has been attributed as a major contributor to the concepts of interpretivism suggests that social sciences are concerned with ‘understanding’ in comparison to ‘explaining’. Observations and perceptions of the researcher are considered to be modified by the social surroundings, life experiences and education of the individual. Interpretivism claims that knowledge of reality cannot exist without social constructs, that to understand the phenomenon the person or action to be studied must be placed in a context that is comparable to a real world experience or as described by Lee as ‘Life World’ (Lee 1999). The acceptance of the fluid nature of knowledge in relation to an everchanging world coupled with the researches own biases creates an expectation in interpreted research that there will be more than one explanation for the same phenomena and that this must be acceptable.

Much debate followed the introduction of interpretivism as an alternative rigourous research methodology. The subjectivity and informal ad hoc experimental methodology and the use of induction for the development of conclusions
were reasons offered for the rejection of interpretivism. Interpretive researchers on the other hand were of the opinion that the nature of their research involved humans and that the positivist research did not allow for the full understanding of the complexities involved in human behaviours and influences.

The third distinct approach to research to be considered is Critical Theory emerging from the Frankfurt School, a term which described a school of thought of several generations of Western European Marxists who were German philosophers and social theorists. Critical theory goes beyond the development of knowledge and understanding although it uses many of the methods and tools available to interpretivism, and moves to challenge the status quo where there is conflict and oppression with the intent of bringing about change. This methodology has been well employed in areas such as Marxism and feminism where inter human behaviour needs to be confronted and rectified for the betterment of man/womankind. Critical theory may well be applied in the area of e-commerce in relation to globalisation and the further denigration of the gap created by the implementation of technology. The research under study in this thesis does not fall within the methodology of critical theory.

It has become accepted that argument over preferred research methods does not assist in improving knowledge. Interpretivism and positivism both create and describe a structure in which the research is to be undertaken. Interpretivism and positivism have both acquired rigourous socially accepted tools to assist in the development of knowledge using accepted iterative logical procedures to obtain conclusions. Interpretivism and positivism have both developed acceptable testing methods to ensure the conclusions reached are logical and justifiable. These aspects of interpretivism and positivism render these as viable research methodologies. This acceptance of other views allow for a richer understanding of the world and its inhabitants from varied equally valid conclusions leading to more informed knowledge.

Clarke (Clarke 2002) discusses the techniques that can be defined as positivist that are relevant to the e-commerce research domain as forecasting, field experimentation, quasi-experimental designs and laboratory experimentation. The
field of information systems still in its infancy and consequently does not have a strong body of theory to call upon and thus is required to fall back on theory from the related disciplines of marketing, computer science and business.

The pure interpretivism approach to research is discussed by Clarke as including descriptive/interpretive research, focus group, action, ethnographic and grounded theory although the defining as either interpretivism or positivism research methods may not be easily defined. Classification can be dependant on the rigour of the application to instruments, design, validation, data capture and validation or the acceptance of alternative perspectives, recognition of short fallings and ambiguities in the data and the context. The methods considered suitable for e-commerce are field studies, questionnaire-based surveys, interview-based surveys, case studies and secondary research.

Clarke determines that within e-commerce there are opportunities to encompass both quantitative and qualitative research. Generally due to the rigour of positivism it is aligned with quantitative data whereas interpretivism is aligned with qualitative data. Information Systems offers methods of critical analysis that can be undertaken through reviewing literature within the e-commerce discipline and in cognate disciplines which lends itself to the cross discipline nature of e-commerce.

Surveys, field studies, focus groups, case studies and laboratory experimentation amongst other research methods are all considered to provide both qualitative and quantitative data that will assist in the analysis of the socially affected environment of e-commerce.

Due to its multi-disciplinary nature, e-commerce does enable some post positivist qualitative research to occur, however in the main the determination of trust is subjective and influenced by the beliefs and socialisation of the observer. The very decision to research trust brings a bias towards a social aspect of human nature and the recognition that individuals, including the researcher, view trust from various subjective social determinants. As there are numerous stages in this research each stage will be further analysed in its determination of deriving qualitative or quantitative data relating to the nature of its investigation.

The derivation of research methodologies in the commencement of each of the studies will assist in determining the direction of the research by identifying relevant
methods and modes of enquiry and ideological stance to ensure the eventual determination of solutions to the identified research questions within the scope of enquiry.

2.3 RESEARCH METHOD

This section will firstly describe the relevance of the HCI principles with a user centred approach in researching trust in B2C e-commerce and secondly describe how the research process follows the principles described in the discipline section above.

The structure adopted in this research incorporates the characterisations of HCI as defined by leading researchers in this discipline. These will include an overall User Centred Approach and more specifically, conceptualising of the problem, researching current practices and theories and iterative refining requirements and testing.

The methods and activities adopted to achieve each of the phases of this research will be both HCI and IS as described by Clarke (Clarke 2002) and discussed in Section 2.2. The relationship between activities and phases will be displayed in Figure2-1.

Table 2-2 will display the methods selected to achieve the objectives of Section 1.4. The relevant HCI or IS discipline and paradigm is then associated with each method selected.

2.3.1 USER CENTRED APPROACH

The nature of this research is to study the responses of the end users in how they react and interact with B2C e-commerce. The identified research problem as described previously has demonstrated that features of B2C e-commerce may require redesigning or representing in a new context, given that many consumers or potential consumers do not accept the status quo as trustworthy to an acceptable level. A user centred approach to development of design requirements will optimise the inclusion of human skill and judgment to allow for an understanding of the trust factors that would assist in the growth of e-commerce. This will be done by
employing the first 2 principles of the user centred approach as outlined below. This renders the inclusion of users as imperative to the success of this research. The 3rd principle of a user centred approach follows as outlined by Gould and Lewis (Gould and Lewis 1985):

**Principle 1: Early focus on users and tasks**
Understanding who the users are, studying their behaviours and attitudinal characteristics.

**Principle 2: Empirical measurement**
Observation and measurement of reactions and performance of intended users to designs.

**Principle 3: Iterative Design**
   a) Reacting to problems found in user testing.
   b) Refining of requirements and designs.
   c) Repeating the process of design test, measure and redesign with user input.

To understand the actions and reactions to B2C e-commerce the inclusion of user groups crucial to the success of this study include B2C e-commerce customers, potential B2C e-commerce customers and B2C e-commerce businesses. These primary stakeholder groups offer experience and knowledge that has been developed over time and has had the opportunity to mature to a level where their understanding of the situation can be quantified and qualified.

**2.3.2 RESEARCH STRUCTURE**

To enable this study to reach its defined aim as restated below, the aim has been broken down into phases. These phases follow the aforementioned principles of HCI. Within the structure of designing using HCI development the emphasis is on the requirements gathering stage. Understanding the problem and identifying the factors and methods to overcome the problem are the key issues. Emphasis has been placed on developing knowledge in regards to the requirements for creating a trustworthy business. There has been no attempt to propose a full design specification as B2C e-commerce is being considered as an entirety and not the requirements of an individual company. Actions to achieve these phases include
verbal protocol usability testing of current sites, reviews of current literature and case studies. These methods integrate research methods of both HCI and Information Systems.

Research Aim (restated): The aim of this research is to develop knowledge of existing and potential control mechanisms and environments which improve trust in B2C e-commerce.

**Phase 1:** Identification of the Situation of Concern (Newman and Lamming 1996)

**Phase 2:** Development of a Problem Statement (Long and Dowell 1990) (Newman and Lamming 1996)

**Phase 3:** Verification of the problem within the research scope (Long and Dowell 1990) (Newman and Lamming 1996)

**Phase 4:** Building of an understanding and development of knowledge in relation to methods to overcome the problem (Long and Dowell 1990). Development of enhancements to specifications and requirements (Newman and Lamming 1996)

**Phase 5:** Recognition of factors that will assist in the design and support mechanisms to ensure productive and safe product use (Preece 1994)

**Phase 6:** Evaluation of the factors identified to assist in developing and designing product and environment with the study of the major phenomena surrounding (Preece 1994).

Phases 5 & 6 are to be reiterated until the aim has been achieved.

Figure 2.1 describes the relationship between the HCI principled phases as stated above and the relevant activities undertaken to accomplish these objectives.

In order to answer the previously stated research aim as previously stated it is necessary to adopt research paradigms that align with the information and data required for a successful solution. O'Leary suggests that while the allocation of research paradigms was an easy task in the past, this is no longer the case with the dramatic increase in the number of research methods, particularly in the social and applied sciences (O'Leary 2004). This echoes the sentiments of Clarke (Clarke 2002) as previously discussed in methods that overlap in positivism and interpretivism dependant on their implementation.
**Aim:** To develop knowledge of existing and potential control mechanisms and environments which improve trust in B2C e-commerce

![Diagram showing relationships between the HCI Principle Phases](image)

**Figure 2-1:** Relationships Between the HCI Principle Phases.

Creswell (Creswell 2005) recognised that identifiable categories of questions lend themselves to specific research methods that follow specific research paradigms. Table 2-1 identifies the paradigm that is adopted for each of the posed questions given that the question type determines the method to be adopted. While there is no clear delineation between the positivism and interpretivism of each study, the more rigourous quantitative studies below reflect a positivist approach while the qualitative studies are interpretive.

Delineating between Information Systems and Human Computer Interaction methods is not always possible given the overlap and usage of one another's methods. However, for the purpose of clarity, aspects of each discipline's methods
have been followed and referenced where they are used. The categorisation of the relevant discipline appears below.

| Question 1: What is the position of the consumer in B2C e-commerce SMEs in relation to their knowledge and opinions of the relevance and necessity of recognised e-commerce trust mechanisms? |
|---------------------------------|-------------------------------------------------|------------------------------------------------|
| Objective                        | Method and Discipline                          | Paradigm                                      |
| Establish current perspective of trust and knowledge of trust mechanisms in B2C e-commerce SMEs | Online Surveys, HCI and IS (Andrews 2003) | Quantitative and Qualitative                  |

| Question 2: Does the merging and validating of the previous discipline specific B2C e-commerce SME’s research enable a richer understanding of the consumer perspective of B2C e-commerce trust when presented as a unified research? |
|---------------------------------|-------------------------------------------------|------------------------------------------------|
| Objective                        | Method                                          | Paradigm                                      |
| Define trust and relate definition to e-commerce | Multi-disciplinary review of trust literature, IS (Tornatzky & Klein, 1982) | Qualitative                                   |
| Review current e-commerce trust models | Multi-disciplinary review of e-commerce trust models literature - IS (Tornatzky & Klein, 1982) | Qualitative                                   |
| Merge current e-commerce trust models to develop multi-disciplinary model of trust | Model Development - IS, HCI (Kuniavsky 2003; Mayer 1995) | Qualitative                                   |
| Identify consumer reaction and any phenomenon of consumer behaviour when exposed to e-commerce trust and trust mechanisms when presented in a non discipline specific view while verifying the factors of the merged model | Laboratory Based Survey - HCI (Preece, 1994) | Quantitative and Qualitative                  |

| Question 3: What methodological knowledge could assist a new B2C e-commerce SME develop and maintain consumer trust? |
|---------------------------------|-------------------------------------------------|------------------------------------------------|
| Objective                        | Method                                          | Paradigm                                      |
| Determine vendor methods to overcome consumer concerns with B2C e-commerce identified in the testing of the multi-disciplinary model of trust and establish best practices in encouraging and maintaining consumer trust. | Case Study - IS (Yin 2003) | Qualitative                                   |

Table 2-1: Questions and their Relative Adopted Paradigms
2.4 SUMMARY

B2C e-commerce incorporates multiple disciplines and consequently requires relevant research methodologies and methods to understand its diverse nature. In order to understand B2C e-commerce from the perspective of the user, HCI techniques are to be employed. Research techniques recognised as applicable to Information Systems will also be employed to gain an understanding of a changing environment that is continually adapting both technically and socially.

The emphasis of this study is on consumer trust in B2C e-commerce. An understanding and working scope of B2C, the consumer and e-commerce have been defined for this study in Chapter 1. The term trust however encompasses varying definitions depending on its context and the discipline from which it is perceived. The following Chapter will consider trust as viewed through the relevant e-commerce disciplines and develop a working definition for this study.
CHAPTER 3
THE ISSUE OF TRUST

This section will first consider the introduction of the Internet as a technology to the general public. Models from the Information Systems discipline will be considered to offer an insight into the acceptance of e-commerce as an introduction of a new technology. The Technology Acceptance Model (TAM) is combined with the human aspect of the Theory of Planned Behaviour (TPB) and the Control/Party Trust equation. This creates a broader understanding of the Human-Computer Interaction that is occurring with e-commerce. Definitions and discussion of trust through the disciplines involved in e-commerce, these being technology, psychology, sociology and commerce, and how these definitions have affected the understanding of trust in e-commerce then will be discussed. E-commerce encapsulates each of these disciplines and requires an overall view of the “what is trust” question in order to understand the position of trust in e-commerce. This study will form an underpinning of the following chapters in that it will define a working definition of B2C e-commerce trust and will bring to the fore the need to consider trust in e-commerce from a multidisciplinary aspect. Chapter 4 will rely on these findings to develop an integrated model of trust.

This chapter next tests the extent of the trust issue with B2C e-commerce within the scope of an Australian audience, an area that to date has received insufficient attention.

The initial tests and results were part of a previous study for a Masters degree and are introduced in Section 3.9 A subsequent investigation was undertaken as part of this research thesis to test for the existence of an alternative view of B2C e-commerce trust in a subset of Australian participants whose exposure to the Internet has been throughout their
formative years. Further more the aim of these studies was to establish if consumers are able to determine if a site is communicating trustworthiness by recognising security processes and protocols to facilitate trust and consequently reduce the risks involved in undertaking e-commerce transactions. The methods, results and discussion of these tests are reported in this chapter.
3.1 INTRODUCTION

The Internet was designed for the dissemination and collective pooling of research for researchers. The open design was never intended for commercial use and consequently was not developed to ensure the security and risk management required within the business arena. Consequently it has been left to the users of the Internet to develop their own strategies to create a trusting environment from the vendor’s perspective and derive trust from the consumer’s perspective. Trust is an essential element and basis for all B2C e-commerce.

Trust is a term that has been defined in many disciplines throughout time. The definition of trust generally relates to the actors involved and the situation at hand. B2C e-commerce encompasses many trust situations including trust with technology, the individuals involved in supplying the technology, the business receiving personal information and those involved in fulfillment. Each situation requires varied levels of trust with the technology and with individuals both known and unknown. Without trust e-commerce transactions would not be able to occur. Trust reduces the costs of control structures and allows for the adaption of social systems (Uslaner 2007).

3.2 TRUST WITH TECHNOLOGY

The introduction of B2C e-commerce took the emphasis of the Internet solely as a research tool into the commercial world and therefore to a wider community. While a proportion of the world population initially saw value in the Internet for questions and responses, a larger proportion of both businesses and consumers could see the advantages that were being offered by a 24/7 global market with high accessibility and lower overheads. This gave rise to a new group of potential consumers who were to be encouraged to use Internet technology. The appeal was not to be aimed solely at those who had been raised with computers and the Internet but to a wider audience, who may have never used a computer, but were holders of credit cards and therefore potential customers.
The process of gaining or losing trust can begin as early as the first mention of a new technology (Fishbein and Ajzen 1975), before even clicking on a Web site, as to whether a user would be inclined to use Internet commerce with a particular company or even to use Internet commerce at all. Inclinations towards new technologies can form a bias that can encourage or deter a customer from Internet-commerce technology.

To understand the rationale behind a consumer choosing to use or not use the technology involved in B2C e-commerce and the complexities involved in the decision process, we will look towards Self Efficacy Theory (SET) (Bandura 1977), the Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975) and its subsequent developed theories. The concept of trust with technology in the following section relates to the consumer’s perception of the physical technology and not the individuals behind the technology. Technology per se does not constitute moral actions or free will therefore can not be discussed in relation to motivation or trustworthiness (Norman 2004).

3.2.1 SELF EFFICACY THEORY, THEORY OF REASONED ACTION AND TECHNOLOGY ACCEPTANCE MODEL

*Self Efficacy Theory* derived from Social cognitive theory is defined as people’s judgment of their knowledge and capabilities to achieve an outcome or behaviour. This definition was further expanded (Bandura 1986) to include outcome expectancy which relates to the conviction that an action will lead to a prescribed outcome. The theory of self efficacy was applied to the field of information technology with the development of Computer Self Efficacy (CSE) relating to the opinion that a person can produce a prescribed outcome through particular activities with information technology (Gist 1989). Marakas et al. divided CSE into General Computer Self Efficacy (GCSE) relating to a person’s judgment of their knowledge and ability to produce an outcome using computers in general and Task-specific Computer Self Efficacy (TCSE) which narrows this view of CSE to the ability to produce specific outcomes using information technology (Marakas, Yi et al. 1998).
In the uptake of B2C e-commerce an initial step is the decision of whether the individual has the capability and knowledge to produce the desired outcome of navigating the Internet and completing the transaction. The technology involved in B2C e-commerce can be prohibitive to new comers to both computers and the Internet, hence the self efficacy required to overcome the technology begins with GCSE for those who are new comers to computer technology and the Internet and moves to the domain of TCSE for searches, comparisons, navigation, online payment, emails and possibly even parcel tracking and downloading. A high level of TCSE is required to commence B2C e-commerce given that the skills required are quite refined and incremental in their development.

Self efficacy in particular TCSE leads to knowledge of a person’s abilities and capabilities to use B2C e-commerce, however there needs to also be the desire to use the technology. The Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975) derived from SET proposes that people’s motivation or intention towards an active behaviour is influenced by a subjective evaluation that the attitude toward the behaviour is positive and the subjective norm or beliefs by others who influence their decisions that they should undertake this behaviour. A model of TRA is shown in Figure 3.1.

Figure 3-1: Theory of Reasoned Action (Fishbein and Ajzen 1975)

Attitude towards an act such as purchasing through e-commerce is influenced by the consumer seeing this method of transaction as advantageous for reasons of convenience, price, availability or accessibility. The consumer can also draw on their previous knowledge and skills relating to purchasing online to assist in developing their attitude towards their intention.
Social influences are also a consideration, relating to the experiences of those whose opinion is able to persuade the consumer. This can be in terms of friends, media coverage or concerns shown by people of authority such as politicians in handing down legislation or reports such as the Australian Government discussion paper on moving to an electronic marketplace. Together these features of the TRA map a better understanding of the consumers intention to purchasing online.

The *attitude toward behaviour* described in the TRA model is reliant on a number of circumstances surrounding the individual user. With respect to B2C e-commerce the aforementioned influences include a reason or need to purchase online, previous knowledge and ability. The Technology Acceptance Model (TAM) (Davis 1989) as depicted in Figure 3-2, a popular tool within Information Sytems discipline, is used to explain the uptake of technology by dividing the feature of *attitude toward behaviour or act* into two influences.

![Figure 3-2: Technology Acceptance Model (Davis 1989)](image)

Davis proposed that the perceived usefulness and perceived ease of use are directly responsible for the attitude towards using a technology, which in turn influences the behavioural intentions to use. Davis also proposed that if all other factors are held constant, improving the usability of the system, should in turn make the system more useful. Perceived usefulness relates to the consumer’s needs and wants and the ability of the technology to meet these in an effective, efficient manner. The uptake of a technology must improve the current position in order to be perceived as a preferred method. In B2C e-commerce this relates to being able to purchase goods or services in a manner that is timelier, more cost effective, convenient, accessible, available and enjoyable or any combination of these factors.
The perceived ease of use, a fundamental principle to HCI, requires that the consumer would find the usage of the technology to be straightforward allowing the intended use to be achieved with minimal physical and cognitive effort. To be easy to use the e-commerce system would need to have usability, operability, discoverability, simplicity, and learnability. For B2C e-commerce there are common issues that stand in the way of an easy to use site such as poor navigation, not allowing for products to be found, purchases to be made and information to be accessible. The visibility of the system must echo what the system is doing to reduce the possibility of multiple purchasing and ordering incorrect products. Where these features of ease of use are not met there becomes a void in the consumer’s trust in the businesses ability to perform in not only their professionalism of their site but also all other facilities they offer such as fulfillment, privacy and security. Therefore perceived ease of use not only affects the consumer’s pleasure in using the business application but also their trust in the company’s ability to affect all aspects of their business. The TAM model therefore represents an approach to discerning if a consumer would or should consider using e-commerce with a particular site, given there are a set of criteria that should be met in order for the technology to be acceptable.

As previously discussed, there are many other influences on B2C e-commerce given that it is more complex than just the uptake of a new technology. Unlike other technologies such as a spreadsheet or a word processor, the external influences are intrinsic to the success of the use of the technology. The external influences add risk factors that are perceived not to be under the control of the consumer, hence the TRA and TAM represent only the technology that is stable and consistent.

3.2.2 THEORY OF PLANNED BEHAVIOUR : FACTORS SURROUNDING THE TECHNOLOGY

The TRA identifies some, but not all of the considerations required when undertaking B2C e-commerce as its theory attempts to define a situation that is stable and without varying degrees of risk. The Theory of Planned Behaviour (TPB) (Ajzen 1985) as proposed by Ajzen in 1985 is derived from the TRA and recognises
that the control over the behaviour cannot always be complete and therefore the outcome of the intention not always predictable. TPB adds the complexity of the limitations experienced by the circumstances (Figure 3-3).

![Figure 3-3: The Theory of Planned Behaviour (Ajzen 1985)](image)

With B2C e-commerce there are many associated risks as discussed in the introduction, once recognised by the consumer, add to the complexity of their intention decision. Control for the B2C e-commerce consumer in many instances tends to, or at least appears to tend to, lie in the hands of the online business. From the consumer’s perspective the concept of risk can at times be considered to be the same as uncertainty (Grabner-Kraeuter and Kaluscha 2003). The system visibility of an e-commerce transaction often appears as a black hole with no feedback to show the progress of purchase details or payment status. This void is only sustained by a time lag between the purchase and the receiving of goods and often compounded by inaccessibility of human contact. Issues of risk with the business itself and of the technology lead to the need for another level of decision making in whether to trust the technology and the individuals behind the business. This need for trust is depicted in the TPB model as the extended feature of the TRA in perceived behavioural control as it is the perception of the consumer as to their control and how they react to this perception that will influence their intention to use.

Extending the theory of perceived behavioural control affecting the intention to use in an e-commerce environment Tan and Thoen propose further dimensions of trust in controls to include trusting in the party and trusting in the technical controls in place to ensure a trustworthy transaction (Tan and Thoen 2001). These two
considerations are complimentary and work towards giving an overall trust towards the trust in the transaction. Chapter 4 will consider this work in more detail.

Each of these theories, TAM as a subset and refining of a feature of TRA and TPB as an extension of TRA, offer insights into the uptake of e-commerce as a technology from the consumer’s perspective and the need to study these areas in unison and not isolation.

To see how these theories relate to each other in the e-commerce environment it is necessary to incorporate the TAM that considers the uptake of technologies and TPB that extends the research to recognise the perception of control that exists, this is demonstrated in Figure 3-4.

![Figure 3-4: Integration of TAM, TPB and Control/Party Trust](image)

The integration of TAM and TPB offers an insight into the complexity facing the human actor in the trust decision process. Further definition of the multifarious term trust requires consideration in order to achieve a clearer picture of each element and how they relate to e-commerce.

### 3.3 TRUST WITH PEOPLE

The models discussed above included the concept of perceived behavioural control, that recognises there are factors beyond the influence of the consumer. E-commerce does not exist with the consumer in isolation with the technology. The
interaction with e-commerce is physically with the technology and virtually with individuals and societies. In order to exist in society we are required to depend on other people to assist us in achieving our goals. For e-commerce our goals are entwined with the goals of those who are supplying the goods or services. Each of the players in a transaction has a stake in the outcome, hence we are entrusting that each player will work to the beneficial good of all stakeholders. Trust therefore becomes essential for both personal (Golembiewski and McConkie 1975) and economic relationships (Morgan and Hunt 1994).

As has been stated previously e-commerce integrates numerous disciplines and therefore consideration needs to be given to each area in order to understand the whole picture of B2C e-commerce. Adding to the understanding of trust with technology the contributing disciplines to be discussed include sociology, psychology and commerce.

3.3.1 DEFINING TRUST IN PSYCHOLOGY

This section will consider two main streams of psychology research in trust, firstly, the traits required in a trustee and how to calculate these and secondly the need for an understanding of the situation at hand, the persons involved and the consequences of a trusting action.

The psychological perspective on trust is as a personal trait relating to the individual and their trust in individuals. Moorman et al. define trust as a “willingness to rely on an exchange partner in whom one has confidence” (Moorman et al. 1993). This is a fundamental definition relating solely to the trustor and the trustee. Moorman’s definition does not elaborate on the term confidence, how one gains or measures confidence and what are the traits in the partner that should be included as relevant in a confidence calculation. Baier defines trust as “the reliance on other’s competence and willingness to look after rather than harm things one cares about which are entrusted to their care” (Baier 1986). This definition extends that of Moorman et al. and attempts to distinguish characteristics of the trustee that would engender trust in the trustor, these being competence and willingness of the trustee.
The collation of trust literature by McKnight and Chervany argues that definitions of trust can be grouped into four main categories, these include integrity, benevolence, predictability and competence (McKnight and Chervany 2001). These traits represent the characteristics that a trustor would look for in order to build confidence in a trustee. Research in psychology posits that for trust to occur the trustor must believe that the trustee exhibits each of the attributes identified by McKnight and Chervany and further extends the list to include the traits of “responsible, helpful, honest and fair”, (Dwyer and LaGace 1986; Rotter 1971; Altman and Taylor 1973). Due to the virtual relationship in B2C e-commerce, the task of calculating if the vendor exhibits these traits is even further exasperated than a face to face meeting but essential before a trusting relationship can occur.

Lewicki and Tomlinson define trust by “our trust in another individual can be grounded in our evaluation of his/her ability, integrity, and benevolence. That is, the more we observe these characteristics in another person, our level of trust in that person is likely to grow” (Lewicki and Tomlinson 2003). They further recognise there are stages of building trusting relationships stating that the early stages is a calculated expectation of the other parties behaviour given the situation at hand, the possible positive and negative outcomes and the control of the trustor over the trustee.

Other factors considered in the trust definitions by psychologists include the risks involved, the situation at hand and the individuals involved. Deutsch defines trust in relation to the individual as having trust “in the occurrence of an event if he expects its occurrence and his expectations lead to behaviour which he perceives to have greater negative consequences if the expectation is not confirmed than positive motivational consequences if it is confirmed” (Deutsch 1958). In relation to B2C e-commerce the individual is seen to be the consumer and the event a transaction. The definition suggests risk and associated consequences and the need for judgment in relation to the weighing up of the perceived positive and negative outcomes that the individual would be worse off if he trusts than if he does not trust. Zand defines trust in relation to the individual and their willingness to increase their vulnerability to the actions of another individual where they do not have control of their behaviour (Zand 1972). Zand further defines trust as “conscious
regulation of one’s dependence on another that will vary with the task, the situation, and the person”. This expresses an understanding of vulnerability, that is, there are risks involved and that the response will be dependant on the assessment of the risk given the situation at hand and the individual(s) involved in the arrangement. Currall and Judge further confirm the concept of trust and its relationship to risk with their definition of trust as “an individual's reliance on another party under conditions of dependence and risk” (Currall and Judge 1995).

Rempel and Holmes state that “trust is a generalised expectancy related to the subjective probability an individual assigns to the occurrence of some future events” (Rempel and Holmes 1986). This definition introduces a new concept of subjective probability as opposed to objective probability. Trust in e-commerce requires an understanding of the measurable risks such as the level of security being used as well as an estimation of the perceived immeasurable risks such as does this company really exist. The amount of trust required is better understood by gaining an understanding of these objective factors and thereby understanding the extent of the risk.

The psychology literature therefore defines trust in terms of an individual’s confidence in an individuals partner. The individual has a willingness to increase their vulnerability given their reliance on another party to produce a future event with the knowledge that the action will involve risks. The recognised traits that the individual seeks in the partner for a trust relationship are given as integrity, benvolance, responsible, fair, honest, helpful and predictable.

3.3.2 DEFINING TRUST IN SOCIOLOGY

Many of the aspects identified by the psychology trust literature are shared in the sociology trust literature with one main distinction. Trust is seen by the sociologists to be greater than the individuals and cannot be reduced to individual characteristics (Gould and Lewis 1985), it is the mutual faithfulness on which all social relationships ultimately depend (Simmel 1990). Trust is not seen to rely on individuals but to the social structure, nature of the situation and the roles being played. Trust is essential for social order requiring both emotional and cognitive
processes. The social aspect of trust ensures that the conditions necessary for a successful outcome are already in place (Gould and Lewis 1985) (Zucker 1986). Lewis and Weigert’s trust definitions based on Barber (Barber 1983) and Luhman (Luhman 1979) argues that the shift from the view of the individual to that of a society has grown out of our dealings in face-to-face situations to dealings with anonymity. When an act of trust occurs it is supported by social structures, such as purchasing from a stranger can occur as one expects that as a representative of a company they will act with the companies guarantee. This trust is extended to the backing offered by a legal system and the moral structure of society.

Trust definitions in sociology literature then, generally agree with all aspects described above in the psychology literature with the main exception of trust being related to individuals. Sociological trust argues that given the pace of life and globalisation societal trust has necessarily replaced individual trust.

Community trust is an example of social trust where membership within a community implies that each actor abides by the social norms and structure of the community thereby creating expectations of behaviour (Sproull and Kiesler 1991). Therefore, whether the community is defined by culture, race, religion, gender, age, sport or socio-economical status the boundaries and rules are developed and understood by all members. This understanding, whether formally written or understood, leads to trust in each member of the community to act within accordance of acceptable behaviour. Members invited into the community or referred by a member of the community are bound by the governance and social behaviours of the community and therefore expected to conform in order to be a recipient of the extended community trust. This concept of referred trust is extended with the work of Resnick who found that where trustors were members over a range of the same social settings reversed roles became more likely, that is there is an expectation that the other members will act in the same trustworthy manner (Resnick 2002).
3.3.3 DEFINING TRUST IN ECONOMICS

Trust to the economists shares many of the same features as those already presented with the psychologists and sociologists. However, the economists make the distinction of trust as a decision that is made through calculation of risks and benefits known as calculative trust.

To the economists trust can be calculated as per any economic exchange. Calculative trust is defined as “a particular level of the subjective probability with which an agent assesses that another agent or group of agents will perform a particular action” (Dasgupta 1988). Dasgupta also defines the acceptance of a calculative trust as the expectation that the trustor will “perform an action that is beneficial or at least not detrimental to us is high enough for us to consider engaging in some form of cooperation with him”. Both of these definitions require a cognitive decision that subjectively weighs the risks, consequences and the person or agent with which the trustor would be dealing. The consumer, in the case of e-commerce must weigh up what would be the cost if the trust is broken. The consumer must decide if they are convinced that the company will act in such a way as to ensure a positive outcome that will not negatively affect the business they represent or undertake any behaviour that would result in an outcome that was detrimental to the consumer (Anderson and Narus 1990). This concept requires the company to acquire and maintain a positive reputation in order to acquire the trust of the consumer.

The expectation that the company will act in what are considered by the economists to be a dependable manner, is defined as normative trust which holds the belief that people sharing common values have a common concept of moral values (Giroud et al. 2005). The upholding of standards can be calculated and normative trust then applied relative to the understanding that occurs as to the existing norms. These norms in commerce are defined by Ackerman to be “shared rules of conduct that constrain the aggressive pursuit of self interest” (Ackerman, Kiron et al. 1997). To answer the question of how to know if a company is adhering to norms and how to calculate trust using a subjective interpretation of their impending behaviour, economic research offers communication as the key.
Communication, particularly over time and repeated occurrence, creates a forum for all participants in the transaction to obtain an understanding of each others standards, activities, purpose and intention. Communication can also clarify the expected outcome of the transaction, a feature each group of researches has identified as an important aspect in deciding on trust.

Through communication it is also possible to create a false sense of trusting behaviour, this ability is amplified in e-commerce where the normal physical attributes recognisable in a face-to-face situation do not exist. Habermas states that “communication must not be one-sided allowing for manipulation but allowing for fair and open dialogue, free of coercion, manipulation, secrecy concealment or deception” (Habermas 1992).

As well as creating a façade through communication, economic literature discusses the practice of opportunistic behaviour defined as “self-interest seeking with guile” (Williamson 1975). Economists however consider opportunistic behaviour to be fundamental to good economics rather that a negative aspect. This divergence of opinion between a vendor and consumer is said to lead to decreased trust when the behaviour has been recognised by the consumer (Baker 2001). Baker stems his argument from Bonoma's empirical research that suggests that in general society does not accept opportunistic behaviour in long term relationships (Bonoma 1976). This research reiterates the need for predictability, benevolence and integrity as essential ingredients for trust and trust calculation.

When a relationship has been developed between a consumer and a vendor the trust calculation continues in deciding if the relationship is sustainable. The calculation of trust does not cease once the decision to trust has initially been made. In undertaking a calculation of trust it should be continually recalculated whether the relationship is worth sustaining compared to the costs involved in severing ties (Lewicki and V 1996). Businesses rely on the costs of developing a new relationship as a substantial part of the trust calculation by the consumer given that to change partners requires reassessment and establishment of norms and communication. Trust therefore to the economists is based on an understanding of the intentions of the vendor by the consumer and calculating whether the advantages of the
association is substantial enough to sufficiently outweigh those of not transacting with the vendor.

3.4 TRUST IN A B2C E-COMMERCE CONTEXT

There is no consensus in the current literature as to a commonly accepted definition for the notion of trust in the B2C context as has been previously discussed. This observation is echoed by McKnight et al. where they state “there is no agreed upon definition of trust due to different definitions coming out of varying disciplines” (McKnight, Chervany et al. 2001). It is generally recognised however that e-commerce trust definitions were initially extrapolated from the disciplines as previously described. E-commerce varies from these definitions offered by these disciplines to include risks and uncertainty that are not experienced by face to face transactions. As humans we learn to instinctively read body languages, both consciously and unconsciously, the smallest of body movements, pupil dilation or the fake smile can arouse suspicion when fronted by an opportunist. Dealing with strangers is discussed by Baier as differing from trust of a child, a friend or institution (Baier 1986), however Baier does not discuss the inability to be physically present when a trusting relationship occurs. Ambrose (1998) proposes that trust is related to ‘task risks’, that is trust varies depending on the task the user is undertaking. Schoorman et al. (Schoorman and Mayer 2007) further clarified the relationship between trust and risk as trust is the willingness to assume risk, while trusting behavior is the assumption of risk. The concept of trust and risk being related is echoed in all fields of study. The economists who believe that trust can be calculated knowing the risks fail to recognise that with e-commerce the risks being faced are generally unknown, that new risks are continually unfolding. For example, initially concerns related to credit card misuse were extended to include identity stealing, misuse or on selling of personal information and fraud.

E-commerce definitions rely on the definitions offered by the respective disciplines such as sociology, psychology, technical design and commerce. In an attempt to collate the varying disciplinary factors affecting trust, Papadopoulou discusses
different trust categories of system shopping process, vendor, individuals and firm trust in e-commerce, separating out consumer and vendor related trust (Papadopoulou, Kanellis et al. 2001). Each e-commerce researcher has attempted to explain the existence of risks and essential consequential trust and hence developed models of essential factors to overcome the consumer risks and lower the level of trust required.

Cheung et al. (Cheung and Lee 2001) argue that there is confusion by some between the understanding of trust as an outcome and antecedents. This problem manifests itself in testing for effectors of the trust in design and the marketing of the B2C Web site when the antecedent decision to purchase has already been made in the individual’s antecedents of trust. Cheung et al. also recognise two effectors of Internet trust, trustworthiness of Internet vendors and their external environment, and the division of types of trust proposed by personality theorists, sociologists and economists, and psychologists.

The psychologists and sociologists perspective to e-commerce is to consider the individual or social structure involved in the purchasing, recognising personal attributes such as their previous experiences with e-commerce and disposition to trust to be effectors of trust determination (Ambrose and Johnson 1998; Salam, Rao et al. 1998; Einwiller, Ulrike et al. 2000; Kim and Prabhakar 2000; Kini and Choobineh 2000; Kim 2001; Papadopoulou, Kanellis et al. 2001). Designers and HCI researchers regard the experience and perception offered by the site to affect trust calculation (Jarvenpaa, Tractinsky et al. 1999; McKnight, Choudhury et al. 2000; Egger 2001; Fogg, J. et al. 2001). Riegelsberger, Sasse et al. surmise that while designing with trust heuristics in mind it is still not possible to fully control the consumer’s behaviour and recognise the need to design digital environments which will be adaptable to an evolving environment with the “norms and growth of benevolent relationships” (Riegelsberger, Sasse et al. 2005). The technology researchers consider the management and demonstration of the businesses capability to undertake a safe transaction as the main considerations for trust (Grazioli and Jarvenpaa 2000; Cheung and Lee 2001; Tan and Thoen 2001). That risk exists is not questioned by any of the e-commerce researchers, hence controlling these risks to improve the trust is considered the main goal of many.
“Trust is good, control is better” [Lenin]. Lenin’s view is reflected in research from varying disciplines that have considered factors that are required to gain trust in e-commerce. This area of research considers in the absence of a complete knowledge of the trustee, the consumer is able to calculate trust when they are given evidence of trustworthy behaviour and that by controlling the information, design and security that is given to the consumer they can make an informed trust decision. These trust engendering factors as established by researchers and their relationships will be considered in detail in Chapter 4 (Ambrose and Johnson 1998), (Einwiller, Ulrike et al. 2000), (Grazioli and Jarvenpaa 2000), (Cheung and Lee 2001), (Egger 2001), (Kini and Choobineh 2000), (McKnight and Chervany 2001), (Pavlou 2001), (Tan and Thoen 2001), (Belanger et al. 2002), (Van Der Heijden and Tibert 2002), (McEvily, Perrone et al. 2003), (Sitkin and George 2005).

Schoorman et al. who in the past have offered much in the understanding of trust in the fields of management and e-commerce (Schoorman and Mayer 2007) argue that trust development is not instantaneous and that the aspect of time as a required factor to develop trust is intrinsic. Further to their research of 1995 they include the stages of trust building to comprise of propensity to trust at the early stages, judgments of ability and integrity to be built relatively quickly and benevolence to take more time over the partnership. Trust development in the context of time relates to the aforementioned recalculation of the consumer’s position with the trust decision as they become more acquainted with the situation and players involved.

3.5 WORKING DEFINITION OF TRUST

No matter what the context, discipline or the trust beliefs of the consumer, most researchers agree that trust in an e-commerce, B2C relationship is related to risk, or more precisely, inversely related to risk. Trust also involves the consumer’s willingness to be involved in a risk taking situation where it is necessary to calculate the benefits and possible losses subjectively where not all the negative outcomes are known. Trust in B2C e-commerce is dynamic and continually reassessed as more
information becomes apparent. It is from this perspective that this research will consider trust in a B2C, Internet based, e-commerce relationship.

3.6 UNDERSTANDING THE SECURITY ISSUES WITH B2C E-COMMERCE

One of the enduring challenges in the area of business to consumer (B2C) electronic commerce concerns the issue of establishing and maintaining the trust of online consumers. From a research perspective, much attention has been devoted to understanding how potential customers perceive online vendor’s trustworthiness and, on the other hand, approaches that vendors could employ to foster such trust (Jarvenpaa, Tractinsky et al. 1999; Gefen and Straub 2000; McKnight, Kacmar et al. 2003). Newspapers headlines have stories of scams, security breaches and hackers. Although it may be considered that some of the reports are exaggerated media hype they are bound to affect the perceptions of both the consumer and businesses.

Consumer concern with security breaches and fraud has come under investigation by both retail and crime investigators. One aspect of purchasing online is the misuse of credit cards. The Australian Payments Clearing Association reports that card not present fraud (CNP) as used in Internet transactions reached $53.5 million in 2008, up from $32 million in 2007. Fraud within Australia on overseas-issued credit cards rose from $49 million to $92 million in this time. These figures amount to approximately 50% of overall credit card frauds which also include stolen cards, fraudulent application and misuse before receiving of the card. In general in the Asia Pacific region the rate of fraud is 28 cents in every $1000, which is low when compared to the UK where payment fraud rate is around $1.18 in every $1000 (Australian Payments Clearing Association 2008).

Where hacking or a security breach has occurred it is often the case that the company is reluctant to report the incident. "As a rule, [companies] really don't want this information to get out," said Fred Rica, a partner in global risk management solutions for PricewaterhouseCoopers. "They're afraid of eroding customer confidence and afraid that other people may try to exploit that security
breach again” (Hicks 2001). Statistics into e-commerce breaches of security are therefore only able to report on those cases where the businesses have been forthcoming with information. The Annual Computer Crime and Security Survey indicated that while half of the companies experienced security breaches only 29% reported these incidents to law enforcement agencies, the main reason given as previously mentioned relating to negative publicity. The report also discloses that approximately half of security breaches came from inside the company. The types of security breaches include breaches such as system penetration, unauthorised access, theft and loss of proprietary information, password sniffing and misuse of Website application (Richardson 2008).

The research discussed above and in Chapter 1 demonstrates that B2C e-commerce may hold many risks and high stakes. The question is then posed as to whether consumers are aware of the actual risks involved in B2C e-commerce and are they making informed judgments. In the next section we will discuss the concerns and how the consumer can recognise the extent of the risks being presented.

3.7 RECOGNISING TRUSTWORTHY SIGNS IN E-COMMERCE

There are many methods of verification and validation of companies and data transfer security systems that are being used today. Making use of these available facilities is an essential part of a secure e-commerce environment in order to be able to objectively calculate the risks and consequently the trust required. Laws are being written independently and cooperatively around the world to cope with the new global economy that is part of the Internet environment.

There are security processes and protocols that facilitate trust in an e-commerce environment. Six forms to communicate trustworthiness are listed as brand, navigation, fulfillment, presentation, up-to-date technology and the logos of security-guaranteeing firms (Cheskin Studio Archetype/Sapient 1999). Each of these is thought to play a part in perception of trust, on their own, and in unison with each other. For the less known brands it was found that navigation impacted perceptions of the Web site’s trustworthiness. People had more confidence in sites that resemble other well-known sites” (Johns 1998). Although if the “bricks and
mortar” (B&M) counterpart to a B2C e-commerce business is not considered trustworthy, no other methods of gaining trustworthiness over the Web will gain the e-company trustworthiness.

Chapter 1 discussed the risks that existed in using B2C e-commerce, these risks will now be revisited with respect to discussing the methods that are used by e-commerce businesses to overcome these risks and the methods used to obviate their usage to the consumer.

3.7.1 ANONYMITY OF THE INTERNET

It is widely accepted that the Internet has provided opportunities for people endeavouring to undertake unscrupulous behaviour. This has been the case in e-commerce where a business does not have the checks on its behaviour that exist with B&M businesses. Although Consumer Affairs offers the same level of support to customers of Internet businesses as it does to those of B&M businesses, it is not always possible to identify the culprit given the anonymity of the Internet.

Businesses that already exist in the B&M world have already developed a level of trust within the consumer community. They, and their representatives, can avail themselves of their established reputation to the Internet environment. A positive reputation in the B&M world however, does not necessarily ensure the company of a positive reputation in their capabilities as a supplier of B2C e-commerce technology, a separate issue to trust in the existence of the company.

Purchasing a known Brand Name offers one method of overcoming anonymity with B2C e-commerce. The existence and legitimacy of the company can be checked with the manufacturer as an authorised supplier of the goods or service. This presents a reputation transfer of trust from the holder of the brand name to the online supplier.

Testimonials from previous clients may give an insight into the trustworthiness of the company. Keeping in mind that a testimonial is easy to fraudulently create, a testimonial from a trusted, possibly iconic 3rd party such as a celebrity, may assist in building trust.
Verification from a trusted 3rd Party such as Visa, Veri-Sign or other known company that is willing to verify the reputation of the online company. In the case of Veri-Sign and other verification companies this level of verification requires documentation to prove the existence and financial viability of the online company before issuing its approval.

3.7.2 PRODUCT DELIVERY

Product delivery rates high in the concerns of many would be e-commerce consumers. Consumers raise concerns in regards to not receiving their goods, or not receiving the goods they expected. This second concern is not new to e-commerce but has been experienced over the years by mail order customers.

It is essential to alleviate concerns regarding the receiving of the ordered product and that the site makes it perfectly clear how it will deal with the orders made or returns that may be required.

Tracking software exists, such as DHL Online Parcel Tracking, that allows the consumer to trace at any stage of the fulfillment process, the location of their purchase order or if the delivery phase has commenced with their parcel.

A clearly stated returns policy should be included on all sites so that the consumer knows the process and procedures in relations to returns, given that the goods do not match their expectations. This alleviates concerns the consumer may have in regards to how their goods will be dealt with in circumstances where they are not satisfied.

Ambiguity, poor navigation, lack of feedback or simply the lack of understanding of the user process in purchasing online can lead to errors in a transaction. The ability to back out of a transaction and the method to do this should be clearly stated on the site to ensure consumers are aware of their rights and any required processes.

3.7.3 PRIVACY AND CONFIDENTIALITY OF PERSONAL INFORMATION

On selling of personal information is one of the concerns relating to e-commerce purchases. In the B&M world information is not collected about the consumer and hence the opportunity to sell it on to a promotional company is not offered. Secure
information such as credit card details is also available not only to the computer system but to all those who are primary or tertiary stakeholders who have access to the storage of the information.

E-commerce sites should display security and privacy statements as well as an address and a phone number to contact for further information. These statements should clearly declare how personal information will be used and allow an ‘opt out’ for those who do not wish their information to be passed on to other companies. Online companies should inform customers how and what information will be stored and how it will be disposed of when it becomes redundant.

Online business should only request personal information that is required for the transaction, this would remove the concerns users have in regards to the reasons behind why the information is gathered and what it is going to be used for.

3.7.4 TECHNICAL CAPABILITIES

An understanding of a new technology will allow the user to understand the benefits as well as the pitfalls that may occur. Once the functionality has been achieved and the benefits assessed the online user becomes more concerned with the issues raised by the introduction of the technology, in the case of B2C e-commerce security and personal privacy. No matter how safe a site, or how secure their data transmission, it is of no value unless the consumer is made aware of the available security and its value.

The use of security guaranteeing firms such as Certification authority, Public Eye, WEBTRUST, Trust-e, BBB Online Privacy and VeriSign to name a few are valuable to developing trust in the consumer in two ways. Firstly it is a check for the business that they are using security at a level that is acceptable for a secure site. Secondly it is a notification to the consumer that these checks have been made and that security is in force.

Other technologies can be used that move the transaction away from the site and to an already established trusted site. These can be banks, credit card companies or the use of E-cash.
The inclusion of technologies such as AVS (Address Verification Service), Encryption, Digital Certificates, Secure Socket Layer (SSL) can be used to secure payments on e-commerce sites. The consumer would need to look for representations of these on the site to ensure they are in force, such as golden keys, locks and https for secure sites. It should also be clearly stated what level of security is being used.

These are only some of the sites, software packages protocols, watch dogs and strategies that can assist in the concerns shared by both the e-business and the consumer.

There are software products that supply integrity checks and security measures to make the consumer feel more confident in their choice of company and the way in which their personal and credit card information will be handled.

Even with all of the methods available to increase Internet security there is a growing ability to commit fraud on the Internet aggravated by the inconsistencies of international laws pertaining to the Internet. Large organisations and governments are moving together to create better security and unified legislation regarding e-commerce. In the USA an authority has been established that deals with complaints such as the Internet Fraud Complaint Center, thereby recognising the distinction between general consumer concerns and the added concerns exclusive to the Internet.

In all there are many methods used for alerting users to the availability of security on the Web site and studies show that many of these symbols are not being recognised or trusted by today’s consumers. For example the Cheskin research found that 40% of the participants were aware of the Netscape key, however only 24% of those familiar with the key believed that it increased their trust (Cheskin Studio Archetype/Sapient 1999).

The main aim of the following sections through the employment of studies is to determine if consumers are positive about the usage of e-commerce and are they aware of the security measures that are taken to ensure their safety online. This first study sets out to identify the concerns that are experienced by e-commerce consumers and investigate if these concerns are justified in light of available research. This was followed by an experimental study that aims to determine if
consumers were aware of the significance of available security measures and if their decision to use e-commerce were based on sound, informed judgment.

3.8 PROBLEM VERIFICATION SURVEY

Online surveys were selected for each of the studies being undertaken to verify the existence of a problem with consumer attitude to B2C e-commerce. HCI recognises the importance of surveys as they provide information directly from users regarding their ideas and preferences.

To obtain a general consensus of opinions towards B2C e-commerce a large group was to be researched. Surveys offer an opportunity to gather information from a large number of users.

Structured interviews are most useful for a predetermined agenda with specific questions to guide the process. The studies are very specific in their direction in that they are concerned with the fears and trust in B2C electronic commerce. Provision was made for comments by the participant to allow for the capture of information that was not specifically targeted in the structured responses.

The online survey allowed for immediate, real time responses. This is an essential feature of these studies as they require the participant to make an immediate decision based on the information that is available to them at the time. The Internet offers the opportunity to answer questions and not to return to change answers as new information is divulged. These are features essential to the success of this survey.

3.9 STUDY 1 (PRE-THESIS STUDY)

3.9.1 SETTING OF THE STUDY

As this study is part of a previous research only a synopsis will be reported in this section. An online survey was selected in order to reach a large community who were familiar with the Internet. The online survey is recommended in this situation in both disciplines of HCI and IS (Andrews, 2003) and the principles of these will be
followed within these surveys. This initial study involved four Web sites of the same company, participants were presented with different levels of security in order to ascertain their reaction to the requirements of a safe online transaction. Each Web site contained similar basic information regarding a cruise company offering a “too good to be missed” bargain trip down the Nile. Details of the steamer, its history, the trip’s itinerary and fees, as well as a testimonial from a customer and money converter were included.

The sites varied only in the information that they provided regarding 3rd party verification of the existence and fair trading of their company and the methods of security being used in data encryption for the user’s personal and credit card details as shown in Table 3-1.

<table>
<thead>
<tr>
<th>Site No</th>
<th>3rd Party Verification</th>
<th>Data Encryption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 3-1: Security Included on Each Site

The site information was sent via email to solicit participants in this study to five separate campuses at the Swinburne University within Higher Education, TAFE and Corporate Divisions, as well as post graduate students of Information Technology and a Scientific Research organisation in Australia.

The email contained general information about the survey and asked for volunteer participants. The Web site address was included on the email and when instantiated would randomly direct the participant to one of the four sites dependant on their IP address.

Generic profile questions were asked regarding age, sex, e-commerce experience and preferences within electronic trading. Finally the participant was asked if he/she would have completed an online transaction with the knowledge they had acquired regarding this company.
The first page of the survey was submitted after the decision to complete or not to complete an online transaction had been made. The participant could not return to this page in order to change their initial instinctive decision after having been exposed to more details regarding security. This emulated the real life situation of a submit button on a transaction.

Questions on the second page (Table 3-2) were dependant on the site the participant had browsed and the decision about completing an online transaction. On this page the participant was made aware of any short fallings within the site in regards to security measures, or was made aware of the security that was available and its implications.

<table>
<thead>
<tr>
<th>Questions posed to participants after they were aware of the issues relating to security on their allocated site.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why had the participant chosen to complete or not complete the transaction?</td>
</tr>
<tr>
<td>Had the participant noticed the different verification and encryption notices that were present or not present on the site?</td>
</tr>
<tr>
<td>In bringing to the participant’s attention the presence or lack of presence of 3rd party verification and data encryption, had this changed the mind of the participant as to whether or not to proceed with the purchase?</td>
</tr>
</tbody>
</table>

Table 3-2 Survey Questions

Each of the four sites displayed company history, testimonial and different levels of credit card security, and third party verification. After viewing sales data the participants were asked if they would purchase from the company, assuming that they did want the product on sale. All participants’ responses were captured in real time.

3.9.2 CONCLUSION TO STUDY 1

The aim of this study was to establish how consumers perceived e-commerce as a method of conducting business transactions and whether they were aware of the security measures and issues that are intrinsically a part of e-commerce.

It was found that there are substantial problems in the perception of e-commerce as a safe method of business transaction many of the participants stating a concern
with trust. There is a preference for human interaction during transactions, preferably face-to-face or alternatively over the phone.

Knowledge of how to read a safe site and the implications of using non-safe sites was not apparent, this was made evident by the large percentage of the participants who changed their mind on sites which did not contain all the security measures.

The participants included in this survey were randomly selected from age and gender groups. While all participants were users of email, some of the participants had not the exposure to computers as those who have been raised in a generation of the Internet as a research tool, personal entertainment and commerce. A second study was devised following the results of this study to determine the influence of the age factor, given that there is a new generation who has been raised on the Internet as a source of information. The survey group of 18 year olds may or may not yet have experience with Internet commerce, however they would have experience with the Internet and will be the next generation of Internet commerce consumers. To determine if this group of people who have had constant exposure to the net from a young age, view e-commerce differently from the general population, the following study was undertaken.

### 3.10 STUDY 2

A generation is emerging having spent their teenage years with the net as a means of major social interaction and as a vehicle for acquiring knowledge. This generation has first hand, seen the growth of the Internet as a commercial world. This same youth are now entering into the economics of the Web, with the purchasing power of credit cards and easy access to products and services available through Web sites.

This study sampled a population of 18 year olds to determine their perception of e-commerce as a method of conducting business transactions and to see if they were aware of security measures that should be available on a Web site. The focus is to investigate if the lack of presence of these security symbols would deter this generation from using e-commerce and their presence would encourage a feeling of
security in the usage of the site. The results showed that although the participants have been heavily exposed to the Internet with its potential commerce related activities they are not generally knowledgeable of security procedures, nor are they trusting of e-commerce as a safe method of transacting business (Farrell, Farrell et al. 2001).

3.10.1 BACKGROUND TO THE STUDY

It is essential that companies trading via e-commerce are aware of any impediments that may stand in the way of the success and progress of e-commerce. The youth of today have been exposed to the WWW throughout their school years. They are emerging fully conversant with the positive aspects the WWW has to offer, however are they being made aware of their options when it comes to security measures in e-commerce? The focus of this study is on the types of procedures and protocols used to overcome the insecurities felt by 18 year old consumers and to test the knowledge, awareness and concerns felt by the “net generation”. The study was designed to test the response of potential e-commerce consumers to standard markings of company security policies, available data security and their response to sites without such security.

The survey undertaken in this paper uses a commonly recognised symbol of security and a link to a company’s security policies to see if they actually make a difference as to whether the net generation consumer would be willing to make a final purchase.

This study will look at the influences on trust in e-commerce and methods to assist in gaining trust. The study includes details of a survey conducted involving youth and trust in Internet commerce together with conclusions drawn from the data collected.

From the previous study discussed in this chapter it was found that there were substantial problems in the perception of e-commerce as a safe method of business transaction. Participants, in the majority, did not recognise the commonly used symbols as determined by the Cheskin study. Within this study there were multiple sites with varying levels of security as recommended by Cheskin. An interesting
result occurred where many of the participants wished to change their decision to not purchase when they were made aware of the lack of security on their site (Cheskin Studio Archetype/Sapient 1999).

It is intended in this study to determine if the new generation, i.e. the ‘net generation’ is more accepting, trusting and knowledgeable of security involved in making e-commerce transactions.

3.10.2 MATERIALS AND PROCEDURE

Volunteers of the age of 18 replied to an email that linked to four separate Web sites. The participants were randomly sent to one of the four Web sites using their IP address to seed the random number generator. Each Web site contained screen dumps taken from the largest seller of CD's in Australia, a well known and reputed “bricks and mortar” store. The site type was selected as a control representing a common purchasing arena for youth. The site had screen dumps that showed the information page regarding a top selling CD, this linked to the purchase form for this CD. In all other aspects this survey followed the same procedure as the previous survey.

The sites varied only in the information that they provided regarding security policies of the company, the methods of security being used and data encryption for the users personal and credit card details. The security symbol used was the closed/open lock on the Netscape Navigator screen and the https in the URL. The company’s security policy was a link to their security policy information as is currently used by the company. The levels of security varied from site to site as shown in Table 3-3.

<table>
<thead>
<tr>
<th>Site No</th>
<th>Company’s Security Policy</th>
<th>Data Encryption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 3-3: Security Included on Each Site

The participants were asked general demographic questions and finally ‘if they would have completed this purchase after having viewed this site’.
This first page of the questionnaire locked in the participants choice after they had made the decision as to whether to complete the purchase and could not be returned to should the participant change their initial instinctive reply. This emulates a real life situation of a submit button on a transaction.

The second page of the questionnaire was dependant on the site the participant had browsed and their answer to whether the participant would complete the transaction with this company as per the previous study. The questions were asked of the participants were as in Table 3-2:

Each of the four sites displayed product description, and a purchase form with different levels of credit card security and company’s security policy information.

Participants were randomly allocated to sites and asked if they would purchase from the company given that they did want the product on sale.

The site information was sent via email to 18 year olds who had recently completed their secondary schooling and were enrolling for further studies.

The email contained general information about the survey and asked for volunteer participants.

3.10.3 RESULTS AND DISCUSSION

This section will discuss the results obtained from the participant’s response to the four Web sites, their decision and reasons to complete the transaction online (Table 3-4).

<table>
<thead>
<tr>
<th>Questions relating to the participant’s decision and reasons to complete the transaction online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did a symbol of data security determine if they would book online?</td>
</tr>
<tr>
<td>Did they perceive e-commerce as a secure environment?</td>
</tr>
<tr>
<td>Given a choice, which method of transacting business would be preferred?</td>
</tr>
<tr>
<td>Would they have purchased online if they were aware of the security issues?</td>
</tr>
</tbody>
</table>

Table 3-4: Decision and Reasons to Complete the Transaction Online
3.10.3.1 Results of Participants Decision Whether to Continue With the Purchase.

There was a response of 56, 18 year olds to the survey. The entire survey was carried out online. Of these 56 participants there was a larger proportion overall who decided they would not purchase the CD and continue with the e-commerce transaction. 31 participants or 55% decided they would not continue with the purchase while only 25 decided to continue with the purchase. Although overall there were more participants who decided not to purchase the CD, this was not consistent throughout the sites. The sites with the least and most methods of security displayed on the site were both higher for the number of participants who would complete the purchase. Site 2 which contained no security policy and had the Netscape Navigator closed lock had only 10% of participants elect to complete the purchase. This compares with site 3 which had the Netscape Navigator open lock and the company’s security policy displayed had 40% of participants elect to complete the purchase. When all measures of security were displayed (site 4) 55% of participants elected to complete the purchase however when no measures of security displayed (site 1) there were still 53% of participants elected to complete the purchase. Figure 3-5 shows the breakdown of participants according to the four sites.

![Figure 3-5: A Breakdown of Participants’ Responses by Site to Purchase the CD on the Internet](image)

3.10.3.2 Previous Usage of E-Commerce

The participants were asked if they had used e-commerce before. This data was compared to those who decided to purchase and those who would not purchase
even though they had used e-commerce before. Within the survey 15 people had previously used e-commerce and 41 had not. Of the 15 only 7 said they would purchase and 8 said they would not purchase with the company.

A number of those who did not purchase with this company and who had used e-commerce before said they did not trust e-commerce. Some replies to the question “...what would you expect on a Web site in order to convince you that you were purchasing in a secure environment were?”:

- We want to know and be really sure that our transaction is covered by warranty if anything is to happen.
- Give the address of the company where I can get the item personally.
- No, I won't trust e-commerce for quite some time.

The comments showed that there were some definite negative preconceived ideas regarding e-commerce. Participants did not relate their fears to previous unfavorable experiences as participants had in the previous survey, having only just entered the age where they were eligible to use the credit card facilities. For the participants who had decided not to purchase on site, 95% of the comments on the use of e-commerce were negative and definite about not wanting to use electronic commerce for transactions.

3.10.3.3 Preconception of Electronic Commerce

In order to ascertain the preconception of payment the participants were asked to compare different methods of payment that included personal contact either face-to-face, over the counter or verbally over the phone, as well as non-personal methods of electronic commerce.

The participants were asked to rank which method of payment was, in their opinion, the most secure. The personal approach was the most highly favoured by the majority of participants with over the counter considered to be more secure by most of the participants followed by the telephone.

In asking the participants to consider purchasing from this e-commerce site they were being asked in the majority of cases to use a system they do not believe to be the safest form of purchasing. Figure 3-6 shows the participants’ ratings of their perceived security of various methods of transaction.
Other reasons offered for over the counter and phone being considered the most secure could relate to previous positive experiences, the number of years that the consumer has been exposed to the technology, and personal exposure to this technology. Although the 18 year olds have spent as much of their consumer life aware of the WWW and its consumer possibilities they would not have had the exposure to purchasing over the net. Preference is still given to phone and fax despite research that suggests that a high proportion of security problems come from within the company itself.

3.10.3.4 With Further Knowledge of Security Issues Would the Participant Change Their Mind?

On the second page of the questionnaire (Appendix A1), after the participant had already committed themselves to purchasing or not purchasing with the company, they were asked further questions regarding the inclusion of company security policy and data encryption. If a symbol or statement of security were in the site they were asked if they noticed it and if it changed their mind now that they were aware of its existence. If a symbol or statement of security were not in the site would they have changed their mind if it had been on the site.

Figure 3-7 shows the percentage of participants who changed their mind after further information regarding company's security policy and data encryption.
The percentage of participants who changed their mind from ‘Yes’ to ‘No’ raises the concern that there may be a lack of education of e-commerce consumers still emerging from the next generation in what to expect from a safe e-commerce site. Had the participants been expecting the symbols required to verify a safe site they may have initially made a more informed decision and not wished to renege on their initial decision.

3.10.3.5 Did the Participants Notice the Different Security Measures?

Participants were asked if they noticed the different security measures that were used on the site. This was done to determine if the symbols and links that are being provided are sufficient and recognised by the youth.
From Figure 3-8 it can be seen that although the participants have been exposed to the net for many years they are still not aware of what security measures they should be looking for when considering an e-commerce transaction.

3.10.3.6 Does Need or Want Over Rule Common Sense?

In the introduction to the site the participant was told they were intending to purchase the CD and needed to make a decision quickly. It is possible that a consumer may wish to throw caution to the wind when it comes to a time limit. The participants were asked if their decision to purchase had been due to the need to purchase in a hurry. Figure 3-9 shows the responses of the participants to this question.

![Figure 3-9: Site by Site-Main Reason for Selecting to Purchase was that it was a Product They Needed and Had to Decide on Quickly (%).](image)

Less participants in site four said they purchased in a hurry, actually only 40%. It seems they may have been more cautious on site 4. Again it may be that the more information that is given regarding forms of security in verification and encryption notices made them act more cautiously.

3.10.4 FINDINGS OF STUDY 2

The aim of this survey was to establish how the new emerging generation of net users perceived e-commerce as a method of conducting business transactions and to determine if they were aware of the security measures and issues that are intrinsically a part of e-commerce. The participants had in the majority not used e-commerce to date and stated a lack of confidence in ever using the technology, even though they had grown up with the Internet throughout their formative years.
It was found that there are substantial problems in the perception of e-commerce and in particular Internet commerce, as a safe method of conducting a business transaction.

This general lack of trust in Internet commerce by this generation has been irrespective of the chosen site being a known brand name of a well reputed company with a ‘bricks and mortar’ presence. The youth have given preference to other methods of electronic commerce rather than Internet commerce but in the main preferred over the counter to any method of electronic commerce.

The consumer is inundated with information about the large security problems that exist with e-commerce. We assume that because the net generation has been exposed to the Internet throughout their formative years, they will not necessarily be wary of the technology and have a total knowledge of how security works. This has been shown to not be the case. In general the youth surveyed did not distinguish the security measures that were included on the site.

The net generation did not display knowledge about how to read a safe site and the implications of using non safe sites, this was made evident by the large percentage of the participants who changed their mind on sites which did not contain all the security measures.

If the youth are not made aware of security issues and how to follow common sense methods of avoiding e-fraud there will be another generation lost to the e-commerce market.

3.11 SUMMARY

This review of trust related research recognises the multi disciplinary nature of trust and affords an understanding of the complexity of trust as an issue. In particular the integration of the TAM, TPB and control trust/party trust equation demonstrates the complexity of e-commerce in relation to the human factor and their involvement with technology giving rise to the need to research e-commerce trust from a more inclusive disciplinary perspective. Given that e-commerce is a multi-disciplinary area of study the factors that are seen to affect trust are able to be categorised by the discipline relative to the researcher’s background and not
consider the whole picture that is involved with e-commerce. This knowledge will form a basis for further studies in Chapter 4 to develop integrated approaches to trust in B2C e-commerce in order to recognise influencing factors from all disciplines on the consumer and methods that can be employed to assist in any required calculation of trust.

The studies undertaken in this chapter with Australian consumers demonstrate that there are negative preconceptions related to B2C e-commerce. It is also evident that there is a lack of understanding and need for education in relation to the symbols and methods being used for securing a transaction. These studies substantiate other studies carried out in the USA and Europe as discussed in earlier chapters and develop an awareness of the situation in regards to the state of acceptance by consumers of B2C e-commerce in Australia.

The chapter has verified the existence of the problem of trust issues within the scope of a B2C Internet, e-commerce environment with Australian participants. To further the understanding of existing research in B2C e-commerce the following chapter will critically review published models pertaining. To ensure an overall understanding of determinants of trust methods, distinct concepts and factors relating to trust will be merged from the various disciplines as identified in this chapter and redundancies removed where they occur.
The issue of trust in Internet-based business-to-consumer electronic commerce has been explored from a number of different perspectives. The current body of research is diverse and fragmented. Chapter 3 illustrated the existence of the problem of trust as an issue in B2C e-commerce in an Australian context with participants ranging from casual users to those who have been a part of the Internet generation throughout their formative years. Participants in the studies of the previous chapter were generally unable to determine basic safety mechanisms offered by e-commerce sites.

This Chapter critically reviews published models specifically pertaining to trust factors in B2C e-commerce. This review is to further the understanding of research within the involved disciplines as described in Chapter 3 and identify which factors are considered to determine trust engendering factors. For analytical purposes the literature is categorised into three main streams: technological, design and sociological/psychological. Based on analysis and empirical observations, four main areas of concern are identified: an oversimplification of the trust concept, a uni-directional view of trust, discipline centred approaches to modelling trust and a lack of empirical grounding and testing. The merging of the disciplines results in the development of an interdisciplinary model the Multi-Disciplinary Model of Trust (MDMT) which is subsequently tested and analysed in Chapter 5 for all trust engendering factors in unison rather than in a disciplinary, fragmented approach.
4.1 B2C E-COMMERCE MODELS RESEARCH REVIEW

We continue to witness the growth in the global business community of the Internet as a platform for electronic commerce. Much attention is dedicated to the Web, its potential and the risks that it holds for marketing and selling products and services online. In the context of business-to-consumer electronic commerce, the consumer not only compares product and pricing alternatives, but also the risks of conducting the transaction online. The notion of trust is especially relevant in the online context where the intended purchase may be from a supplier that is operating in a different country, time zone, currency and legal system. In the B2C context, products are typically paid for in advance and only received after the transaction. Consequently the issue of trust in Internet-based B2C e-commerce is receiving much global research attention.

Research into trust in e-commerce has been approached from different perspectives and as a result the current body of research is diverse and fragmented. The integration of TAM, TPB and control/party trust equation in Chapter 3 identified the complexity that is being faced by consumers when deciding to trust B2C e-commerce. This integration demonstrated that it was not sufficient to consider B2C e-commerce trust in isolation or simply as a technical concern hence, further analysis of the human factor, their antecedents and behavioural beliefs was investigated within the psychology, sociology and economic disciplines. We draw on this rich interdisciplinary base to rationalise the current thinking pertaining to trust in B2C contexts.

The research within this area has reached a level of maturity where it now requires a more integrative approach to foster a richer understanding for both practitioners and researchers alike. Indeed, there is a danger of a continued fragmented approach, especially the conceptual deficiencies that prevent a more cohesive understanding of B2C trust. Within this chapter an analysis of a number of current models of B2C trust will be undertaken and a critical reflection on the current streams of research.
This section is structured as follows. Firstly revisiting the notion of trust in the B2C context and isolating recent streams of research in this area. Secondly sixteen models of B2C trust are categorised within the main streams of research. This categorisation enables critical reflection on a number of conceptual concerns and omissions due to the fragmented approach of much of the current research. Finally, discussion of concerns and highlighting of specifics that need to be addressed will be undertaken.

4.1.1 METHOD OF CURRENT E-COMMERCE MODELS RESEARCH REVIEW

A preliminary literature review of B2C trust research was carried out by drawing on recent studies from prominent peer reviewed journals and conference proceedings. The review not only centred on publications addressing B2C trust models, but also closely related topics. In preparation for the review, a liaison with a number of research colleagues in the field of e-commerce from various disciplines was undertaken in order to identify prominent outlets for trust publications in e-commerce. This preliminary review yielded in excess of 50 relevant studies of B2C e-commerce trust models. Although this is not claimed to be an exhaustive review, the approach was to be inclusive rather than exclusive. In examining the results of the preliminary review it was noted that there was considerable overlap between the different studies. Many of the models were extrapolations or interpolations of previously published concepts and models. The primary focus was on identifying novel and original studies as opposed to adaptations and extensions of existing models. These studies were subsequently analysed and were complemented independently in light of current empirical fieldwork. This approach compares to similar reviews of this nature within the discipline of Information Systems (e.g. Tornatzky & Klein, 1982). A greater emphasis was placed on research studies that displayed a high level of rigour in terms of methodology in its establishment of concepts and models.

It was found that the literature review could be classified into three main focal areas: technological, design and sociological/psychological perspectives. This again emphasised the interdisciplinary approach adopted within this study indicating the
main thrusts and models of B2C e-commerce trust. It also allowed for the questioning of some of the contemporary thought emanating from the current literature. These classifications will be expanded in the following sections.

Given the lack of consensus for a definition in B2C e-commerce trust the working definition as defined in Chapter 3 will be employed throughout the rest of this thesis.

4.1.2 PERSPECTIVES OF B2C TRUST

There is little correlation between the studies and the independence of the variables posed as being responsible at some level for the mistrust in e-commerce technologies. Chapter 3 discussed the multi-disciplinary nature and complexity of B2C e-commerce relating to the relevant discipline specific definitions of trust. It was also further demonstrated in Figure 3.4 through the integration of the TAM and TPB that consideration to disciplines in isolation can not give a complete understanding of e-commerce. Chapter 3 concluded that developing an overall picture of trust in B2C e-commerce requires the integration of the relevant disciplines including technology, visual design, business acumen, human computer interaction, sociological and psychological considerations. To date research approaches in developing and understanding B2C e-commerce have followed the discipline from which the author’s orientation belongs.

It is from this position that we bring together the research and evaluations that have been undertaken to date. In the section an analysis will be undertaken and a discussion of the perspectives of B2C trust, the pertinent models that exist in recent literature and the major issues raised.

A number of perspectives on B2C trust were apparent from the literature. These emanate from the variety of disciplines that have an interest in electronic commerce and B2C electronic commerce in particular. From the preliminary review three main perspectives have been isolated across the various disciplines for categorising the research studies pertaining to B2C trust models. These are technological, design and sociological/psychological perspectives. A brief overview
will be provided of each of these research streams by focusing on some central areas of emphasis.

4.1.2.1 B2C Trust From a Technology Perspective

This stream of research deals with trust issues such as encryption, verification and authentication of vendors and consumers. Studies cover the application of technologies such as 3rd party validation certificates, fulfilment methods, order tracking and handling of consumer data. There are a number of avenues within this stream that focus on the techniques to make the technologies adopted "more visible" to the consumer in order to foster trust.

Many studies have attempted to test the consumer's perception of technology usage and its level of importance in creating an environment of trust in B2C e-commerce.

4.1.2.2 B2C Trust from a Design Perspective

This stream of research broadly deals with the influence of design issues such as aesthetics, metaphors and usability on trust in B2C contexts. Many design issues such as ease of use, tailoring, amateurism, perceived business size and reputation, and enjoyment have been raised over time especially within the area of Human Computer Interaction (HCI).

Design issues incorporate HCI methodologies and cover research efforts aimed at simulating real world experiences and processes online in order to foster a familiar and trustworthy environment for the consumer. This includes the use of well-known metaphors such as “shopping carts” and design of the Website to simulate a physical “bricks and mortar” store layout.

Research efforts in this stream deal with design guidelines that seek to engender consumer trust of Websites. Design issues such as the incorporation of company logos, privacy statements, style and their impact on trust, and perceived reputation all fit into this vein of research.

4.1.2.3 B2C Trust from a Sociological/Psychological Perspective

This stream of research encompasses studies that examine issues that are external to the e-commerce artefact but intrinsic to the individual’s socio-psychographic
makeup. Such studies relate to the individual’s propensity to trust. The latter is based on preconceived beliefs, attitudes and intentions towards e-commerce in general, technology in general and ultimately how these should be considered in terms of Web site design, marketing, advertising etc..

It is claimed by some studies that fears and concerns can be allayed by carefully crafted B2C implementations and the use of effectors of trust such as testimonials, transitional reputation, trusting beliefs, propensity to trust, perceived usefulness and usage of brand name.

This stream of research seeks to establish correlations between these effectors and the behaviour of study participants, site usage statistics and ultimately purchasing behaviour.

4.1.3 REVIEW OF PERTINENT B2C TRUST MODELS FROM LITERATURE

The various themes addressed by the B2C models in the studies in our review will now be classified and summarised within each of the perspectives as outlined above. The classification reported here enables the analysis following later in this section. Where elements of some studies could reside in more than one category they have been classified as such. In addition, for each model included in our final review, the nature of the trust relationship being modelled (e.g. from the vendor's or consumer's viewpoint) has been assessed and also whether the model was empirically tested (and if so, how this was achieved). A summary of the findings appears later in this chapter in Table 4-1.

4.1.3.1 Technological Perspectives

In the relatively new B2C e-commerce environment the ground rules for security have yet to be set and understood by both the consumer and the vendor. The use of credit cards, the most popular mode of transacting in B2C e-commerce is seen as a potential means to fraudulent behaviour. A lack of understanding as to how secure an encrypted transaction, or how to know if the latest encryption techniques are being used, leads to a perception of substantial risk (Salam, Rao et al. 1998). As the potential vulnerabilities are constantly changing a vendor would find securing against violation an exhaustive list and not really achievable (Reid and Robin 2007).
Personal information being passed to an entity into a world of technology that is not necessarily understood by the consumer (McKnight, Choudhury et al. 2000) where it is harder to see, feel, and try out the product, increasing the felt risk or uncertainty and cause concern to the consumer (McKnight and Choudhury 2006). The availability of technologies, such as encryption, reduces the ability to tamper with data during transmission. There are regulations, laws and privacy policies to protect the consumer and the vendor and assist the consumer in assessing the level of risk that is to be taken. Although a B2C site may include all of the technology available to secure the site, it is not certain that the consumer understands the relevant technology symbols used or if the symbols make a difference to the consumer’s intention to purchase (Farrell, Farrell et al. 2001). A variety of technology mechanisms that may engender trust has been researched. (Grazioli and Jarvenpaa 2000) present the Model of Internet Consumer Behaviour that represents trust mechanisms such as testimonials, company size, reputation and assurance mechanisms such as seals warranties, news clips and physical location. The model considers the assurance mechanisms, their relationship to trust and the trust mechanisms and their relationship to trust, leading to the shopper’s attitude towards purchase. These technological issues are empirically tested on the Internet students, who were given the challenge of perceiving fraud within the site. This research found that deception by the vendor had only a moderate effect on the participants’ opinion of risk and trust. Subsequent testing of the model found that while consumers were aware of the importance of the trust mechanisms this did not affect their intention to purchase (Metzger 2006).

Tan, Thoen, Verhagen and Meents relate control trust to party trust in a series of a progressively developed model and propose an equation that models the behaviour of trust in e-commerce. Control trust relates to the control mechanisms that are in place for the transaction to take place, i.e. the technology that is available. “If you understand a control mechanism then you can evaluate your trust in it” (Gefen and Straub 2000). Party trust refers to the trust in the party with whom you are doing business; this can be applied from either the vendor’s or consumer’s position. This trust is developed through knowledge of the other party and an understanding of the knowledge that the other party possesses. The Generic Trust Model takes the
perspective of the vendor in regards to the control mechanisms required to obtain trust for the vendor and from the consumer. The model depicts risk, risk attitude and potential gain as internal to the person’s attitude towards trust in an e-commerce environment. Externally the model suggests trust in the other party and trust in the control mechanisms affect the level of trust. Tan & Theon consider that once we understand who we are dealing with and the mechanisms for transaction we can evaluate our trust in the transaction” (Gefen and Straub 2000; Tan and Thoen 2001; Verhagen, Meents et al. 2006).

The importance to industry of fostering a trustworthy relationship can be seen by the extent to which the business community have engaged in research to identify effectors of trust. In an industrial study six formal characteristics of Web sites are identified that claim to communicate trustworthiness from the consumer’s perspective. The empirical testing is done from the consumer’s perspective. The characteristics are brand, navigation, fulfilment, presentation, up-to-date technology and logos of security-guaranteeing firms (Cheskin Studio Archetype/Sapient, 1999). The study also presents a level of trust that is required as a base before a transaction can take place ranging from mistrust to an intrinsic level of trust.

4.1.3.2 Design Perspectives

From the included research literature, methods pertaining to Web site design were identified that are considered to improve the confidence of the consumer. The Theory of Reasoned Action (Fishbein and Ajzen 1975) leads to the consequence that the buyer’s belief about a site affects the buyers’ attitude toward the site (Grazioli and Jarvenpaa 2000; Lichtenstein and Williamson 2006). Careful design of an Internet site is maintained to portray a look and feel that will engender substantial size and professionalism of the company while emanating traditional aspects relating to consumer confidence and trust. The literature suggests that in doing so the Web site designers are able to reduce the perceived risk potentially experienced by the consumer. It is recognised by the researchers that it is not essential for a vendor to outlay a substantial financial commitment in order to trade on the Internet, hence the possibility of a “fly by night” business exists (Einwiller, Ulrike et
Therefore it is considered that trading with an unknown business demands a higher level of trust on behalf of the consumer than a face-to-face purchase (Choi 1998). For Internet start-up companies it is therefore suggested that they should present themselves as being professional and able to fulfil any transactions that are established.

From the literature relating to design perspectives, it is proposed that careful design can be incorporated to create a site that presents the look and feel of a pervasive, professional organisation that follows traditional trustworthy practices. It is also argued that amateurism and difficulty to navigate through a site or transaction may question the professionalism of a business, leading to a diminished trust. Another aspect of design said to create a trusting environment is one that recognises the consumer by tailoring to their individual requirements, giving importance to the consumer as an individual. These issues have been recognised and included in models that lead to e-commerce B2C trust and consequently perceived reduction of risk.

The Internet Consumer Trust Model of Jarvenpaa et al. depicts consumer trust as a result in the consumer’s view of the perceived size of the store and reputation. The resultant trust in the store is then reflective of the attitude and risk perception of the consumer. Perceived reputation and size of the business as effectors of trust are considered to offer a significant contribution. Jarvenpaa et al. consider the positive effects that perceived reputation and size have towards trust in a store that leads to eventual purchasing intention (Jarvenpaa, Tractinsky et al. 1999; Kim 2008).

The TAM (Technology Acceptance Model) (Fishbein and Ajzen 1975; Davis 1989) has been adapted and extended to identify its relevance to B2C e-commerce. The Proposed Conceptual Model of an extension of the TAM, includes perceptions of privacy and security that attributes TAM with social aspects (Pavlou 2001). This model is further investigated for personal convenience and impulse as contributors to perception of usefulness (Lee 2007). A survey of students found that the factors of privacy and security perceptions affect trust and therefore perceived risk. The survey of 52 students is said to substantiate the initial premise of the TAM, indicating a correlation between perceived usefulness and perceived ease of use on intention to transact.
Design is also discussed within the literature from a Human Computer Interaction perspective. Such issues as the look and feel of a Web site to project an image of establishment and security are foremost in the discussion. Fogg (Fogg et al. 2001) sets out to discover what gives a Web site the perception of credibility. Fogg’s study is a large-scale online survey that considers the consumers’ perspective of the factors that are said to portray a strong sense of credibility. Seven Web site design factors and their effects on credibility were tested; “real world feel”, ease of use, expertise, trustworthiness, tailoring, commercial implications and amateurism. It was found that amateurism was the greatest deterrent of Web trust while a real world feel gained the greatest acceptance. From the study, Fogg et al. have proposed guidelines in order to assist Web site design to engender trust in a B2C e-commerce environment. These guidelines were subsequently found to build a basis for developing trust with health Websites when they are tested with sufferers of hypertension (Sillence, Briggs et al. 2006).

McKnight et al. (McKnight, Choudhury et al. 2000) use terminology from the HCI discipline in relationship to e-commerce design, such as the effects of icons from “trusted” third parties. The paper discusses the movement of the consumer from the exploratory stage to the commitment stage and how the consumer’s commitment is effected by the inclusion of third party recognition on the site.

In a second study McKnight et al. identify linkages between trusting beliefs to trust related Internet behaviour in the Interdisciplinary Trust Constructs Model. Trusting beliefs are said to be a product of Web vendor interventions including design issues such as privacy policies and third party seals and customer interaction. McKnight discusses vendor interventions (certification, etc.) as having strong direct links to trust but recognises that trusting beliefs and trusting intentions have a large effect on trust in e-commerce (McKnight and Chervany 2001). Further large scale testing with students and model validation were undertaken. (McKnight, Choudhury et al. 2002; McKnight, Kacmar et al. 2003).

Egger’s (Egger 2000) Model of Trust for E-Commerce (MoTEC) considers the usability, overview and appeal from the design perspective of an e-commerce site. Egger proposes that traditional HCI analysis and design methods are relevant in addressing design issues in B2C e-commerce incorporating ‘User Centred Design’
methodologies. Egger's model includes interface properties of appeal, overview, usability and informational content of products and services, company, security, privacy and communication. Egger does not consider these to be the only effectors of trust but recognises that reputation, attitude to technology and propensity to trust need to be considered. Egger's MoTEC model is tested in relation to online advice in a large scale study carried out with users of current online advice (Briggs, Burford et al. 2002).

4.1.3.3 Sociological/Psychological Perspectives

Within the selected literature individuals are recognised as bringing to the e-commerce B2C environment preconceived ideas regarding technology, electronic commerce, purchasing behaviour and a propensity to trust (Jarvenpaa, Tractinsky et al. 1999; McKnight and Chervany 2001; Kim, Ferrin et al. 2008). Individuals are also purported to be influenced by external factors such as experiences of others, media exposure, advertising and use of brand name (Einwiller, Ulrike et al. 2000; Lowry, Vance et al. 2008). The factors considered to have an influence on consumer trust have been acknowledged as possibly having either a positive or negative impact depending on the knowledge and experience of the individual. Much research attention is dedicated to determining how much impact, if any, each of these factors have on e-commerce. Methods and models relating to the neutralising of any negative effectors of trust, relating to individual beliefs and environmental issues, have been proposed and tested. In an attempt to alleviate concerns felt by the individuals, vendor's sites are tested with contrary factors that appear external to the vendor, such as testimonials of satisfied customers and transitional reputation that often relies on the 'good name' of a known product. It is anticipated by the researchers that by reducing the negative preconceived views of e-commerce and improving the environmental issues, purchasing behaviour can be modified to include e-commerce as a trustworthy environment in which to conduct business.

The theme of propensity to trust is modelled by Ambrose, A Trust Based Buying Behaviour Model, and includes seller and buyer characteristics as part of the model.
This was developed from Mayer et al. and proposes that the vendor can improve the trustworthiness from the consumer’s view of the site by managing its appearance of ability, benevolence and integrity (Mayer and Schoorman 1995). It is also proposed within this model that the consumer must have a need, capacity and willingness to purchase as trust is not the only criterion for purchasing behaviour.

Effectors on trust such as propensity to trust, word of mouth and institutional characteristics are depicted in the E-Channel Research Model by Kim & Prabhakar. Kim’s research considers the factors influencing trust, in particular initial trust, categorising the factors into economics based, institution based and personality based. Propensity to trust, word of mouth referrals and institutional characteristics are said to influence initial trust and when considered with the perceived risk and trust in the institution will lead to trusting behaviour by the consumer. The model has been tested by students in an online survey within the banking industry (Kim and Prabhakar 2000; Kim and Prabhakar 2004).

Cheung & Lee have developed a 30 item list of sociological and psychological effectors that affect trust in e-commerce as a measurement instrument of reliability and validity of an e-commerce transaction (Cheung and Lee 2001). The list of 30 items covers the consumer’s view of security, privacy, integrity of the vendor, competence of the vendor, propensity to trust, cultural background, positive experience with the Internet, 3rd party recognition, legal aspects, trust and perceived risk. It does not cover HCI design aspects. This instrument was initially empirically tested by a student survey and subsequently tested indicating cultural differences in trust of e-commerce (Borchers 2001; Borchers 2003).

Kini & Choobineh conducted empirical testing on the issues relating to propensity to trust and developed a trust scale implement leading to the Research Model for Studying Trust in WWW Commerce (Kini and Choobineh 2000). This model, which was tested on students by means of a questionnaire, includes tendency to trust, risk involved, and information provision as influencing factors for trust in banking e-commerce. The findings from the consumer’s perspective show that tendency to trust was not a significant influence on trust in the banking environment, which is contrary to many other studies, in particular those who have revised the TAM.
model. Their research also found that trust is related to the task that is being undertaken and suggests that therefore not all tasks may be suitable for Internet commerce.

Considerations other than personality based trust characteristics are identified by Kim who adds to personality based trust with environment based trust and process-based trust (Kim 2001; Kim and Tadisina 2005). The Model of Sustainable Trust discusses four possible factors that affect trust being ability, willingness, familiarity and affection. Kim suggests that personal tendency may be too contingent to be managed, whereas environment and processes are factors that are under the control of the vendor and legal system. Kim suggests factors that may affect sustainable trust rather than initial trust are ability, willingness, familiarity and affection. This model has not been empirically tested.

More intently focused on the environment as a factor affecting trust in e-commerce, Salam suggests in the proposed model, A Priori Theoretical Trust Model, that institutional trust and economic incentive are the main reasons for trust and purchasing in an e-commerce environment (Salam, Rao et al. 1998; Salam, Rao et al. 2003; Salam, Lakshmi et al. 2005). The papers claim that these two factors lead to consumer perceived risk and are in fact inversely proportional to consumer perceived risk. This model was tested using an online survey of Web users.

Einwiller et al. propose that recognition of a trusted symbol or transference of trust can give trust to a vendor’s site (Einwiller, Ulrike et al. 2000; Einwiller 2003). This research discusses the concept of corporate branding as a method of engaging trust in e-commerce, distinguishing branding processes by targets, content and methods. Einwiller et al. have collated a table of methods said to improve the level of trust by including in the contact with the consumer either personal or imparted experience by phone or chat rooms, increasing familiarity through brand naming, creating affiliations with membership, being transparent in all matters of security and privacy. These methods include assuring that the Web site meets the demands of the consumer, press coverage, financial coverage such as turning customers into shareholders and corporate advertising and design. These influencing factors have not yet been empirically confirmed.
Papadopoulou et al. collate research in e-commerce trust and theoretical models for the formation of trust in customer-business relationships. The authors present a model of *Trust Formation Through Promise Fulfillment Within E-Serviscape* (serviscape defined by the impact of the physical environment in which a service process takes place) that considers the building and retention of trust from the consumer perspective throughout the e-commerce process. The underlying aspects of trust creation considered include trusting intention, behaviour and beliefs. The model is based on the argument that trust is built through repeated interactions that include fulfilment of promises, the model is yet to be empirically tested (Papadopoulou, Kanellis et al. 2001; Papadopoulou 2007).

Table 4-1 provides an overview of the pertinent research that we have reviewed as outlined above. We refer to the perspectives adopted by the researchers in developing their models and the research testing procedures and collated the data accordingly. Table 4-1 also displays the direction from which the trust is considered, i.e. who is doing the trusting of whom, trust by the consumer of the vendor or trust by the vendor of the consumer.

<table>
<thead>
<tr>
<th>Reference to Model/Guidelines</th>
<th>Perspective</th>
<th>Empirically Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust Based Buying Behaviour Model: Ambrose &amp; Johnson</td>
<td>Technological Design</td>
<td>Sociological/ Psychological Consumer No</td>
</tr>
<tr>
<td>30 Trust Effectors of E-Commerce Trust: Cheung &amp; Lee</td>
<td>Consumer</td>
<td>Consumer Yes (students)</td>
</tr>
<tr>
<td>Research Model for Studying Trust in WWW Commerce: Kini &amp; Choobineh</td>
<td>Consumer</td>
<td>Yes (students)</td>
</tr>
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<td>MoTEC: Egger</td>
<td>Vendor</td>
<td>Vendor No</td>
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<td>Trust through Corporate Branding Elements: Einwiller et al.</td>
<td>Consumer</td>
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<th>Reference to Model/Guidelines</th>
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<tr>
<td></td>
<td>Technological</td>
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<td>Guidelines for Credible Websites: Fogg et al.</td>
<td>Consumer</td>
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<td>Model of Internet Consumer Behaviour: Grazioli &amp; Jarvenpaa</td>
<td>Consumer</td>
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<td>Internet Consumer Trust Model: Jarvenpaa et al.</td>
<td>Consumer</td>
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<tr>
<td>E-Channel Research Model: K. Kim &amp; Prabhakar</td>
<td>Consumer</td>
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<td>Model of Sustainable Trust: E. Kim</td>
<td>Consumer</td>
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<tr>
<td>Third Party Trust: McKnight, Choudhury</td>
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<tr>
<td>Interdisciplinary Trust Constructs Model: McKnight &amp; Chervany</td>
<td>Consumer</td>
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<tr>
<td>Trust Formation Through Promise Fulfillment Within E-Serviscape: Papadopoulou</td>
<td>Consumer</td>
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<tr>
<td>TAM Extension: Pavlou</td>
<td>Consumer</td>
<td></td>
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<tr>
<td>Prior Theoretical Trust Model: Salam &amp; Lakshmi</td>
<td>Consumer</td>
<td></td>
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<tr>
<td>Generic Trust Model: Tan &amp; Thoen</td>
<td>Vendor</td>
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Table 4-1: Comparisons of Trust Models from Current Literature Indicating Major Perspectives, Consumer/Vendor Trust Direction and Empirical Testing Status

4.1.4 DISCUSSION

It could be argued that the diverse and fragmented nature of the studies reviewed is typical of an emerging field of research. Indeed, pluralistic research approaches are generally considered to be conducive towards establishing a broader understanding
of emergent phenomena (Nissen and Klein 1991). However, there is also now a need for more integrative research efforts that are cognisant of the current body of knowledge. In addressing this need it is necessary to revisit existing assumptions, points of departure and to critically reflect on the progress to date. In these respects four main issues are raised, concerns that warrant further research attention. The discussion is based on the analysis of the research studies as outlined above and some findings from previous empirical field studies.

4.1.4.1 An Over Simplification of the Trust Concept

A key criticism of much of the current literature concerns the conflation of the trust concept. Many of the current studies view trust (and especially consumer trust) as a singular notion: the consumer trusts the vendor. Such a simplistic view is not only inconsistent with previous empirical findings, but may also become a conceptual liability in addressing specific consumer concerns. We argue for an “unbundling” of the trust concept. For example, a distinction could be made between trust in the integrity and trust in the ability of a vendor. A consumer may trust a vendor to be honest and to make every effort possible to deliver on the products as requested (integrity), however the consumer may not trust the same vendor’s ability to ensure the safety of their transaction over the Internet (a point supported by (Gefen and Straub 2000; Tan and Thoen 2001; Verhagen, Meents et al. 2006)). An unbundling of the trust concept can isolate different facets of trust with much richer insights in terms of addressing specific consumer trust concerns. In addition we advocate the need to acknowledge the richness and multiplicity of the trust concept.

4.1.5 UNI-DIRECTIONAL VIEW OF TRUST

As mentioned earlier, in a B2C context consumers are typically required to pay for the transaction up front in the expectation that the goods or services will be received as promised. In addition, consumers often need to furnish additional (and possibly sensitive) personal details (e.g. home addresses) that could be misused. It comes as no surprise that in the trust models reviewed these facets are well accounted for.
From Table 4-1 we can however see that very few of the studies acknowledge other stakeholders’ perspectives on trust. In our own empirical fieldwork, it is clear that the vendor also expects a level of integrity in fulfilling an order that has been placed (Farrell, Leung et al. 2000; Farrell, Farrell et al. 2001). The recently reported high level of credit card fraud, in particular the Asia Pacific Region, contributes to this vendor expectation. The perpetrators of fraudulent transactions use stolen credit card numbers and try to obtain goods from trusting vendors (O’Brien 2001). Since the stolen credit card details are valid, basic credit card authorisation processes fail to register the fraudulent use.

In addition financial institutions (e.g. credit card companies) and governments for example, also have a vested interest in B2C transactions being conducted in an environment of high integrity. Hence we argue that multiple stakeholder perspectives on the trust relationship should be reflected in B2C trust models.

4.1.6 DISCIPLINE CENTRED APPROACHES TO MODELLING TRUST

The review suggests theoretical and empirical frameworks on which to base an integrative approach to understanding the complexities of human behaviour, design, technology and the business world. As can be seen from Table 4.1, the presented models reviewed depict trust in an e-commerce environment as coming from mainly singular and at best dual perspectives that the authors have adopted in their study. While each suggested model has equally justified its reasons for concerning itself with its chosen discipline/s, in taking these isolated views they have diminished the relevance of the factors that are found to be intrinsic to e-commerce trust by other modelers. In moving towards an understanding in e-commerce there is a need to understand the consumer, the vendor, the technology and the surrounding influences that involves all parties and how they all interact with each other. In particular, consideration needs to be given to the overlap of each of the three disciplines that can give a clearer picture of the trust effectors and their relationships. Clear guidelines are needed for the business community that will create an environment where both the consumer and vendor feel secure in all stages of transactions in B2C Internet e-commerce. We therefore argue for more
collaborative research efforts across disciplines to address the fragmented body of knowledge.

4.1.7 LACK OF EMPIRICAL GROUNDING AND TESTING

Other issues of concern with most of the current documented models on B2C trust are the lack of empirical grounding and the lack of rigorous testing. As can be seen from the models in Table 4.1, few of the models have involved participants for empirical testing. In those cases where the models have indeed been tested, the test participants are often students. It is argued here that this does not constitute a sufficiently rigorous test base. Hence it is suggested that there is a need for research approaches aimed at testing current models that consider trust from an holistic interdisciplinary perspective.

4.1.8 OVERVIEW OF LITERATURE ANALYSIS

In this review, recent studies have been drawn upon from prominent peer reviewed journals and conference proceedings on B2C trust models in an Internet e-commerce environment. From this literature the various models have been classified into three main focal areas: technological, design and sociological/psychological perspectives with minimal overlap of perspectives. It has been found that each of the researchers had considered and tested their findings to the question of trust from the direction of either the vendor or the consumer, limiting the outlook and consequently the requirements of trust creation on an Internet e-commerce site. It was also evident from the literature that although there were many differing definitions of trust there appeared to be an over simplification of trust concepts. To realise a model for trust requires the unbundling of the trust in the vendor and trust in the vendor’s ability to fulfil a transaction. Within the literature reviewed it appeared that the grounding for the models and the empirical testing was not rigorous in all cases with the use of students and online surveys. The reviewed models have suggested theoretical and empirical frameworks on which to base an integrative approach to understanding the complexities of human
behaviour, design, technology and the business world. It can now been seen that the question of trust within the e-commerce discipline is diverse, possibly beyond that of the individual researcher, raising the need for more collaborative research efforts across disciplines to address the fragmented research. It is also advocated that multiple stakeholder perspectives on the trust relationship should be considered and reflected in B2C trust models. Furthermore the concept of trust needs to be unbundled from its simplistic roots in order to isolate different facets of trust, allowing a greater understanding of the trust concerns and recognising the multiplicity of the trust concept. Finally it is suggested that there is a need for rigorous research approaches aimed at testing current models integrating the disciplines and that future research in this area should clearly indicate how proposed models are to be tested.

The following section will propose a model of trust that integrates the research reviewed in this section as a multi-disciplinary model of trust. It will also address issues that have been raised in this section in regards to viewing trust as an over simplification of the trust concept, and discipline centred approaches to modelling trust.

4.2 DEVELOPMENT OF A MULTI-DISCIPLINARY MODEL OF TRUST

There have been many attempts to identify the essential components that define a model of trust coming from a variety of disciplines. These components or factors have been identified and subsequently empirically tested in the isolation of the discipline of which they have been defined and without reference to other discipline defined trust factors as discussed in Section 4-1. This section proposes a model that integrates the ideas from the previously discussed research disciplines while removing repetition of components. Expanding on the Technology Acceptance Model by recognising the human influences and antecedents of the Theory of Planned Behaviour and the control trust/party trust equation, each of these models being from the Information Systems discipline, has obviated the need to redefine the contributing factors to e-commerce trust in a multi-disciplinary inclusive manner. The model unbundles the concepts of trust by separating out trust in the
vendor and trust in the vendor’s ability, identifying components related to risk with the vendor and risk with the technology. This model also recognises the difference between a genuine risk and factors that can influence a consumer’s perceived risk, both of which influence trust. Chapter 5 undertakes testing of the MDMT to ascertain the relevance and necessity of each component in the model as well as the cognitive process the consumer undergoes in determining whether to trust or not to trust.

There have been many previous studies undertaken towards developing a model that would represent e-commerce trust. Many of these studies have been quite robust and vigilant in their research and present valid arguments towards inclusion of factors that relate to e-commerce trust as discussed in Section 5.1. With the multi-disciplined nature of e-commerce the factors included and the methodologies used to develop trust models were representative of the field of study from which each of these studies derived. This led to a fragmented and at times an insular look at e-commerce and its relevant trust development cycles. The development of e-commerce trust models has reached a stage where the natural maturation cycle of this study allows the ‘bringing together’ of the models and all of their contributing factors to e-commerce trust. While each of the factors from the multiple contributing disciplines has unique identifying features, they are inclined to overlap when merged, i.e. “same song, different tune”. Recognition of such overlap would allow for the singular entry by common naming and definition. Holistic definitions from one discipline also would allow for the removal of redundancies where they occurred. The merging of disciplines to become a study in e-commerce that embraces all the contributing disciplines allows for an inclusive multi-disciplinary model to be developed.

Throughout the decision process of whether to continue with an Internet commerce transaction there are indicators initially posed by (Ambrose and Johnson 1998; Einwiller, Ulrike et al. 2000; Cheung and Lee 2001; Egger 2001; Pavlou 2001; Tan and Thoen 2001) that assist the consumer in assessing the trustworthiness and reliability of the technology and the company with whom they are potentially dealing. In viewing the Internet commerce application, the consumer is faced with physical indicators that signal a key message as to the potential risks or lack of
potential risks that are evoked from their existence, or lack of existence, on the Web application. The consumer is also faced with a perception of what risks exist, or do not exist, from their own personal perspective or possibly a perspective they have adopted from hearsay. In consideration of all these factors judgment of all the known and perceived potential risks may be examined in leading to a decision of trust. Outside of the risks that are involved in an e-commerce transaction is the ‘weighing up’ of the potential risks and the usefulness (Ambrose and Johnson 1998; Grazioli and Jarvenpaa 2000; Pavlou 2001), enjoyment (Grazioli and Jarvenpaa 2000; Egger 2001) and the ease of use (Ambrose and Johnson 1998; Pavlou 2001) that is transmitted by the e-commerce application that will eventually lead to a decision of whether or not to continue with a transaction.

To be further considered is the process that is undertaken while the consumer is contemplating using an e-commerce application (McKnight, Choudhury et al. 2002). Identifying factors that contribute towards e-commerce trust only takes us part of the way to an understanding of trust formulation. Understanding the process that a consumer follows in their mind when they first decide to consider e-commerce for a transaction would assist in identifying which factors are crucial and those which are secondary to the success of gaining trust in an e-commerce application. Identification of essential factors to e-commerce may be determined if patterns of consumer behaviour and thoughts were able to be recognised when scanning a Web application as they ‘weigh up’ the risks. This section follows on from the extraction of the factors from prominent peer reviewed research in the development of e-commerce models in Section 4.1 and references previous studies (Farrell, Scheepers et al. 2002). In this section the e-commerce models are merged, and the terminology used by the different disciplines is defined, allowing for the removal of redundancies and overlap. Furthermore this section unbundles the definition of trust, recognising the antecedents of trust, trust in benevolence and trust in capability, separating what is factual as a risk and what is perceived as a risk.
Section 4.1 reviewed peer-reviewed journals and conference proceedings on B2C trust models in an Internet e-commerce environment. From this literature, various models were classified into three main focal areas: technological, design and sociological/psychological perspectives, with minimal overlap of perspectives. The reviewed models suggested a theoretical and empirical framework on which to base an integrative approach to understanding the complexities of human behaviour, design, technology and the business world, raising the need for more collaborative research efforts across disciplines to address the fragmented research.

4.2.1.2 Identification of Unique Factors

From the models finally selected as offering novel and original studies a group of factors identified as having an influence on consumer trust were collated. Although the individual models were unique there was some overlap to be found in the factors offered by the models. In order to create an integrated approach to identifying an e-commerce trust model, the overlap was removed and the factor represented as a single item. The resulting factors are listed in Tables 4-2 to 4-5.

4.2.1.3 Unbundling the Trust Issues

Tabling the unique factors highlighted the complexity of the trust concept and unbundling the trust issue assists in the realisation of a model of e-commerce trust. This is done by discriminating between the vendor and the vendor’s ability, that is, **trust in the vendor** and **trust in the vendor’s ability** to fulfil a transaction.

Many of the unique factors pertaining to risk and the vendor’s ability to overcome the risk or the perception of the risk, for example, ‘Is the vendor a legitimate company?’. This type of risk, seen as a risk with the vendor, could be counterbalanced by the inclusion of third party verification as well as other factors. Another type of risk is ‘Is the vendor able to secure the transaction?’, which is a risk related to the vendor’s ability, and could be counterbalanced by the use of a secure network. Such considerations led to the consequent unbundling of risk, recognising **risk with the vendor** and **risk in the vendor’s ability**.
Perception and reality are synonymous with a virtual world and the real world, creating a situation where a consumer’s decision to trust may be as easily reflected by what is visible on an e-commerce site as much as what is not visible. For example a store may look big and professional on the Internet whereas it does not exist in a physical sense. A professional appearance may reduce the consumer’s concern and reduce or eliminate the perceived risk with the existence of the store. This has led to the identification of factors that could be identified as being related to a potential (identifiable) risk or a perceived risk, realising that not all risks are measurable.

4.2.2 THE CYCLE OF TRUST

Analysis of these concepts in the context of the unbundling of the trust issue in e-commerce demonstrated that a cycle of trust could be described. Each of the unique factors was then assigned to a position within this cycle.

This process has allowed for the development of a model that is inclusive of previous studies in e-commerce trust modelling as well as identifying complex issues that contribute to the trust building cycle.

4.2.3 TRUST AS A SINGLE ISSUE

In previous studies trust has generally been considered as a single issue. Although widely recognised that trust is related to risk (Jarvenpaa et al. 2000; Gefen, Srinivasan et al. 2003; McKnight and Choudhury 2006; Kim, Ferrin et al. 2008) the issue of trust and the issue of risk are multi-focused and need to be considered in detail if they are to be understood in the B2C e-commerce environment. While this study attempts to integrate the findings of multi-disciplinary based e-commerce trust models research, it also untangles the dimensions of trust and risk for a better understanding of the trust determination process. The factors pertaining to trust collated from the previous study (Farrell, Scheepers et al. 2002) were aimed at different parts of the trust determination process. In determining whether a transaction should be completed, part of the process the consumer undertakes is to consider the relationship between trust and risk. The measurement of the risk can assist in the decision making process as to the level of risk that the consumer will
permit. This risk assessment is an essential part of the trust risk loop and should be considered in detail to determine the extent to which each factor affects the overall trust decision.

In order to do this, each of the factors was considered to determine how they related to the trust determination process. Some risks could be identified as tangible while others were not and instead related to the perception or personal attributes of the consumer. Some of the risks were related to the company, other factors were related to the actual transaction. This unbundling of trust as a single trait allows for a closer look at the process that is being undertaken when determining the level of trust that will ensue. It is now easier to allocate the trust factors to an identifiable risk that considers risk with the company and risk with the transaction and the perceived risk that also considers risk with the company and risk with the transaction as different dimensions of risk (Figure 4-1).

4.2.4 FACTORS OF TRUST

The factors for an e-commerce trust model that were extracted from the previous literature represent a culmination of work from varying disciplines. At times terminology used in one discipline may have the same meaning as different terminology from another discipline. The listing of the factors themselves has thus been rationalised so that each factor appears only once. For example, “Ease of Use” falls within all of the design, HCI and social/psychological disciplines.

Most of the factors can be categorised as risk factors where the consumer’s perception of risk can be influenced by personal issues or by the vendor’s
appearance and/or performance as well as the identifiable components of risk (Table 4-2). Other personal factors are related to the individuals and their reception to outside influences (Table 4-3).

**Key:** Identifiable Risk (I) Perceived Risk (P) Risk with Company (C) Risk with Transaction (T)

<table>
<thead>
<tr>
<th>Risk Factor Affecting Trust Determination as Initially Defined</th>
<th>Definition</th>
<th>I or P</th>
<th>C or T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy Policy (McKnight, Choudhury et al. 2000; McKnight, Chervany et al. 2001; Pavlou 2001; Tan and Thoen 2001)</td>
<td>Inclusion of a privacy policy</td>
<td>I</td>
<td>T/C</td>
</tr>
<tr>
<td>Encryption (Tan and Thoen 2001)</td>
<td>Inclusion of encryption</td>
<td>I</td>
<td>T</td>
</tr>
<tr>
<td>Settlement Performance (technical) (Ambrose and Johnson 1998; Grazioli and Jarvenpaa 2000; Tan and Thoen 2001; Van Der Heijden and Tibert 2002)</td>
<td>Method used to complete settlement (financial)</td>
<td>I</td>
<td>T</td>
</tr>
<tr>
<td>Fulfilment Management (technical) (Ambrose and Johnson 1998; Cheung and Lee 2001; Van Der Heijden and Tibert 2002)</td>
<td>Method used to supply the purchase such as online tracking of state of delivery, download of software</td>
<td>I</td>
<td>T</td>
</tr>
<tr>
<td>Fulfilment Management (delivery) (Ambrose and Johnson 1998; Cheung and Lee 2001; Tan and Thoen 2001)</td>
<td>Company's method used to supply the purchase, such as delivery, stock management</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>3rd Party Verification (Einwiller, Ulrike et al. 2000; Grazioli and Jarvenpaa 2000; McKnight, Chervany et al. 2001; Tan and Thoen 2001; Belanger et al. 2002)</td>
<td>Verification by a reputable 3rd party</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>Usability (Egger 2001)</td>
<td>Ease and efficiency of access and control, customer centric.</td>
<td>I</td>
<td>T</td>
</tr>
<tr>
<td>Customer Interaction (Grazioli and Jarvenpaa 2000; McKnight, Chervany et al. 2001)</td>
<td>Personal service such as emails, phone calls increases benevolence, competence, honesty and predictability</td>
<td>P</td>
<td>C</td>
</tr>
<tr>
<td>Tailoring (Fogg et al. 2001)</td>
<td>Personalisation of the site to increase credibility of the transaction technical ability</td>
<td>P</td>
<td>T</td>
</tr>
</tbody>
</table>

…..continued
### Risk Factor Affecting Trust Determination as Initially Defined

<table>
<thead>
<tr>
<th>Risk Factor Affecting Trust Determination</th>
<th>Definition</th>
<th>I or P</th>
<th>C or T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Use (Van Der Heijden and Tibert 2002)</td>
<td>The site allows for simplistic and obvious usage throughout the transaction</td>
<td>P</td>
<td>T/C</td>
</tr>
<tr>
<td>Professionalism (Often referred to in the negative as amateurism) (Ambrose and Johnson 1998; Grazioli and Jarvenpaa 2000; Fogg et al. 2001; Pavlou 2001)</td>
<td>The site appears professional transferring the trust in the professionalism in the technical ability for the transaction to occur. Details such as size host, domain name matching company’s name, working links etc.</td>
<td>P</td>
<td>T/C</td>
</tr>
<tr>
<td>Information Content (Kini and Choobineh 2000; Egger 2001)</td>
<td>Products and services, company information, contractual terms</td>
<td>P</td>
<td>C</td>
</tr>
<tr>
<td>Reputation Transfer of Trust (Egger 2001)</td>
<td>Previous interactions on and/or off-line, or reports from trusted third parties</td>
<td>P</td>
<td>C</td>
</tr>
<tr>
<td>Brand (Einwiller, Ulrike et al. 2000; Egger 2001)</td>
<td>The strength of a company’s brand name, previous interactions on- and/or off-line, or reports from trusted 3rd parties</td>
<td>P</td>
<td>T/C</td>
</tr>
<tr>
<td>Reputation Building (Landon and Smith 1997; Grazioli and Jarvenpaa 2000; McKnight, Chervany et al. 2001)</td>
<td>Estimation of the seller’s willingness and ability to perform an activity in a consistent fashion</td>
<td>P</td>
<td>C</td>
</tr>
<tr>
<td>Links to Other Sites (McKnight, Chervany et al. 2001)</td>
<td>Gaining credibility from links to other sites.</td>
<td>P</td>
<td>C</td>
</tr>
<tr>
<td>Perceived Size (Grazioli and Jarvenpaa 2000; McKnight, Choudhury et al. 2000)</td>
<td>Size of the business as portrayed through the Web application</td>
<td>P</td>
<td>C</td>
</tr>
</tbody>
</table>

Table 4-2: Definition of Risk Factors Affecting Trust Determination

### Personal Factors Affecting Trust Determination

<table>
<thead>
<tr>
<th>Personal Factors Affecting Trust Determination</th>
<th>Definition</th>
<th>I or P</th>
<th>C or T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity to Trust (Rotter 1971; Grazioli and Jarvenpaa 2000; Kini and Choobineh 2000; McKnight, Choudhury et al. 2000; Egger 2001; Papadopoulou, Kanellis et al. 2001)</td>
<td>Intrinsic tendency of individuals to trust others,</td>
<td>P</td>
<td>T/C</td>
</tr>
<tr>
<td>Testimonials (Grazioli and Jarvenpaa 2000)</td>
<td>Vendor’s use company or 3rd party testimonial to help convey to the consumer the seller’s concern for the consumers in general and the seller’s willingness and ability to transact in a trustworthy manner.</td>
<td>P</td>
<td>T/C</td>
</tr>
</tbody>
</table>

Table 4-3: Definition of Personal Factors Affecting Trust Determination
There are however, factors that are more personal to the consumer, rather than the site or vendor. The individually established perceived risk can be used in conjunction with the consumer’s personal experiences and educational technical knowledge to help determine if they have enough trust in the transaction and the company to overcome any risks that may occur. These factors relate to the individual’s trust rather than risk (Table 4-4). When trust is an issue with a consumer there needs to be a decision as to whether the risk is worthwhile, at this stage a weighing of risk versus trust may occur. However, not to be overlooked there are other factors influencing this decision relating to factors that are built around personal preferences (Table 4-5). These influences may far outweigh any common sense approach to determining risk or the underlying need to trust.

**Table 4-4: Definition of Factors Affecting Trust Relating to the Individual**

<table>
<thead>
<tr>
<th>Factor Affecting Trust</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiential Knowledge</td>
<td>Familiarity and or experience with Internet commerce either personally or word of mouth</td>
</tr>
<tr>
<td>Educational/Technical Knowledge</td>
<td>Familiarity and or experience with technology either personally or word of mouth</td>
</tr>
</tbody>
</table>

**Table 4-5: Definition of Other Factors Affecting Trust**

<table>
<thead>
<tr>
<th>Other Factors Influencing Trust Determination</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Usefulness</td>
<td>Needs fulfilment. Customer must have a need for the product</td>
</tr>
<tr>
<td>Store Enjoyment</td>
<td>Appeal, fun and interest of the Internet site</td>
</tr>
<tr>
<td>Navigation</td>
<td>The ease by which a consumer can move through a site and find their requirements</td>
</tr>
<tr>
<td>Initial Perceived Site Quality</td>
<td>Perceptions of how well the Web site is built and works</td>
</tr>
</tbody>
</table>

### 4.2.5 Development of the Multi-Disciplinary Model of Trust

The Multidisciplinary Model of Trust (MDMT) (Figure 4-2) illustrates a process of growing trust or mistrust by the user as they move from preconceived e-commerce B2C trust indicators to experiencing the trust indicators of the individual e-
commerce site. Each or a combination of the factors previously described in this chapter from previous research may form part or all of the decision process prescribed by the potential consumer in deciding to trust an online vendor to the extent of completing a transaction. The following model, MDMT, depicts the stages discussed in this section, with each of the previously defined factors (Tables 4.4 to 4.5) derived from each of the models in Table 4.1 and categorised within each stage. Each stage will now be discussed in a clockwise manner.

![Figure 4-2: Multi-Disciplanary Model of Trust](image)

### 4.2.5.1 Antecedents of Trust

At this stage the user enters the site with preconceived trust/risk ideas of B2C e-commerce. The antecedents of trust recognise previous technical knowledge and experiential knowledge. Each of these can be either positive or negative experiences and therefore affect the level of trust in either a positive or negative manner. The experiential knowledge can be that of a personal nature or hearsay from others.
4.2.5.2 User Needs: First Impression Can Be Lasting Impressions

Beyond the arena of the recognition of risks is the consumer’s own agenda. For example is the application found to be useful or are there more useful alternatives? Is the store easy to navigate or is there an easier way to acquire the same goods or service? The enjoyment within the store may lead to decisions to continue with a transaction that do not necessarily relate to the consumer’s decision to trust the application. Perceived site quality may assist the user to determine if a company is technically competent and professional. It allows the user to make an early judgment on the quality of the company of which they are dealing. Initial relationships form an important basis that will affect the consumer’s willingness to explore the site and hence depend on the site (McKnight et al. 1998).

4.2.5.3 Identifiable Risks: Visible Cues to Help Determine Trust

Taking these issues on board the consumer may then view the site assisted by their knowledge or lack of knowledge to determine the perceivable risks that are present on the Web application. The visibility of these factors is all determinable by the vendor, designers and technicians to have in place where they are easily verified by the consumer. For example, the customer may wish to know if the transaction is encrypted. McKnight et al. (McKnight, Kacmar et al. 2003) suggest that “it is possible that no-structural assurance would be a stronger predictor of distrusting intention...than trusting intention”. Whether structural assurance incites trust or mistrust it needs to be discerned as to whether it is recognised and considered by the consumer in the process of a transaction.

4.2.5.4 Personal: The Individual’s Attitude to Trust

The consumer’s personal propensity to trust may influence how the consumer perceives the risks for the Web application, their ability to make a balanced decision being clouded by an innate trust or mistrust. The authentic appearance of a testimonial may also influence the consumer, adding a human, personal touch with which the consumer can identify in what is an otherwise technology-based environment.
4.2.5.5 Perceived risk: Implicit Confidence Builders or Destroyers

The consumer is then able to consider other factors on which they can make judgment. For example with a known brand it may give a feeling of confidence with one consumer but negate it for another.

Previous studies have shown that a consumer who is faced with the issue of trust when using an e-commerce site may require some or all of these factors to be in place before they will commit to a transaction (Grazioli and Jarvenpaa 2000; Egger 2001; McKnight, Choudhury et al. 2002; Van Der Heijden and Tibert 2002; Metzger 2006).

4.3 SUMMARY

Through a rigorous review of current literature this chapter has highlighted the factors that have been identified by researchers to influence trust in B2C e-commerce. The models developed by these researchers are discipline specific in a similar manner to the definitions of trust as discussed in Chapter 3. In previous research the identified factors were subsequently tested in isolation from other disciplines. The development of the MDMT incorporates the research from the various contributing disciplines and has been developed with all aspects of the trust models being considered simultaneously. The human factor identified in the merging of the TAM, TPB and control/party trust equation is included in the design of the MDMT by considering the personal perceptions and antecedents of the consumer together with the technical requirements of e-commerce and the consumer. Overlap or redundancies of factors from the various disciplines were removed to ensure duplication of concepts did not occur. This chapter also recognised the need to unbundle the concept of trust into trust in the vendor and trust in the vendor’s ability. Chapter 5 will test and analyse the MDMT as a unified model that is not fragmented by a discipline specific approach.
CHAPTER 5
EVALUATION AND ANALYSIS OF THE MDMT

On the basis of the relevant disciplines identified in Chapter 3, the MDMT was developed in Chapter 4 to reflect complexity and interrelatedness of each discipline. To ensure validity of the inclusion of each of the factors and concepts of the MDMT studies were undertaken with perspective consumers as the participants and their responses were subsequently analysed in unison rather than a disciplinary fragmented approach. These studies demonstrated the factors considered to be important to the participants for trust and verified concepts that were proposed in Chapter 4. The study also highlighted anomalies in trust perception which will be further investigated in Chapter 6.
5.1 INTRODUCTION

The developed MDMT was presented in Chapter 4 after rigorous research of trust in B2C e-commerce models in the disciplines of technology, design, commerce, sociology and psychology. It was deemed necessary to consider these disciplines after recognising their impact on technology acceptance and the inadequacy of studying trust in B2C e-commerce in isolation of the other pertinent fields as described in Chapter 3.

This chapter conducts user evaluations of B2C e-commerce sites to test for the validity of each of the factors acknowledged in the MDMT, the concepts that were identified as impacting on the decision to trust such as the unbundling of trust and the influence of the individual's antecedents both with technology and experience. The process of model verification includes a pilot study, panel discussion and a laboratory testing of 4 current Web sites.

5.2 PILOT STUDY

In order to verify the unique factors required for an e-commerce trust model, a pilot study was undertaken in 2004 forming the basis for a subsequent, larger study. All sessions were conducted in the Swinburne Usability Laboratory.

5.2.1 METHOD OF THE PILOT STUDY

The participants were from 3 main groups. Group A were six people who were in the IT/IS field. Group B were 4 non IT students (2 engineering, 2 MBA) and Group C were 6 non IT non students where the level of education varied from secondary school to bachelor level. The participant’s experience with Web transactions ranged from “never” to “substantial”, whereas their Internet usage was at least frequent in all cases.

Participants were told they were viewing e-commerce Web applications to determine the process by which they used online purchasing sites.
Participants were then shown 4 sites in all. The e-commerce sites varied in levels of professionalism, security, verification, navigation, privacy and other factors.

Site 1 was a locally well known book store with a varied selection of books that offered extra services to its customers such as notice boards, accommodation and local information. This store is reputed for its community involvement at each of its 4 suburban stores. This site had no security in place, no verification and appeared extremely unprofessional. Participants were asked to purchase the book of the month on this site.

Site 2 was a government site where the consumer could register a trade mark. This site, although professional looking in its appearance, offered no security for its transactions. Participants were asked to purchase a trade mark on this site.

Site 3 was a cinema chain where tickets could be booked online. In order to do so it was necessary to register as a member. This included the request by the cinema for personal details irrelevant to the purchase. Participants were asked to book tickets to an upcoming movie on this site.

Site 4 was a not well known, but nonetheless, heard of airline booking system with extremely cheap fares. This site had no alternative booking method but did have a high level of visible security and professionalism but poor navigation. Participants were asked to book a flight on this site.

Participants were asked to talk aloud as they viewed the sites, focusing on their opinions and feeling towards the site as they moved their way through, particularly noting which aspects of the site or company they were looking for, or what they had noticed that would affect their opinion towards purchasing from that company online. Participants were asked initially to discuss their knowledge and experience and feelings towards dealing with the company. During the process of working through the sites the participants were asked to note at which point they made a decision to either transact or not continue with a purchase on the site.

Screen movement and voice were tracked and recorded for further reviewing. A written record was also kept of factors mentioned by the participants that they thought would influence their usage of the site. These factors were recorded regardless of whether they were included in the model.
5.2.2 RESULTS OF PILOT STUDY

In all cases Site 1 (the bookshop site) was accepted for transaction by all participants. Positive comments were made on the company and its place in the community. No comment was made on the lack of security. Nearly all participants commented on the lack of professionalism of the site, comments such as “it looks as though someone got their kid to do it”, however this was seen as endearing rather than a concern. There was no mention of encryption, usability, privacy policies, 3rd party verification, lack of customer interaction. All participants commented on the company, its position within the community as well as positive experiences they have had with the company. Testimonials on the site only appeared to amplify their own positive thoughts.

The concerns raised on Site 2 (the government site) were not related to security but rather the concern of the users that the correct information would not be registered. None of the participants had prior experience with the office and were unsure of the process that occurred to register a trade mark. This concern for registering correct information was only raised by the students who were non IT students. Each of these participants said they would take the alternative of registering in person where they could be assured of correct information being registered. No one commented on the lack of security. All participants commented on the fact that it was a government site so it would have to be safe to use. Comments were made on the professionalism of the site noting that the information that was supplied was extremely useful and plentiful. Fulfillment (delivery) was described on the site and this was accepted that it would be done correctly.

Site 3 (the cinema site): All participants were well acquainted with the theatre and felt confident to continue using their site. Concern was felt by group C (non IT non Student), 4 of whom said they would prefer to purchase the tickets at the cinema than give over a substantial amount of personal information that appeared irrelevant to purchasing theatre tickets. Only 1 participant looked for a privacy policy to see what would happen to their information, this participant was not satisfied with the privacy policy but felt that this was an area that was not satisfactory on all sites. Links to other sites was not mentioned although a
substantial number of well known and well reputed companies appeared on the site. All participants commented on fulfillment management and informational content in regards to the method of ticket collection at the theatre or from the Web site. All of group A and B were content to continue with the transaction.

Site 4 (the airline site): In all cases the participants decided to accept the airline transaction even though in all cases they had difficulty navigating the site but were willing to persist commenting on the possibility of such low fares. None of the participants had experience with the company although most had heard of them in recent times. Links to well known car rental and hotel chains were commented on by 2 participants who had no prior knowledge of the company. Six of the participants commented on the possibility of making an error in the booking and not purchasing what you require or the tickets not being accepted on arrival at the airport. All participants were pleased with the actual booking process customer interaction, although they made many attempts at finding their flights the actual purchasing process showed the customer where they were up to and what was yet to be done to finalise the purchase. The participants commented on the lure of the extremely cheap airfares and were willing to “throw caution to the wind” for a bargain. None of the participants commented on the security, privacy policies, 3rd party verification (which has subsequently been removed from the site).

5.2.3 SUMMARY OF PILOT STUDY

The unique factors that were recognised in previous rigorous studies provided an excellent foundation for further work permitting the integration of the various earlier models into a single multi-disciplined e-commerce model.

While the pilot study had only a limited number of participants, it gave insight into a probable pattern of the consumer’s process of determining a trustworthy site. The dominant factors affecting all sites appeared to be whether the consumer trusted the company before entering the site or they were being offered bargains too good to let go. All other factors, no matter how imperative they were for a safe transaction, appeared to be secondary to these 2 main factors. However, when the company was not so well personally known or there was some skepticism as to its
legitimacy, then most of the other factors were considered. This did not include encryption which was in the word of one participant “expected” on a modern Web site. Of course this is not the case as all participants interviewed are now aware.

This study was very open in its verbal protocol for collecting data and provided an excellent opportunity for further study in a more structured questioning environment using the responses from these participants to further probe for patterns in discerning a safe e-commerce B2C site.

The pilot study offered a brief view of the issues that may arise in a larger, more concise study. To improve the understanding of all the issues that were relevant to the Multi-Disciplinary Model of Trust and current concerns with B2C e-commerce trust, an extended presentation and discussion with prominent researchers and business managers in this area and other interested parties was held. The relevant outcomes will be discussed in the following section with the general recommendations.

5.3 PANEL PRESENTATION AND DISCUSSION

In June 2004 a panel presentation and discussion was held with prominent researchers in e-commerce trust modeling. The panel attracted over 100 participants to discuss the issue of trust with regards to the three presented trust models. These models were the Multi-Disciplinary Model of Trust as presented earlier, Trust in B2B e-Commerce by Yao Hua Tan and, Trust Building in Virtual Enterprises and Entrepreneurship Networks by Michael Koch (Farrell, Tan et al. 2004).

The purpose of this panel was to obtain feedback on the models, and to encourage discussions on the issues of e-commerce trust. The following relates to the discussions most relevant to the multi-disciplinary model of trust and B2C e-commerce trust development that were held at the panel meeting.

5.3.1 FEEDBACK ON MODEL

The MDMT was well received and acknowledgement of the need that had arisen to discuss trust from a multi-disciplinary perspective. There were a number of e-
commerce trust researchers and e-commerce business managers participating in the discussions who felt that they were not able to obtain the entire picture of trust given the previous research and the limitations imposed by the knowledge base of the researcher.

It was recognised by the participants that the party trust/control trust model presented, encapsulated many of the aspects of the MDMT allowing for a balance of technical and human interventions into the modeling process.

5.3.2 AREAS OF CONCERN WITH TRUST IN E-COMMERCE

It was proposed and argued by 3 members of the audience that trust is not an issue with e-commerce as the likes of Visa will pay any for any irregular purchases, already allowing 10% of their outgoings to be directed towards e-commerce fraud. The counter argument raised the issues of personal identity theft, the availability of personal information, order fulfillment and the eventual paying of the 10% by visa built into the charges that are incurred. The point of view offered as trust not being an issue with e-commerce as it is seen as a financial transaction only shows a misunderstanding of the issues involved with purchasing goods and services online. This opinion by some researchers within e-commerce brings to the fore the lack of knowledge of the risks involved in e-commerce. The need for education of the general public was raised in order to safeguard individuals from fraudulent behaviour that is not only financial but personal to the consumer and the collapse of the Internet for business transactions. From the perspective of this research it corroborated the concerns previously raised that there is a lack of understanding of the risks involved B2C e-commerce.

5.3.3 DIRECTION FOR FURTHER STUDIES

From the participants a discussion was held in regards to the manner in which B2C e-commerce is open to all without regulation questioning the infrastructure that has been built without planning and organisation. To quote “We appear to be repairing the roof with level upon level. Would it not be better to have a system that had it
inherently all built in – a change in the architecture, with the consumer as the actor in the centre” (audience participant).

The response to this suggestion was that “structuring and supporting communication is the key building block supporting foundation” (panel) and that “an institute of security where a company is registered to follow a code of conduct where they could display this code that would be consistent to all those who were registered” (panel). It was also remarked that “the code of conduct exists and is successful in Holland” (panel). This allows for consumers to recognise those whose registration is accepted to this code of conduct as behaving in a benevolent trusting manner with the financial and technical knowledge to complete transactions. This 3rd party verification is a government guarantee.

The participants recognised the need to view the issue of trust from various directions, too often one view dominates leaving the elements of trust unprotected from trust determination. A comment that led to discussion from a participant was that “trust is human and we are talking technical. All we have is technical components that support trust. At the end of this the soft factors are what controls trust in the mind”. The opinion that both technical and what was termed “the soft factors” as both required to influence trust was agreed upon given the evidence of research and was reflected in the models provided. The balance of these factors and the influence these factors have on each other were offered as an area for further research.

The final discussion related to the personal experiences of the audience who suggested the consideration of two further trust engendering factors for the MDMT. Firstly personal knowledge of individuals within the e-commerce company and secondly where an e-commerce business offers further services such as chat rooms or helpful information.

5.3.4 PANEL DISCUSSION OUTCOME

While the model was well received as a necessary stage in the development of B2C e-commerce trust understanding it opened questions in relation to the consumer understanding of B2C e-commerce and the balance that exists between technical/control trust and perception/social/psychological/party trust. These are
issues that will require further enquiry. The following section will consider each of the trust determining factors in the MDMT including the two further factors of knowing people at the company and other services offered in order to develop an understanding of how they are perceived when studied in unison rather than discipline specific factors.

5.4 TESTING THE TRUST FACTORS OF THE MDMT

This section explores previously tested trust engendering factors from multiple disciplines by observing potential customers with B2C sites using HCI methodology. It concludes that there are established trust engendering factors that can be controlled by the e-commerce business that increase the likelihood of transaction trust. It also concludes that where a community already exists before e-commerce commences and where government agencies are concerned the need for many of the recognised trust factors diminishes to the extent of being possibly detrimental to the security of the consumer.

This section will discuss the trust factors which have been established through rigorous research from a multi-disciplinary perspective of trust in e-commerce. This section will also describe the method undertaken to empirically test which trust factors are substantiated as required by consumers for e-commerce trust to increase understanding of the interactions of information technology related innovations and organisational contexts (Cavaye 1995). The final stages of this section will be to present and discuss the implications of the data of this test.

5.4.1 PURPOSE OF THE STUDY

As discussed in Chapter 4, a rigorous literature review of trust models from multiple disciplines was undertaken to identify the factors that are considered to influence the decision of trust in B2C e-commerce. It is from this review that several factors were identified as unique, after removing redundancies that existed from disciplines presenting the same factors in various ways. It is from this research the multi-disciplinary model of trust was derived (Figure 4-2).
Each of these trust factors represented in the MDMT has been tested by prominent researchers listed earlier and found to influence trust in a B2C e-commerce environment. This study sets out to establish the need for all of the trust factors in unison and their priority in an overall vision of trust requirements.

The research undertaken (Farrell 2004) also established the concept of the unbundling of trust as a single issue to recognise trust as existing with the company as well as in the company’s ability to deliver a safe and successful transaction. This research study proposes to investigate if trust in a company and trust in a company’s ability are considered as two separate issues.

This user focused study follows the philosophies of Human Computer Interaction which describes user involvement as crucial to understanding the various contexts of use (Kujala 2003) and the discipline of Information Systems where Cavaye states the need for the implementation process to be conscious of the needs of the people who will use the system (Cavaye 1995).

5.4.2 DEMOGRAPHICS AND GENERAL OBSERVATIONS

40 participants were selected of whom 20 were students and the remainder were from industry. This separates this study from previous research given that not all the participants were students. All participants were paid a nominal fee for their participation in accordance with University Research procedures. Participants were randomly selected from the local shopping precinct and university campus. Their ages ranged from 18 to 46, 20 of whom were under 21 years of age. A total of 28 were Australian born, 15 females, 25 males. The level of education varied from secondary school to degree level. Table 5-1 offers an overview of the participant’s demographics.

<table>
<thead>
<tr>
<th>Age</th>
<th>Education</th>
<th>Occupation</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-20</td>
<td>Yr 12</td>
<td>Student</td>
<td>Female</td>
</tr>
<tr>
<td>21-30</td>
<td>Diploma</td>
<td>Untrained</td>
<td>15</td>
</tr>
<tr>
<td>31-39</td>
<td>Degree</td>
<td>Trade</td>
<td>9</td>
</tr>
<tr>
<td>&gt;40</td>
<td></td>
<td>Professional</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 5-1: Demographics of Participants

The previous experience of the participants with Web transactions ranged from “never” to “substantial”, however 98% used the Internet more than once per week.
5.4.3 SETTING

All sessions were conducted in the Swinburne Usability Laboratory under the same system and environmental conditions as the pilot test (section 5.2).

5.4.4 METHOD

The following is an outline of the method employed for the study.

Participants were informed they were viewing e-commerce Web applications to determine the process by which they would purchase from online e-commerce sites. Initially participants were asked a series of questions in relation to personal reflection of their propensity to trust, computer usage, experiences and confidence towards Internet commerce.

Participants were then directed to 4 Web sites where they were asked to talk aloud (verbal protocol) as they viewed the sites. In particular they were requested to note their opinions and feeling towards the site while continually communicating to the interviewer which aspects of the site or company they were looking for and what they had noticed that would affect their opinion towards purchasing from that company online. As discussed below each site offered varied levels of professionalism, security, verification, navigation, privacy and other factors.

Participants were asked initially to discuss their knowledge, experience and feelings towards dealing with the company. While participants viewed each of the sites, standard questions were asked by the facilitator to ensure trust factors included in the model and user awareness of these factors were discussed. Participants were also asked to declare when they had decided to purchase or not purchase on the relevant site.

5.4.5 METHOD OF CAPTURING DATA AND DESCRIPTION OF SITES VIEWED.

Screen movement and voice were tracked and recorded for further reviewing. A written record was also kept of factors mentioned by the participants that they thought would influence their usage of the site. These factors were recorded regardless of whether they were included in the model.
The 4 sites were the sites in the pilot study in Section 5.1 where a brief description was given of each of the sites the participant were required to view. Although these sites are real they will be referred to as BookCo, GovCo, CinemaCo and AirlineCo in order to keep their anonymity. In relation to the pilot study they are Site 1: BookCo, Site 2: GovCo, Site 3:CinemaCo and Site 4: AirlineCo. As participants moved their way through they were encouraged to communicate which aspects of the site or company they were looking for or what they had noticed that would affect their opinion towards purchasing from that company online.

5.4.6 RESULTS OF THE STUDY

The following results were generated from the survey data collected. SPSS has been employed where statistical data is included. The intention on collecting this data is to substantiate the trust engendering factors as described in the MDMT of trust as well as the concept of the unbundling of trust. Further qualitative data from the participant’s responses are considered in order to obtain an overall understanding of the B2C e-commerce trust determination.

Cronbachs alpha coefficient of a scale was applied to the survey to ensure the scales of internal consistency. Ideally the Cronbach alpha coefficient should be greater than 0.7 to be acceptable for psychometric testing. The overall reliability coefficient for the questionnaire showed a strong internal consistency with a Cronbach alpha coefficient of 0.911.

5.4.6.1 The Unbundling of Trust

The unbundling of trust was examined on all 4 sites by asking the participants “if they trusted the company?” and secondly “if they trusted the company to provide a safe service over the Internet?”. That is from a consumer perspective, does trust in a company determine trust in the company’s ability to provide a safe transaction.

As the data violates the Kolmogorov-Smirnov test for normality the Wilcoxon Signed Rank Test for non parametric data with repeated measures is used within participants to compare the two samples. Results are shown in Appendix B Table 1. It is observed that for each of BookCo, GovCo and CinemaCo the associated significance levels are less than 0.05 indicating the two sets of results are
statistically different. The exception is given by the AirlineCo where the significance is 0.713 indicating no significant difference between the two samples, that is the participants did not differentiate between trust in the company and trust in the company’s ability to provide safe Internet transactions.

To understand why the response to the AirlineCo differed from the other 3 companies the data relating to knowing the airline and trusting the airline needs further detailed consideration. For 31 out of 40 participants who do not know AirlineCo, only 3 state they would trust them as a company whereas of the 9 who do know AirlineCo, 8 state they would trust them as a company and 9 who would trust their ability. The 1 remaining participant who knew AirlineCo but did not trust them as a company, previously had a negative experience with their service but not with the purchasing transaction, hence stated that they would trust AirlineCo with their ability to undertake an online transaction. In contrast of the 26 participants who knew BookCo, 24 participants trusted their service, however only 10 trusted their ability.

This difference in trusting a company and trusting in their ability is reiterated in CinemaCo where 32 participants trusted the company while only 17 trusted in their ability and GovCo where 31 participants trust the government while only 18 trust their ability to deliver a safe and secure online transaction. The data therefore suggests that for 75% of the responses, the participants recognised a difference between trusting a company and trusting a company’s ability to deliver a safe, secure online transaction.

5.4.6.2 Trust Factors Trust Determination

Throughout the survey, participants were exposed to the various terms listed as the trust factors identified in the MDMT. Participants were consequently asked to rate each factor with either (0) important to trust, (1), some influence or (2) no influence at all. A cluster analysis was undertaken to determine if the factors were identified as belonging to a cluster of factors influencing trust either as important or some influence. The results in Appendix B Table 2 display final cluster centres after 9 iterations. The response to trust factor influence is summarised in Table 5-2.
The response to privacy policies was polar, clustering around important to trust and no influence at all. A possible explanation to the strength of opinion at either end of the scale may relate to participants who recognised the essential importance of policies with personal details and those who do not.

5.4.6.3 Personal Factors Affecting Trust Determination

In the MDMT there are personal factors identified as influencing trust such as the participant’s technical knowledge and their ability with e-commerce, their personal propensity to trust and their previous experiences with e-commerce. For reasons of this research it is required to address these in the context of this exercise.

<table>
<thead>
<tr>
<th><strong>Influence on Trust Determination</strong></th>
<th><strong>Important</strong></th>
<th><strong>Some Influence</strong></th>
<th><strong>Not Important</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trust</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Engendering Factor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigation</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to use/ Usability</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived size of Company</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other services offered</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to contact company</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of site</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowing people at company</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site enjoyment</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process of delivery</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method of Payment</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Known brand</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Usefulness</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encryption, tech security</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Links to other sites</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy on personal details *</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Recommendations</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information provided</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testimonials from Customers</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Recognition</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd Party Verification</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5-2: Summary of Response to Affecters of Trust in B2C E-commerce
*polar responses*
5.4.6.4 Technical Knowledge

47.5% of participants stated that they were not confident in their technical knowledge and ability to buy goods and services on the Internet. Supportive comments offered regarding concerns of insufficient technical knowledge included “not confident as I don't know the entire process...”, “I am unsure about online transactions and do not prefer it...”. The Wilcoxon Signed Rank Test for paired data was employed to compare the participant’s perception of their own technical ability and their perception of the Internet as offering a safe method of transacting. The significance value was given as 0.527. This being greater than 0.05 indicates that the two scores are not significantly different and that the participants who were not confident in their technical knowledge and ability to buy goods and services on the Internet also felt that the Internet was not a safe method of making a purchase.

5.4.6.5 Experiential Knowledge

To determine if a consumer's personal experiences with e-commerce affected their trust in purchasing online, participants were asked from your experience do you believe buying goods and services on the Internet is a safe method of making a purchase? Participants were given the options of agreeing, disagreeing or stating that the question was not applicable not having used e-commerce.

30 participants stated that they had experience with e-commerce and of these 30% felt that it was not a safe method for making a purchase. Comments to support their choice included:

“Don't feel confident in giving credit card details over the net despite Web sites published security measures. Hackers seem to be able to circumvent systems, only use Internet banking to check account balances”;

“I feel that my security will be in the hands of others once they have broken into the system and received all my personal information”;

“Look it doesn't matter what a Web site says (CinemaCo), visa it doesn't matter, can say 200% money back guarantee but it will never change what I've seen and how easy it is to do for someone who wants to”;

“It may be detrimental if the task in not undertaken correctly, therefore prefer to do manually, I've seen it messed up before”.
5.4.6.6 Propensity to Trust

To determine if a participant’s self perceived propensity to trust affected their intention to purchase they were asked if they considered themselves as either extremely careful who they trust; or prepared to trust people but do so with caution; or tend to trust all people. The data in Table 5-3 was compared to each participant’s response to their intention to purchase over each of the 4 sites using cross tabulations within propensity to trust, that is, given the participant’s propensity to trust would they purchase from the site.

The data does not show a substantial difference in any of the groups of cells to confirm that the experience with e-commerce affects the participant’s decision to purchase. With CinemaCo the participants who stated they were not confident with e-commerce and those who intended to purchase is equally represented by those who were not confident and chose not to purchase. This result is not consistent however with the other sites, BookCo has a substantial number of participants who stated they would purchase from their site irrespective of their previous experience. AirlineCo data demonstrates that a participant is nearly as likely to purchase as not purchase, irrespective of their confidence in e-commerce.

Overall within this research the data does not suggest that the propensity to trust of the individual affects the decision to purchase.

<table>
<thead>
<tr>
<th>Intention to Purchase</th>
<th>Propensity to trust</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Extremely Careful</td>
</tr>
<tr>
<td>BookCo</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>GovCo</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>CinemaCo</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
</tr>
<tr>
<td>AirlineCo</td>
<td>Agree</td>
</tr>
<tr>
<td></td>
<td>Neither</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
</tr>
</tbody>
</table>

Table-5-3: Cross Tabs of Self Perception with Trust and Intention to Purchase.
5.4.7 DETERMINING A SAFE TRANSACTION METHOD

In previous studies (Farrell, Leung et al. 2000; Farrell, Farrell et al. 2001) consumer’s had shown an inability to determine if a site was providing a safe transaction method. To determine if this was the case with the participants within this study the question was asked for each of the four sites if the encryption included was adequate for a safe transaction. The inclusion of encryption on the four sites varied in that it existed for CinemaCo and AirlineCo only, there was no method provided for a secure transaction on either the BookCo or GovCo sites.

Table 5-4 shows the results for participants perception of adequate encryption used on the respective sites.

<table>
<thead>
<tr>
<th>Company</th>
<th>Encryption Used on Site</th>
<th>Number of Participants Who Considered Encryption was Adequate</th>
<th>Number of Participants Who Were Correct in Their Judgment of Adequate Encryption (Excludes Unsure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BookCo</td>
<td>No</td>
<td>15%</td>
<td>83%</td>
</tr>
<tr>
<td>GovCo</td>
<td>No</td>
<td>58%</td>
<td>25%</td>
</tr>
<tr>
<td>CinemaCo</td>
<td>Yes</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>AirlineCo</td>
<td>Yes</td>
<td>33%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Table 5-4: Results for all Sites if Participants Recognised Adequate Security for an Online Transaction

Table 5-4 indicates an unsatisfactory recognition of adequate encryption on three of the sites with 33%-35% of participants not able to recognise the encryption on the AirlineCo and CinemaCo sites respectively where it did exist. Of particular note a large proportion (83%) did recognise the lack of encryption on the BookCo site where no encryption was employed, however this was not the case on the GovCo site.

This then asks the question of whether there is an expectation of certain organisations to provide safe and secure transactions. In particular are government sites expected to offer safe transactions given that only 25% of participants were able to recognise the lack of security with the government site while 83% recognised the lack of security with a non government site?
Responses to further questioning and comments made regarding the government providing safe transactions showed that there were 23 participants who believed the government site had secure encryption and only 10 who felt the site did not offer secure encryption. The remaining 7 participants were unsure. 95% of participants answered in the positive when asked if they believed all government sites would offer the highest level of encryption available.

Participants who believed the GovCo site did have adequate encryption were asked to say how they knew it had encryption. Comments could be categorised into two main groups, those participants who stated that secure encryption was “assumed since it was a government site”, and those who had stated that they had read evidence of the encryption existing on the site, for example, “the disclaimer lists 128 bit SSL encryption”. These comments related to information on the site which did not exist.

5.4.7.1 Trusting Technical Ability and Intention to Purchase

To determine if trusting in a company’s technical ability influenced their intention to purchase the Wilcoxon Signed Rank Test for non parametric data with repeated measures within participants is employed (Appendix B Table 3). GovCo, CinemaCo and AirlineCo gave a significance of .073 0.451 and 0.735 respectively from the Wilcoxon Signed Rank Test. These results show no significant difference in the trust in the company technically and the participants intention to purchase. BookCo however, gave a significance of .002, that is trusting the company’s technical ability did not influence the participants intention to purchase from the site.

As previously stated of the 26 participants who knew BookCo, 24 participants trusted their service, however only 10 trusted their technical ability. Only 4 of the 26 who knew BookCo stated they would not purchase from them online. Of the remaining 14 who did not know BookCo, only 4 stated that they would purchase from them online. Further, of the 30 who did not trust in BookCo’s technical ability, 18 still stated that they would purchase from them online and of these 18 only 4 did not know BookCo.
5.4.8 DISCUSSION OF SURVEY RESULTS

The purpose of this study was to determine the consumer’s perspective of which trust factors were perceived to be essential on a B2C e-commerce site when presented to the consumer in unison and not limited to a specific discipline. The study was also to establish the priority consumer’s placed on the trust factors in an overall vision of trust requirements. Previous research that led to the MDMT considered trust engendering factors or groups of factors relative to the researcher’s discipline and independent of other factors equally empirically proved by other discipline researchers. Participants in this survey were introduced to each of the trust factors recognised in the multi-disciplinary model of trust and questioned in regard to their opinion of their importance and influence on their trust perception.

Each of the trust engendering factors identified within the MDMT was tested for its relevance in trust determination in a B2C e-commerce environment. These included factors relating to their perception of what the company’s site had to offer them in terms of safety, security and service as well as those factors that were more personal to the participant such as their technical knowledge, their experiential knowledge and their propensity to trust. In the development of the MDMT it is also suggested that trust should be unbundled as a single entity and considered from the perspective of trust with the company and trust in the company’s ability. Data has also been collected to substantiate or refute this proposal.

5.4.8.1 Unbundling of Trust

The data collected (Section 5.4.6.1) suggests that the participants generally consider trust as two independent levels of trust, trust with the company and trust in the company’s ability to supply a safe and secure purchase. This data disproves the concept that trust in a company determines trust in the company’s ability to provide a safe transaction and that there is sufficient statistical significance to assume that the resultant data has not occurred by chance. At the individual site level there was however an exception to this proposal with AirlineCo, prompting further investigation of the data. It was found that unlike the other companies it was not a local company and the majority of the participants did not know the company. Where the participant knew the company and had positive experiences with them
the response was considerably in favour of trusting the company and its ability. The result from the airline company suggests that the familiarity with what is solely an online company encourages trust in both the company and its ability. This factor will be further investigated in Chapter 6.

The other three companies considered, all of which had established their reputation with a B&M presence, did not necessarily carry the consumer’s perception of trust in the company to trust in their e-commerce capabilities. The proposal for the unbundling of trust into trust with the company and trust in the company’s technical ability will therefore stand as accepted.

5.4.8.2 Site Based Trust Engendering Factors

Throughout the survey participants were exposed to each of the terms, symbols and representations that are recognised by researchers to engender trust through specific questions and sites offered by their facilitator. The final questions of the survey related to B2C e-commerce in general and specifically questioned to what extent each of the factors they considered to influence their trust perspective. For consumers to minimise exposure to unscrupulous behaviour in B2C e-commerce there are certain factors they should consider essential. These factors relate to the inclusion of encryption, privacy policies, delivery methods (including returns policies) and where the company is not known a third party who is willing to validate the e-commerce viability of the company. Not ensuring all or any one of these factors is present when purchasing online leaves the consumer vulnerable to both financial theft and identity theft furthering the possibility of fraudulent activity.

The data suggests that the factors the participants considered as most important from their perspective of trust were navigation, easy to use, ability to contact company, how big the business seems and other services offered. These factors were closely followed by quality of site and knowing people at the company. Excluding the factor of knowing people at the company each of these factors are easily replicated by an illegitimate individual allowing for criminal activities to occur. None of these factors affect the security of the transaction, securing of personal information or ensuring the safe delivery of product.
The next level of importance to the participants when considering trusting an e-commerce purchase were site enjoyment, known brand, method of payment, and process of delivery. This is followed by usefulness, encryption and technical security, links to other sites and usefulness. Within this study it was found that encryption and technical security, imperative factors in considering a safe Internet transaction are generally thought of as having some influence although not essential. Not considered to have an effect on trust include 3rd party verification, recommendations, information provided regarding delivery and returns, testimonials of customers and user recognition. Where a site does not have a profile such as a B&M business a 3rd party verification should be considered essential to guarantee the validity of the existence of the company and its ability to undertake a safe transaction. To the consumer this is the only form of external verification they are offered, as one participant stated “it is easy to fake 3rd party verification”. Another essential factor that has been placed in this list of unimportant is the process that is to be used for delivery and policies regarding returns. This issue should be fully understood before purchase and not when there is a problem after the purchase has been made.

From the collected data it appears that consumers would be in danger of exposing themselves to unsafe transactions and allowing their personal details to be vulnerable.

The ordered list of trust engendering factors leads to the question, “do consumers know what to look for in a safe transaction?” During the process of this survey it was ensured that each of the factors was brought to the attention of the participant to ensure they were making informed decisions and were not perplexed with terminology or symbolism.

The data shown in Table 5-4 demonstrates the participant’s inability to correctly recognise adequate encryption and to make assumptions in regards to the type of business operating the site and their commitment to offering safe transactions. This was apparent with the responses to the expectation of a government site to include encryption to the highest level available. The inability to recognise a safe site refers back to the response to the inadequacy stated by the participant in relation to their technical knowledge and ability with e-commerce. The response supports the
perception that the participants claimed in being inadequate in their technical knowledge and that it is not just a self perception but a reality. In the absence of a more substantial clue to the security of the site, participants have reverted to their B&M world assumption of “government backed” therefore secure. Participants had assumed adequate levels of security from a government site that they had not assumed from the non-government site.

5.4.8.3 Individual Based Trust Engendering Factors

As the consumer approaches e-commerce they bring with them two forms of experience. Their *experiential knowledge* with e-commerce which can be either personal, known through acquaintances or through the media and their *technical knowledge* that allows them to feel confident when undertaking what is basically a technology replacing a previously personalised activity.

Nearly half of the participants stated they were not confident in their technical knowledge and ability to buy goods and services over the Internet which is in accordance with the data collected on their perception of the trustworthiness of the B2C e-commerce. It is evident from this data that the technical knowledge the participant brought with them to the site substantially affected their perception of B2C e-commerce and should be considered by developers who are trying to encourage trust with the technology. It is also evident that frequent Internet usage does not determine a person’s perception of their ability and confidence in using B2C e-commerce given that all but one of the participants were frequent Internet users yet 47.5% felt they were not technically knowledgeable enough to undertake an Internet based transaction.

It is apparent from the data that the impact of a lack of confidence in technical knowledge or ability is of importance to the trust of e-commerce sites and should be considered by developers when creating B2C e-commerce sites.

The second form of experience that the consumer brings to the e-commerce site is that which they have with previous purchases on the Internet, the experiences of others, through personal acquaintances or media. From the comments made by the participants they appeared to have established opinions relating to all B2C e-commerce given previous personal or viewed negative experiences. From the data
approximately one third of the participants who had experienced e-commerce felt that it did not offer a safe method for making a purchase. This custom is not just a loss to the company where the bad experience occurred but to all e-commerce businesses and is therefore an issue that must be considered when developing e-commerce sites and should be considered with development as a trust factor. These findings are in keeping with previous research discussed in Chapter 1 (Krone and Johnson 2007).

The consumer’s personal propensity to trust in their everyday lives does not show any effect on the purchasing intention in relation to B2C e-commerce. The participants were as likely to purchase from a site as not to purchase independent of their trusting behaviour and beliefs in the everyday non virtual world.

5.4.9 TRUST AND INTENTION TO PURCHASE

The results from the participants reactions to the BookCo site offers what appears to be an anomaly in behaving in such a way that would enable a safe transaction. The participants while stating that they are aware of the short fallings of the site still state an intention to purchase from that site. This occurs in two data areas where the participants are asked if they trust the company’s ability and where they are asked if the site offers adequate encryption. In both cases participants recognise that the site is inadequate and yet in the final decision to purchase does not indicate that they will decline. The trust that is shown in the company by the participants who know the company is significant and appears to have more of an influence than the knowledge of the inadequacy of the security and other trust factors of the site.

5.4.10 THE EFFECTS OF THE STUDY ON THE MULTI-DISCIPLINARY MODEL OF TRUST

The MDMT was developed from previous rigorous, empirically tested research. Each discipline tested their recognised trust contributing factors in isolation from other disciplines. Participants were introduced to all of the factors that influence B2C e-commerce trust in unison and not as isolated disciplinary studies as in previous research.
The trust factors that were seen by the participants to influence their perspective of trust were not necessarily those that created a safe transaction environment, verified the existence of the company or ensured safe delivery of their products with recall. The previously acquired technical knowledge and experiential knowledge influenced the trust perspective of the individual, however the propensity to trust of the individual did not appear to bear a relationship with the intention to purchase. There is no intention in this study to downgrade the importance of any of the factors identified by other research, rather to identify the consumer's perspective of the perceived importance of these trust engendering factors when presented in their entirety rather than in discipline specific isolation. The participants in this study were consequently presented with all aspects of trust that have previously been researched without the emphasis placed on only the factors relating to a specific discipline, allowing for a view of how they prioritised each factor as it was presented. From the information given by the participants and their prioritising of importance of trust factors, the resultant MDMT would appear as in Figure 5-1 which omits some of the most important factors pertaining to discerning a safe e-commerce site (the factors omitted or not considered of importance have been greyed in Figure 5-1).

![Figure 5-1: MDMT Demonstrating Consumer Priorities When Discerning a Trustworthy E-Commerce Site](image-url)
These findings ask the question as to whether the consumer is well educated in using B2C e-commerce so as not to open themselves to detrimental behaviour. Given the influence of experiential knowledge this may hinder further interaction with e-commerce resulting in a consequential decline in e-commerce uptake. Further the knowledge and trust in BookCo appears to offer the opportunity to gain trust in B2C e-commerce for those who have an established trusting clientele. The concept of established and establishing trust to improve opportunities in B2C e-commerce will be further explored in Chapter 6.

5.5 SUMMARY

The development of the MDMT to incorporate the research from the various contributing disciplines has been tested with all aspects of the trust models being considered simultaneously and factors have been prioritised in their level of importance from the consumer’s perspective. While the factors involved in the MDMT and the unbundling of trust have been verified, from the study it was evident that the participants did not hold in high priority those factors which were paramount for a safe and successful transaction. There was also evidence to suggest that the participants were strongly influenced by their knowledge of the company as a B&M entity and the company’s standing as being trustworthy irrespective of the technical security offered online. This aspect of the company’s standing in the community and its affect on trust, even to the detriment of client security will be investigated in Chapter 6.
CHAPTER 6
HARNESSING SUSTAINABLE TRUST

Chapter 6 and Chapter 7 undertake case studies of successful B2C, SMEs to ascertain their methods for establishing and sustaining trust. Firstly this chapter will argue the use of case studies to address current issues, followed by a description of the businesses involved and the reasoning for their inclusion. Chapter 5 identified an anomaly in relation to willingness to purchase where there is not trust in the company’s ability yet trust exists with the company. Through the use of case studies this chapter discusses the benefits in developing benevolent communities in order for SMEs to encourage trust in their company to such an extent that a “blind trust” is practiced by consumers, ignoring the recognised aforementioned trust factors. The implications for the SMEs are that there exists a method by which they can compete in the e-commerce market to attain consumer trust without adhering to the stringent and often expensive trust factors previously identified in Chapter 5 by taking advantage of the anomaly described in Chapter 5 (Section 5.4.9). Chapter 7 will discuss through the experiences of the case studies the risks that are facing SMEs and the strategies developed to deal with these risks.
6.1 INTRODUCTION

Trust has been acknowledged as one of the main reasons for Business to Consumer (B2C) e-commerce (EC) not reaching the predicted sales targets, establishing a need for trust engendering behaviour mechanisms to be recognised and adopted. Chapters 4 and 5 collated and tested acknowledged trust engendering factors from varying disciplines that are able to be implemented by the company to improve consumer trust. Small to medium enterprises (SMEs) are at a disadvantage in the world of e-commerce not having the size or the reputation of their larger counterparts to portray themselves in an equivalent manner which would engender trust. This chapter will explore through case studies of SMEs who have developed Internet based e-commerce businesses in Australia and how they have taken advantage of building and fostering communities to develop trust.

6.2 CASE STUDIES

Case study research is especially appropriate in research aimed at building or extending theory (Eisenhardt 1989) and is a research strategy that allows for an in-depth exploration of a particular phenomenon (in this research, online trust) in a particular context (in this research, SMEs in the B2C context) (Darke, Shanks et al. 1989; Dube and Pare 2003). Sources such as (Benbasat, Goldstein et al. 1987) and (Yin 2003) have agreed that the case study method is well justified in these respects. The case studies were exploratory as described by Yin (Yin 2003) in relation to the question “What can be learned from a study of successful B2C e-commerce SMEs?”. The data that was collected and analysed was from multiple sources including initial email contact with formal questions, personal informal interviews, inspection of Internet presence and offered company documentation. In all, 9 companies were initially contacted in 2006, 6 of which were followed up with semi-structured interviews in accordance with guidelines (Neuman 2006). These follow up interviews were at the request of the companies. Each interview lasted approximately one hour. Notes were taken during the interview to allow the interviewee to verify the
details that were recorded. The data was collated and subsequently sent to the interviewees for verification and to improve the validity of the data collection (Yin 2003).

The interviewees in all cases were CEO’s or Senior Managers. Each of the managers interviewed were involved in the decision making process of the companies online strategies and the follow through with the implementation of these strategies. The products for sale in these stores were not large value items thereby not creating substantial risk on a normal size order that would require further checking. This assists when comparing stores in the nature of their business and the relative risk of fraud or deception. This chapter considers 3 of these case studies in detail that have all developed strategies to deal with e-commerce trust. The names to be used are BookCo (as discussed in Chapter 5), ParentCo and GardenCo (all pseudonyms) for the case businesses. Chapter 7 will consider 3 additional cases to be referred to as FlowerCo, HealthCo and ComputerCo.

The focus in this chapter on the 3 cases of BookCo, ParentCo and GardenCo was to further address the anomaly raised in chapter 5 of the consumer’s willingness to purchase with a company when they were not confident in the vendor’s ability to provide a safe transaction. The selection for the study in this chapter followed the criterion of an association of some type of special interest community, and that their online business strategy was tied with product/service provision to this community. These attributes being the positive factors which were most commented on by the participants of the Chapter 5 study. Other criteria included awareness by each organisation of issues pertaining to trust engendering factors and community loyalty. FlowerCo, HealthCo and ComputerCo also meet the criterion for literal comparison (Yin, 2003), as they were all small businesses of less than 30 employees and were successfully trading online for at least 2 years. The latter 3 businesses will be visited in Chapter 7 where a wider discussion of current successful e-commerce B2C SMEs is undertaken. The research design again accommodates for different types of business models (i.e., online only, and ‘Bricks and Mortar’ combined with an online presence (Table 6.1).
BookCo was established as a B&M company and has grown to 5 outlets within Victoria over the past 20 years, extending their sales to online in 2002. BookCo is well renowned for its benevolent in-store behaviour offering community information, arranging guest speakers, book clubs and social functions. BookCo had a strong alliance of customers before moving to online sales.

ParentCo was established in Melbourne in 1999 as an e-commerce B2C business that is solely online, selling products relating to newborns, young children and mothers. ParentCo provides a place for parents to receive advice, information and to meet other parents online. ParentCo has a business strategy that encourages a strong membership involvement of over 90,000 members in discussion boards, online information and a shopping mall. The membership is not only Australia wide but world wide, creating a 24 hour involvement in its many features. The continual 24/7 basis creates a dynamic environment that offers constant new information and discussions to housebound parents. It boasts sponsorship from large multinational companies that are household names and family oriented, that in return receive the benefit of linkage from the substantial membership. Today the business generates

<table>
<thead>
<tr>
<th>Company</th>
<th>Online Only</th>
<th>Bricks and Mortar + Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>BookCo</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>ParentCo</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>GardenCo</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>FlowerCo</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>HealthCo</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ComputerCo</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 6-1: Presence of Company

6.2.1 PROFILES
approximately 40% of its total sales via the ParentCo Web site the remainder being through eBay.

**GardenCo** was established in 1978 as a shop front and mail order business selling plant and seeds. It is located at an historic homesite in a sea-side area overlooking the bay. GardenCo offers club membership giving discounts to members. Online purchasing was introduced in 2002 and has built its online orders to 30% of total business of which 90% are club members. Mail orders have reduced 40% over this time. GardenCo has a strong supportive membership that involves activities and advice as well as discount purchases from their store.

**ComputerCo** was established in Melbourne CBD specialising in handheld devices, PDAs, Mobiles, GPS Solutions, Notebooks and wireless technologies. It was initially established as a B&M store and extended its business to online in 1998. It is not obvious on entering ComputerCo that it also runs as an online business. The online department runs from the upstairs offices within the same building, from here staff have instant access to available stock. The online store generates approximately 20% of overall sales.

**FlowerCo** is a second generation long term established family business in Melbourne inner suburbs. The online store was established in 2000 and accounts for approximately 10% of sales. FlowerCo sells and delivers flowers and floral arrangements, catering for general requests or specific occasions such as weddings and mother’s day.

**HealthCo** established in 2000, has a B&M store front near the Melbourne docks. The shop front is not in a shopping centre but rather a warehousing area. Customers are able to visit the site however this is a rare event. The online store offers equipment to assist with back disorders, offers medical advice, story sharing and discussion forums. HealthCo is for all intents and purposes an online store with 100% of trade online. Discussion forums are member based. HealthCo permits other methods of payment after ordering online such as fax, phone and cheque. HealthCo have increased their online payment acceptance from 80% online, 10% fax, 9% phone and 1% cheque to 92-94% online, 4-5% phone, <1% fax, and <1% cheque in the 6 month period previous to the interview.
6.3 THE HUMAN FACTOR AS A BENEFIT TO SMES

The research literature documents a range of factors that have been shown to encourage trust, including several guidelines for engendering trust via a company’s online presence. These factors relate to aspects such as e-commerce technologies, fulfillment, reputation of the company, branding, professionalism and so forth. Some of these trust engendering factors are within the control of the company itself, and can consequently be incorporated in its online presence. Trust engendering endeavours often seek to assure prospective customers that the company is trustworthy and capable of delivering the promised products/service, and also that it has appropriate procedures and protocols to monitor and control the security and successful performance of online transactions. Tan and Thoen (Tan and Thoen 2001) have termed these dimensions of trust respectively as “party” trust and “control” trust. It is argued that party trust and control trust supplement or compliment each other to derive the overall “transaction” trust (as discussed in Section 4-1).

The impetus for undertaking this study relates to what appears to be an anomaly in data discussed in Chapter 5 from a book company denoted by BookCo which will be revisited in this chapter. In the study customers who stated they knew the company all stated they trusted the company, however over half of these people stated that they did not trust the company’s ability to provide a safe secure e-commerce transaction. Of these customers who knew BookCo, the majority were still willing to purchase from their online site, even though they had stated significant reasons why their site was not a secure e-commerce site. This book company and a government department researched received this misplaced trust whereas other companies did not. The misplaced trust generally appeared to relate to the consumer’s knowledge and understanding of the company.

In this chapter it is proposed that the presence of a special interest community, in conjunction with a company’s e-commerce activities, increases party trust to the degree of “blind” trust in the company. This can occur irrespective of the company’s incorporation of control trust features, commonly advocated in the trust literature, in terms of their online presence. In doing so, this chapter thus questions the often
stringent guidelines stipulated by many literature sources on e-commerce Web development in terms of trust engendering factors. As such the theory of online trust (Tan and Thoen 2001) is to be extended by including an antecedent of benevolent behaviour as a subjective trust reason for party trust. As a working definition for this paper benevolence will be defined as ‘the disposition to do good’. In the context of e-commerce this assumes that the vendor is acting with good will towards the client.

This chapter reviews the literature outlining the factors discussed in Chapters 4 and 5 that assist in the development of e-commerce trust. It will distinguish between factors and strategies within the company’s control, and exogenous factors inherent to an individual’s propensity to trust an online vendor. A condensed list of several factors within the company’s control that affect trust determination is applied to three case studies conducted on small to medium online companies that have pre-established special interest communities prior to their e-commerce endeavours. An assessment of how the presence of communities have shaped the way these companies employ e-commerce activities in terms of trust engendering will be undertaken. The findings suggest that it is possible for the benevolence arising from the presence of a special interest community, to manifest in “blind” trust of the company by its consumers to the near exclusion of control trust as a contributing factor in terms of overall transaction trust.

6.4 TRUST ENGENDERING FACTORS ON B2C E-COMMERCE SITES

In Chapter 4 a review of existing models of trust was undertaken that was inclusive of prominent rigorous research. The aim of the review was to collate research from multiple disciplines that were involved in e-commerce and identify the unique factors that lead to a trustworthy business site for B2C e-commerce. Each of these factors with their relevant references and definitions are included in Chapter 4 Tables 4-2 to 4-5. The factors recognised in the research that affect trust in B2C e-commerce by the consumer can be divided into two separate categories, site controlled factors (Table 4-2) and those factors that are antecedents of the consumer pertaining to their experiences and propensity to trust (Table 4-4).
From this study it was recognised that it is possible to emulate many of these factors and develop an Internet business that would appear to be trustworthy, thereby affecting the buyer’s belief about the site and the company’s ability and willingness to act in a trustworthy manner. The literature suggests that by following design principles, including required technical facilities and ensuring the correct e-commerce social behaviours it is possible for a “fly by night” company to exist. If the single visit to a site is the only reference that the consumer has to the site then purchasing online would require a higher level of trust than a face-to-face purchase (Choi 1998). (Tan and Thoen 2001; Verhagen, Meents et al. 2006) refers to these factors that can be adjusted by the e-commerce site to improve the perception of a trustworthy site as the “control factors”. Grazioli and Jarvenpaa (Grazioli and Jarvenpaa 2000) discuss the outcome of this manipulation of a buyer’s belief about a site and its consequential positive affect on the buyer’s attitude toward the site as stemming from the Theory of Reasoned Action (Fishbein and Ajzen 1975).

The integration of the Internet with commerce has removed the human factor from an environment that relied on the subtleties of behaviour together with the solidness of a physical environment to engender trust. Giddens terms this detachment of the long established personal relationships and face-to-face interaction that are now conducted over distance or with automated systems as dis-embedding (Giddens 1990). Riegelsberger et al. see these deprivations of human contact being replaced with computers over a distance as lost opportunities for trust building (Riegelsberger, Sasse et al. 2005). While it is feasible to influence the factors that determine control trust to a large extent dis-embedding has removed the opportunities to personally overcome the influences of antecedents and therefore methods to influence “party trust”. Dis-embedding creates a need for methods more relevant to e-commerce to be identified, to overcome the concerns the target audience bring with them to e-commerce technology.

Human controlled factors, the antecedents consumers bring with them to e-commerce, lead to what Tan and Thoen refer to as “Party Trust” and argue that the stronger the party trust the less reliance there is on control trust. It will be argued that by increasing the consumer’s exposure to the benevolence and capabilities of
the business undertaking e-commerce it is possible to overcome negative trust antecedents of the consumer thereby increasing party trust. The following section will distinguish between the site controlled factors and human controlled factors and then consider business strategies to improve antecedents which have ostensibly been removed from the control of the e-commerce business site.

6.4.1 SITE CONTROLLED FACTORS

While it is possible to view on a site factors such as the type of encryption used, the usability of a site and their fulfillment management system, it is not possible to obtain an empirical understanding of the size of a company, the legitimacy of the testimonials or benevolence behind the tailoring. These latter factors relate to the impression that is made by the company's site rather than objects that can be recognised as secure, trustworthy factors.

Careful design and marketing will assist in realising the personal requirements of the consumer on their visit to the site. The business must meet or even create the user need with the appropriate level of store enjoyment, navigation and usefulness to the individual consumer.

Therefore, to an extent, perception of the professionalism and legitimacy of the site can be controlled by the site features, however transaction trust will be controlled ultimately by the antecedents of the consumer.

6.4.2 HUMAN CONTROLLED FACTORS

Factors that are out of the control of the site technician or designer relate to the antecedents of the consumer, the factors that the consumer's bring with them when they first visit the site. These factors relate to their technical knowledge, experiential knowledge and their propensity to trust.

These antecedents provide a different challenge to the e-commerce business in that the company must develop a business strategy that entails creating and keeping traffic on their site. Not only does the business want to maintain their customers but to develop a mechanism that will support them in their activity and trust in their
decisions. Such a business strategy would need to consider placing an emphasis on the antecedents of trust. This requires taking into consideration the consumer as an individual rather presenting a remote Web application that is known to be vulnerable to the development of a trustworthy façade.

6.5 METHODS OF IMPROVING THE ANTECEDENTS OF E-COMMERCE TRUST

The antecedents of trust for an e-commerce site such as propensity to trust, technical knowledge and experiential knowledge are considered to be in the domain of the consumer and have developed or, in the case of technical knowledge, not developed over time. Hence it is argued that to overcome negative trust antecedents, time is the key to establishing a trusting, understanding relationship. It is also argued that a business strategy that develops an understanding of the benevolence and competence of the company while educating the consumer to the new technology will overcome negative antecedents, thereby increasing party trust. Tan and Thoen discuss party trust as stemming from previous experiences of the individual, “communality” relating to the referred trust from the individual’s personal communities and personal understanding of the goals, capabilities and plans. In contrast to this the following discussion focuses on building trust through the company. Community trust is developed first hand through the company rather than referred by external communities belonging to the individual by demonstrating benevolent behaviour and developing community activity.

6.5.1 PROPENSITY TO TRUST : SOCIAL INTERACTION

Deutsch stated that without detailed knowledge about the other actor’s abilities and motivation we will have uncertainty and thus a need for trust (Deutsch 1958). To overcome the dis-embedding of human contact within the e-commerce process that consequently allow opportunities for trust building, virtual communities can exist that create a metaphor for a special interest community in society. The formation of communities and like minded groups has always been intrinsic to
human nature throughout history. Whether we gather for reasons of culture, race, religion, gender, age, sport or socio-economics we each find our place within society’s groupings relating, understanding and building trust with others in our adopted community.

These virtual communities reflect a real world environment that is equipped with human voices and like mindedness in one or many areas. As each member of the community gets to know the other members, the rules of play and boundaries within the community, they can call on their knowledge of how a real world community operates and allow themselves to be guided by others with whom they have become familiar. This is evident in previous research (Sproull and Kiesler 1991) that shows that communities often develop strong norms and expectations for behaviour which in turn creates expectations through familiarity.

Within these communities we gain knowledge and understanding of those who are members. This is a process that requires time to evolve. Luhmann states that “familiarity is a precondition for trust” (Luhman 1979). Events, people and process that were once unfamiliar to the new members of the community become familiar, Luhmann also states that “the experiences and knowledge form the basis for trust in future familiar situations”. Over time the members understanding and knowledge base of the community increases such that group participation becomes common thereby extending their comfort zone and their willingness to try new activities within what has become a safe environment.

6.5.2 EXPERIENTIAL KNOWLEDGE: INVESTING IN THE FUTURE

The consumer will at some point need to make a judgment as to whether to trust or not to trust the vendor. While the opportunities to get to know the vendor are hindered in an online environment this does not mean that the communication needs to be solely on a technical level. There are a number of situations throughout the intent to purchase stages of browsing, comparing, negotiation and fulfillment that allow for the vendor to demonstrate traits of benevolence, understanding and knowledge. This time allows opportunity for the customer to build a history with the
vendor as a benevolent benefactor who is willing to invest time in each prospective customer as would be done in a face to face situation. There are many ways in which a vendor may offer more than a technical solution to a purchase in B2C e-commerce and attract potential customers to their site. This can include demonstrating an interest in the consumer as a person rather than as a customer providing information areas, discussion boards, frequently asked questions and creating a community for like minded people to meet. Other interactions with customers may include demonstrating a personal interest in the consumer throughout the process of the sale from inquiry stage to the final delivery stage by supplying contact details via email, phone and fax and replying to questions personally rather than automated responses.

While many of these features of a store are both time consuming and financially expensive they are an investment in the future of the business. The KITE research into critical success factors (CSF) for SME’s in the European Union (EU) found the most frequently reoccurring CSF was commitment. The report found that commitment also compromised the owner’s wealth creating motivation (Feindt, Jeffcoate et al. 2002). Axelrod discusses the “shadow of the future”, referring to the prospect of future encounters which requires planning, organisation and delivery of benevolent behaviour for the good of the long term goal of building trust (Axelrod 1980). A continued relationship that forms benevolence between vendor and consumer can be grown before any transaction has even occurred.

6.5.3 TECHNICAL KNOWLEDGE: LEADING THE UNINITIATED THROUGH THE MAZE OF TECHNOLOGY

It is the nature of a metaphor to emphasise some aspects of the target and hide others (Lakoff and Johnson 1980). The aspect of benevolence that is demonstrated by the online community, the store assistant or helpful discussions is openly displayed so that the aspect of introducing an underlying new technology may be hidden from the user. While a benevolent metaphor may give trust in the vendor this trust may not transfer to the vendor’s ability. The introduction of new technologies with system dependant uncertainty and fulfillment concerns are
recognised as parametric risks (Grabner-Kraeuter and Kaluschka 2003) (Hirshleifer and Riley 1979) and therefore the gaining of trust to purchase through the e-commerce site can be achieved through a number of methods. These can include methods such as hiding the technology through the use of icons and metaphors developed to lead the user by hand through a process that is unfamiliar and highlighting the recognised parametric risks such as new technology, the fulfillment process or system dependent uncertainty and shifting the responsibility away from the vendor to a trusted counterpart.

In many cases the new user to e-commerce needs to undergo the transition from seeing the Internet as a research tool to a purchasing tool. In the initial stages of buying online there are many new concepts that are met and measured. Many new users may not have experienced the use of technology involving security that does not involve a well known, government backed, trusted institution such as a banking industry. This new technology also introduces the absence of human involvement. Inclusion of the technical system into a larger socio-technical system, i.e. recognising human actors as part of the process (Checkland 1999) will improve the efficiency and uptake of the technical system. The online community may build trust in other members and at the same time influence the trust in the provider of the community that has supplied and maintained the communication network. A consistent display of technical skills not related to transactions may increase the member’s confidence in the provider in all technical areas.

Metaphors may also assist in leading the user by the hand through a process that is unfamiliar and make it familiar. The metaphor allows people to try to learn about their new environment by making use of their past learning. This learning does not need to end with physical objects such as shopping carts but may also include social environments where the players are other shoppers, shop assistants and check out people.

6.6 THE BUSINESSES

After viewing the key trust factors included within the online business, initial emails were sent requesting information regarding the company’s successes and long term
business strategies, thus enabling a decision to be made on which companies to include in the case studies. After discussions with the company's representatives it was then possible to assess the establishment and consequential support of community within the respective business. In each case the strategies employed by the case organisations to engender trust online were examined. This included an examination of their e-commerce Website (i.e. which trust engendering features were present), and from the interview data, what specific management strategy was followed to foster trust online (i.e. in conjunction with their special interest community). Ethics appro

val was acquired which stipulated the confidentiality of their business. Each case was analysed iteratively verifying arguments offered by transcripts, documents and emails, allowing the development of a thorough assessment of each case. A comparison of trust engendering behaviours pertaining to their online presences is detailed below. In each case, insights were gained into each organisation's overall business strategy, supporting IT infrastructure, approach to consumer support, and aspects of its associated special interest community (Benbasat, Goldstein et al. 1987; Eisenhardt 1989; Galliers 1991).

This section relates to the three case studies BookCo, ParentCo and GardenCo, discussing their site attributes in regards to trust factors and the strategies they employed to build trust. The trust engendering site attributes for each case study are listed in Table 6-2. An explanation of the risk factor terminology and antecedent terminology is included in Section 4-2-4.
<table>
<thead>
<tr>
<th>Risk Factor Affecting Trust Determination</th>
<th>Included on E-commerce Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Perceived Site Quality</td>
<td>BookCo ≻ ParentCo ≻ GardenCo</td>
</tr>
<tr>
<td>Navigation</td>
<td>√</td>
</tr>
<tr>
<td>Store Enjoyment</td>
<td>√</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>√</td>
</tr>
<tr>
<td>Perceived Size</td>
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<tr>
<td>Links to Other Sites</td>
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<tr>
<td>Reputation Building</td>
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<td>Professionalism</td>
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<td>√</td>
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<td>Customer Interaction</td>
<td>√</td>
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</tr>
<tr>
<td>Reputation Building</td>
<td>√</td>
</tr>
<tr>
<td>Privacy Policy</td>
<td>√</td>
</tr>
<tr>
<td>Encryption</td>
<td>√</td>
</tr>
<tr>
<td>Fulfilment Management (technical)</td>
<td>√</td>
</tr>
<tr>
<td>Settlement Performance</td>
<td>√</td>
</tr>
</tbody>
</table>

Note: √ - included, x - not included, very limited
6.6.1 CASE 1: BOOKCO

BookCo as identified in Chapter 5 demonstrated an anomaly in how the participants surveyed responded to their perception of trust in the company and their willingness to leave themselves open to an insecure transaction. Participants who knew and trusted the company but were aware of the inadequacy of the security of their e-commerce business were still willing to risk trading online. This practice would leave customers open to security breaches and privacy issues.

**Included Trust Factors on Site**
The trust engendering factors listed in Table 6-2 (BookCo column) relate to the time of the initial survey with potential users, most of the factors that were negligent have subsequently been amended after the inadequacies and vulnerabilities were discussed at the interviews. The table displays the methods BookCo included or omitted to include on their site to assist in building trust in their online business.

**Experiential Knowledge**
BookCo offered nothing on its site that would to offer confidence to a consumer who had personal negative experience with B2C e-commerce. There were no visible features on the site that promoted security, privacy or fulfillment strategies undertaken by BookCo.

**Educational/Technical Knowledge**
The site was difficult to use with poor navigation and few cues to assist in the understanding of the technology.

**Propensity to Trust**
BookCo offered no assistance to overcome the skeptic or those genuinely concerned with e-commerce technology. BookCo needed to rely only on the positive experience that consumers may have had in their B&M store.

**Strategy of Trust Building**
As can be seen from Table 6-2 (BookCo column) the e-commerce site was quite primitive including factors that have been designated by researchers as basic requirements for e-commerce trust.
While the e-commerce site of BookCo had very poor navigation, no security, broken links and many other non trust engendering features, customers were still prepared to trust the company to take care of them online as they did in their B&M store. The company has been effective in building an application that consumer’s find trustworthy even if the trust has been wrongly placed in the company and not differentiated from the company’s ability.

In discussion with the CEO of BookCo it was said that “the customers know us well...we do a lot of community activities... 
...If a customer has a problem with our site they know they can call us and talk to people they know”.

The company has effectively relied on its reputation within the community to provide a trusting client base before moving to become an e-commerce business.

6.6.2 CASE 2: PARENTCO

Included Trust Factors on Site

ParentCo provided more trust factors than the other 2 sites being considered in this study given that they had no history to rely on to assist with established trust. However as can be seen from Table 6-2 (ParentCo column ) their site was deficient in several significant trust engendering factors.

Experiential Knowledge

ParentCo provided a reliable, safe, watched over service that is consistent in its existence without the push of selling.

Educational/Technical Knowledge

ParentCo introduced the usage of the Internet through chat rooms. Trust in the company’s ability to undertake online transactions was through a transfer of trust by introducing purchasing online through eBay initially then moving customers to site.
Propensity to Trust

ParentCo developed a long term relationship with customer before moving them to e-commerce. The skeptical customer was given time to build trust before embarking on a transaction.

Strategy of Trust Building

ParentCo developed a long term strategy towards trust building by creating a safe environment for their community that was consistent in its existence and its benevolence. Initially ParentCo did not undertake e-commerce, concentrating on building their clientele. The clientele were of two separate groups. Firstly there were the daily visitors to the site who came to be involved in chat rooms for like minded people. Here, there were multiple threads continually appearing for clients to become involved in ongoing conversations. There was also substantial professional information aimed solely at people who had found themselves in a new situation, often isolated and uninformed. Secondly, there was the group of investors who were to be convinced of the amount of traffic that would visit the site and consequently advertise their products in an area where they were guaranteed their advertisement would be viewed by potential customers.

Stage 2 of the process occurred after 2 years, which was to introduce sales, but not solely through the site but to allow the option of using an established 3rd party, eBay. Once customers were comfortable with the business of ParentCo they were encouraged to purchase directly from their site at a reduced price.

The strategy included a long term plan to allow customers an opportunity to get to know with whom they were dealing and their ability to deliver, before they were required to put their trust in the e-commerce of the company.

6.6.3 CASE 3: GARDENCO

Included Trust Factors on Site

GardenCo was substantially deficient in the recognised trust engendering factors as can be seen from Table 6-2 (GardenCo column). GardenCo’s methods to overcome antecedents of trust appear to have relied on previous good will and personal contact.
**Experiential Knowledge**

Experiential knowledge of the company as a positive aspect was encouraged with images of the stores and the staff. Negative experiences with e-commerce were given no visible attention to alleviate any concerns. Positive long term experiences with the company in areas other than e-commerce expected to translate to trust in their ability to provide e-commerce.

**Educational/Technical Knowledge**

GardenCo offered assistance to current customers through phone enquiries and personal assistance at store.

**Propensity to Trust**

GardenCo provided no method or visual cues to assist a consumer who felt skeptical or concerned with the technology. GardenCo relied on only previous experiences and availability of phone queries.

**Strategy of Trust Building**

GardenCo established itself as a strong community company, providing information, guidance and social activities through its membership. GardenCo had already created an out of store purchasing mentality through its large established mail order clientele before moving to online sales. GardenCo did not adhere to many of the standard practices of online trust building factors as indicated in Table 6-2 (GardenCo column), however still managed to have a customer base that trusted their site enough to make their purchases online.

In discussion with the I.T./Accounts manager of GardenCo “… do not need to worry about problems of the site going down or looking really good, our customer let us know if there is a problem or if they don’t like a feature, they still use the site, they know us well”.

GardenCo did not have the impetus to build an online business to improve their bottom line but considered it as “providing a service to our customers”.

GardenCo relied on its established standing in its community to achieve trust in its ability to provide a trustworthy e-commerce business.
6.7 ANALYSIS AND DISCUSSION

The three cases illustrate the benefits that a thriving special interest community can hold for companies that offer products/services online to such a community. Contrary to guidelines commonly advocated in the literature about incorporating trust engendering features online, we note that in the results for features of trust building listed in Table 6-2, that the online presence of the case organisations were often lacking to the extent of being irresponsible with consumer data. For example, the omission of a privacy policy or lack of usage of data encryption should have been detrimental to the affect on customer trust of the online vendor. Yet, each of the case organisations have not only survived but thrived without the inclusion of some of the most basic features and in each case, the associated special interest community remained loyal in terms of their trust and ongoing support of the business.

This finding thus casts further light on the discourse in the literature surrounding online trust. Literature sources have argued that personal experience and referred trust of friends and family all contribute to an individual’s trust of a particular online vendor (Tan 1999; Tan and Thoen 2001; Gefen and Straub 2004; Verhagen, Meents et al. 2006). It is proposed here that in addition, that the positive experiences arising from an individual’s engagement in a special interest community, have a “rub-off” effect in terms of trusting an online vendor that happens to be associated with such a community. These cases suggest that this could even manifest in a “blind” trust, that is the company is trusted to the extent where complementary control trust features appear to become superficial in terms of their overall effect on trust.

In all cases previously discussed, the companies have guided their clients through to becoming fluent with the business of purchasing online, incrementally. The methodologies adopted vary depending on the clientele. In the case of ParentCo the initial business strategy of building an environment for like minded people to meet and gather, to talk about issues and discuss concerns, before even considering purchasing being available, had the appearance of being a community with the availability of products as a consequence of the community rather than a business strategy.
In all cases the purchasing online appeared to be a part of a push by the customers in that they were requesting product availability online and were feeding back into the company their concerns, reporting breakdowns and suggesting solutions. In many instances the consumers became the driving force behind strategies that were adopted by each of these companies. Whether this occurred by the desires of the consumers or design by the company, it established an ownership of the building of the online business by the consumer community.

BookCo and GardenCo already had an established community of which to source future online clientele. Their agenda was to assist clients to move toward the new technology and to trust their business to establish a safe environment for customers to purchase. Their established name and reputation allowed them to tap into a large resource of customers who had previous positive experiences with the companies, although not necessarily e-commerce. This assisted with any negative antecedents that may have occurred with other companies online. ParentCo did not have this luxury and had to consider other methods. To assist where there may have been any negative experiences a customer may have had with purchasing or delivery ParentCo outsourced these practices until the customer became familiar with their business. While ParentCo were building a rapport with their customers through their community building activities they allowed or even encouraged their customers to purchase through a 3rd party that was well known to the online community. The delivery process was outsourced to another government based institution that engenders its own level of security and trust. Customers were then introduced to purchasing directly online from ParentCo at a reduced rate at a time when they felt comfortable to make the transition. By outsourcing, ParentCo were able to feed off the trust that was available to other established businesses and thereby establish their own level of trust with the clients through transfer.

Once the party trust was established, whether through long term community benevolence from the B&M world or the online world, the need for control trust was not evident. Customers allowed themselves to be open to the perils of e-commerce while at the same time assisting the business to improve their e-commerce strategy. The trust that the customers exhibit in these circumstances is a “blind trust” that has
translated from the trust in the special interests community to trust in the company itself opening the customer to the serious short fallings of the online companies. These findings do not nullify the importance of trust factors that have previously been advocated in the literature. It is argued here that under certain conditions trust can be established without the need to incorporate many of these factors in a company’s online presence. It is also recognised that over time the short fallings of companies to supply all these trust factors can be rectified to improve their position within areas where they are unknown.

Table 6-3 summarises the methods identified in the case studies to gain trust.

<table>
<thead>
<tr>
<th>Identified Methods of Trust Building Through Benevolance and Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building online communities of like minded customers including membership</td>
</tr>
<tr>
<td>Providing Information, guidance and support</td>
</tr>
<tr>
<td>Initiation into technology through pre-knowledge, activities and online discussions.</td>
</tr>
<tr>
<td>Providing other payment methods that are already familiar</td>
</tr>
</tbody>
</table>

Table 6-3: Identified Methods from Case Studies for Trust Engendering in B2C E-Commerce

6.8 SUMMARY

This chapter demonstrates through the observations in case studies, that the same positive trust building aspects of a benevolent community in the B&M world can be contrived in a pure online business. By developing positive antecedents to e-commerce trust, party trust can become strong enough to the near exclusion of control trust as depicted in Tan’s transaction trust model. The benevolent community based business strategy exemplified Tan’s equation of party trust +control trust=transaction trust where party trust was increased to the extent where the required control trust became blind trust (Tan and Thoen 2001). The most important factors to be acknowledged in all cases are that of benevolence and time. Each of these companies has invested time in their customers, building a community of like minded customers, stretching beyond basic membership to providing information, guidance and support for their clients. Customers benefited
from not “dropped in at the deep end” when it came to purchasing online, rather initiated to the technology through their previous knowledge of the company through its community activities, whether they be through catalogues, social activities, club membership, online discussions and information provision. Establishing and nurturing a community provided a loyal, helpful clientele so that when the transition from either B&M or online community to an online business occurred the customers were in place and able to assist in the process.

The case studies in this chapter have identified benevolent and community behaviour that has enhanced trusting intentions towards an e-commerce business. The companies researched offer an explanation as to why a consumer who is aware of the short fallings of an e-commerce company would be willing to purchase from a known B2C e-commerce site knowing there are risks involved. The case studies also show that it is possible to emulate the long term established B&M business trust building process in an online environment in order to gain trust without ever establishing a real world presence. The studies have also discussed methods that B2C e-commerce businesses have used to gain trust in consumers by demonstrating benevolent behaviour to improve users understanding of the technology and processes involved in transacting by taking their current technology knowledge and slowly adding new processes at the pace that is acceptable to the consumer. The knowledge gained by these case studies contribute to answering the initial research question by providing methods to assist a new B2C e-commerce SME develop and maintain consumer trust.

Chapter 7 will look to expand the knowledge gained on acquiring trust and considers the question of how to maintain the trust once it is established. This will be done by further investigating the six aforementioned case studies.
CHAPTER 7
MONITORING TRUST BEYOND THE INITIAL DEVELOPMENT IN B2C E-COMMERCE

This chapter explores tested methods to create and maintain trust and loyalty in B2C e-commerce. In particular it examines small to medium business and their growing position within the market place. It concludes that trust once gained is very fragile requiring constant vigilance which is essential to overcome the risks that will sustain trust and loyalty in clients.

The ability to take advantage of trust generated in both established ‘Bricks and Mortar’ businesses and start-up online companies requires the consistent maintenance if the trust is to be enduring. This chapter uses case studies discussed in Chapter 6 to highlight their ongoing concerns with maintaining trust and the methods they have employed to overcome these threats. This chapter also offers guidelines for retaining long term trust while alerting to possible consequences of intrusions from outside and within.
### 7.1 INTRODUCTION

In comparison to most B&M stores B2C e-commerce offers substantial benefits to consumers in its availability and immediacy, however this is not without added risks not experienced by B&M stores. In removing the physical, human aspect of verification of purchase to a virtual and dehumanised interaction, issues such as security, personal data storage, fulfillment of orders, exchanges and fraud are some of the risks experienced by online trading that must be addressed.

The consumer shares some of these risks but adds to these their own unique set of concerns such as the existence of the company, the dispatching of the purchased product, the received product is not what was expected and that the company will sell on or misuse their private information.

While an e-commerce business must consider each of these risks, including the feasibility, sustainability, reliability and invasion of their business, it must also trade on trust, as without trust there would be no purchases, that is, no business. It is no wonder that trust is said to be the greatest concern of the online business and the online customer, requiring online businesses to make extensive efforts to secure the trust of its prospective customers.

Previous study has attempted to collate all these trust factors from contributing disciplines to give an overview of risk and trust determination factors for the development of B2C e-commerce (Chapter 4). Guidelines have been developed by the OECD [The Guidelines for Consumer Protection in the Context of Electronic Commerce (OECD 1999)] to assist in the creation of an e-commerce application that minimised the risks to consumers. These have also been modified to suit Australian business in the Australian e-commerce Best Practice Model for Business (Department of Treasury 2000). Even with all of these guidelines in place it may still not be enough to overcome the consumer’s perceived risks as there are influences external to the immediate environment that may sway a consumer’s decision to trust.

The guidelines may offer the most scientific or technical of solutions to risk with e-commerce, however trust is not the inevitable outcome. The sociological
consideration to the perception and acceptance of risk is summarised by Short who states that “response to hazards is mediated by social influences transmitted by friends, family, fellow workers and respected public officials” (Short 1984) illustrating that there are other influences on perceived risk outside the realm of the e-commerce developer. Slovic argues, “disagreements about risk should not be expected to evaporate in the presence of evidence” (Slovic 1987). It is feasible however to use the research and guidelines to initiate an environment that embraces procedures to reduce risk and consequentially increase trust.

For the long term, trust must be fed and exercised. While these models set up for best practices in developing e-commerce there is a need to be ever vigilant and recognise what is happening in this vulnerable industry. To gain trust is a slow and steady process that is not to be taken lightly and in order for trust to continue you must never let down the guard. To achieve ongoing trust, consideration must be given to identifying what are the risks and challenges facing the e-commerce business and how to make it a safe and secure environment for customers.

This chapter will consider case studies to increase understanding of the interactions of information technology related innovations and organisational contexts (Cavaye 1995). The case studies will discuss how the identified companies have implemented strategies to induce trust and how they have identified risks that require strategies to overcome threats and risks on an ongoing basis. This expands on Chapter 6 to include all six cases described in Section 6.1.1.

7.2 DEVELOPING TRUST

The e-commerce business is vulnerable at many levels as discussed in Chapter 1. While most of these risks can be overcome by adhering to technical solutions, human computer interaction guidelines, sound business and social practices the consumer must trust in the company and its ability to provide a sound, secure business by demonstrating both best practices and a benevolent behaviour.

Chapter 4 recognises identifiable risks and perceived risks with the company and in the company's ability. The studies have led to a set of factors to be considered when developing an e-commerce B2C application that will help to reduce the risks and
consequently increase trust. This research has been developed from academic studies from varying disciplines. It collates risk and trust factors that assist in the establishment of a B2C e-commerce business that adopts methods and procedures to assist in the formation of a trusting, safe and secure environment.

Much of the previous research tends to stop at this point where establishment of trust is developed and processes are in place to ensure a safe and secure environment. This is exemplified in the research as mentioned in the introduction of this paper, the OECD [OECD, 1999] guidelines and subsequently the Australian e-commerce Best Practice Model for Business E-commerce (Consumer Affairs). E-commerce belongs to a world that is constantly changing at an exponential rate hence, to be involved in e-commerce, it is essential to continue being ever vigilant and up to date with the latest risks.

To develop trust in consumers the previous chapter looked towards the inclusion of community and benevolence. Studies undertaken by Gefen and Straub (Gefen and Straub 2004) demonstrate the importance of social presence to build trust through the perception that the vendor is displaying through the Website a sense of personal, sociable, and sensitive human contact. They assert that these features of human contact and benevolence are expected from companies providing services and products. Trust will follow when a trusted party acts in accordance with the expectations of the trustee. In e-commerce where social presence is at a minimum it becomes even more apparent when expected norms are not forthcoming. McKnight views the need for Web vendors to try to gain a competitive advantage by understanding the individual consumers better just as face-to-face salespeople try to get to know the potential customer so they can relate to them better (McKnight and Chervany 2001).

It may not be the decision of the e-commerce company to not meet with the expectations of the consumer, rather an external influence that changes the course of the regular actions, resulting in an unexpected and possible unwanted outcome. This unexpected outcome may lead to tipping the balance in what is an already fragile relationship of trust, leading to distrust. Robinson claims that distrust usually arises for good reason. Most people are trusting until the other party proves untrustworthy (Robinson 1996). Without the personal intervention that is available
to most other forms of communication and transactions the ability to monitor and explain the situation is drastically reduced. Therefore the negative emotional reaction as described by Robinson, that is resultant from a breach of trust would be unanswered and be strongly associated with distrust.

Distrust although generally considered to be a negative power in a purchasing relationship should not be considered entirely as such in e-commerce. Cofta describes entering into an e-commerce transaction without distrust as entering without vigilance and prudence (Cofta 2006). This behaviour of acting without distrust was demonstrated in previous chapters where participants indicated their intention to embark on purchases in a “blind trust” where vigilance and prudence would have been a safer alternative. However Cofta also maintains that a continuity of trust supports the perception that the 'order of the world' will remain stable so that no undesired discontinuity will get into the way of the “trustee acting for our benefit”. When an intrusion into the order ensues, distrust is able to manifest itself into the minds of the consumer. This distrust may lead to what McKnight et al. describe as distrusting intention where “one is not willing to depend, or intends not to depend, on the other party, with a feeling of relative certainty or confidence” (McKnight and Chervany 2001).

Lewicki and Tomlinson define distrust as the motives intentions and behaviours as sinister and harmful to the others interest and that distrust will increase with the magnitude, frequency and intention of the violation (Lewicki and Tomlinson 2003). They further suggest that efforts to restore the relationship are met with “skepticism and suspicion” resulting in a “self-fulfilling prophecy” of justifying their decision to distrust. Cofta asserts that a lack of trust may make the decision to purchase more difficult while distrust “irrevocably excludes services from being selected at all, low trust can be repaired, distrust is the end of a service” (Cofta 2006).

A breach in expected behaviour leaves the vendor to deal with the loss of trust or the building of distrust. McKnight and Choudhury compare dispositional distrust to dispositional trust and assert that the distrust concepts are better predictors of risky concepts and intentions to use the site (McKnight and Choudhury 2006).
In the evidence of previous research into distrust in e-commerce it is apparent that distrust, while being essential to initial trusting determination, requires strict attention to ensure it is not given an opportunity to rise in the minds of the consumer once trust has been attained. For the SMEs, it is essential that strategies and vigilance are employed to ensure that events leading to distrust do not occur.

The following section considers companies that have survived as online B2C SMEs and have developed methods and strategies to deal with unexpected, though persistent, threats to how they are perceived. Due to its size and the costs involved in 24/7 vigilance the SME finds itself at a disadvantage to larger businesses that are able to ensure the continuing security of its business. Each of the companies has worked through the stage of building trust in order to encourage customers to their online stores. Their experiences will be discussed and guidelines presented to assist with long term maintenance of trust in B2C e-commerce for SMEs. The case profiles have been described in Section 6.1.1.

7.3 CASE STUDIES

As devastating as it was, the “dot-com crash of 2002” produced a host of survivors with strong business plans and an astute eye on what was happening in the industry. In adhering to their conventional strategies they may not have experienced the boom that many volatile dot-com businesses enjoyed, but traded it for a slow steady growth phase, giving them time to evaluate and learn from their own and other’s online business experiences. In Australia, the post dot-com e-commerce survivors are now able to benefit from a substantial steady growth.

The case studies to be discussed have all survived the dot-com crash and have maintained customer loyalty and trust over the subsequent years. The sustaining of consumer trust has not been simply a case of ‘resting on their laurels’ once the initial trust has been established, rather constant vigilance and continually keeping on track of current practices or mis-practices by unscrupulous external influences. Chapter 6 discussed the methods used by some of these companies to gain their clients trust, this section will now consider how their trust was maintained over time and what techniques were used to ensure their trust.
The case studies were conducted as per the method described in Chapter 6 (Section 6.1). Six companies were studied, data that was collected and iteratively analysed from multiple sources including initial email contact with formal questions, personal informal interviews, inspection of Internet presence and offered company documentation.

As per the 3 case studies in Chapter 6 the interviewees in all cases were CEO’s or Senior Managers. Each of the managers interviewed were involved in the decision making process of the companies online strategies and the follow through with the implementation of these strategies. For anonymity the names BookCo, ParentCo and GardenCo (all pseudonyms) will continue to be used and FlowerCo, HealthCo and ComputerCo will be adopted for the 3 additional cases.

In each case the focus of the study related to the strategies employed by the case organisations to engender trust online, the problems they had met in maintaining trust and the strategies they had employed to overcome distrust creating situations. This included an examination of their E-commerce Website, and from the interview data, what specific management strategy was followed to foster and maintain trust online. A comparison of trust engendering behaviours pertaining to their online presences is detailed below. In each case, insights were gained into each organisation’s overall business strategy, supporting IT infrastructure, approach to consumer support, and aspects of its trust maintaining strategies (Benbasat, Goldstein et al. 1987; Eisenhardt 1989; Galliers 1991).

7.4 INTERVIEWS

Discussions were held with the CEOs, owners and managers of each of the businesses described in Chapter 6, the information gathered being experiential and in most parts qualitative. A variety of Information Systems data gathering techniques were used as recommended by Darke (Darke et al. 1989) including an initial open-ended discussion with the owner, a visit to the offices and further discussions on issues raised during the initial contact, e-mail exchanges and inspection of the ParentCo Website. The data were analysed by iterative tabulation against a range of theoretical constructs (OECD 1999; Farrell, Scheepers et al.
2002). This process yielded a number of perspectives on the case, such as the analysis that follows below and in previous the study of Chapter 6. To assess internal validity (Yin 1989; Yin 2003), there were email follow-ups to ensure the accuracy of the information that was being delivered.

7.5 METHODS OF TRUST DEVELOPMENT

Chapter 6 discussed the methods of overcoming trust concerns from online customers for BookCo, ParentCo and GardenCo (Farrell and Scheepers 2008). The following will briefly outline the methods of overcoming areas of concern with trust with each of the companies to demonstrate their trust establishment techniques. Factors have been grouped, as many solutions overlap in the areas or are related in their application. The analysis dissected and arrayed the evidence from the 6 evaluations within each group of factors in order to determine cross-case synthesis and uniquely identifiable features (Yin 2003). To demonstrate the findings of the studies the compliance to each group of factors will be discussed in relation to each company. The trust factors discussed below are those which have been derived from previous research from varying disciplines in Chapters 4 and 5.

7.5.1 USABILITY

Usability to be discussed in this section includes store enjoyment, navigation, initial perceived site quality, ease of use, professionalism, perceived size, tailoring, testimonials and customer interaction.

ParentCo:
Pre-developed templates were modified to suit the company needs. These templates were previously tried and tested and gave a professional look and feel to the site while allowing for personlisation that represents the image of the company. The site welcomes all new surfers and invites them to be members. Members create their own user name, include photos and personal signatures. The discussion board allows members to be recognised and involved in discussions with others who are at a similar stage in their lives.
The site also provides substantial free information to parents including financial, legal, childhood, pregnancy, career, health and education as well as links to other helpful sites. This information makes a one stop shop for parents. Testimonials are used on the online store for recommendations of product. These are given by fellow members adding to the personalisation of the purchase.

**FlowerCo:**
Testimonials were posted on the checkout regarding the service and quality of the product received. These testimonials were also presented through a link prominently displayed on the home page of the Web site. Lists of suburbs for delivery to assists in reducing errors and assists in choice (Schneiderman’s guidelines for usability (Schneiderman 1998)). The FlowerCo site creates short cuts for customers wanting to purchase for varying occasions such as weddings, mothers day etc. allowing for quick selection and reducing errors and assisting with choice (Schneiderman 1998). Sitemap is included to assist in navigation (Pilgrim, Gitte et al. 2004).

To encourage users to register and not drop out at form filling stage FlowerCo reduced the amount of data that was required for registering to just what was needed without superfluous information. This limited the purchase order form to only name, contact number and email, the delivery details and payment were completed at the next stages.
FlowerCo had researched other online florists worldwide to ensure a professional look and feel that reflected the company’s image. Administration site is kept user friendly to ensure changes are made routinely and frequently. Frequent updates are to assure the customer that this is not an abandoned site.

**GardenCo:**
GardenCo has club membership offering discounts to members to encourage the move from mail order to online purchasing.
GardenCo has not employed a shopping cart, rather has presented the company’s established recognisable catalogue for viewing and then a form to be filled with all the purchases required. While this is a failure for new customers, it allows for a transferral of knowledge for customers who are moving from mail order to an online
order. The order form basically works the same as a shopping cart except that the complete current order is visible when adding items. The feedback on the catalogue purchasing approach has been polar with customers stating that they either love it or hate it as it does not follow the standard shopping cart look and feel or that it does reflect a system for which they are accustomed. To assist in the form filling some fields are automatically filled to reduce the occurrence of errors (Gao 2005). Administration has been reduced substantially as GardenCo found that originally they asked too many questions at the outset such as which state they were to deliver to, this was necessary due to quarantine restrictions, did they hold membership Yes/No, if they were members what was their membership number, informing customers of availability of products due to stock being seasonal, which catalogue they were ordering from due to special prices offered depending on the catalogue the customer was ordering from. This met with customer complaints, therefore, in response GardenCo reduced initial questions and dispersed these necessary questions over the purchasing process.

HealthCo:
HealthCo provides a help centre that includes information on ‘how to buy’, ‘secure shopping’, ‘delivery and shipping’, ‘tracking your order’, ‘payment options’, ‘supply of product’, ‘returns policy’ and ‘pricing’. Each section is written in plain English. ‘Tracking your order’ allows for linking to individual delivery updates through a login section. The ‘how to buy’ section assists with navigation on the site to lessen the incidence of error due to inadequate knowledge.
Membership allows for less data entry when purchasing and the ability to enter an online discussion forum. These discussion pages encourage personalisation in recognising the individual and encouraging involvement in the community.
Celebrities offer stories of their own personal health experiences. Medical definitions and procedures are offered in a medical library. These facilities improve store enjoyment and offer other facilities to potential customers.
To reduce cognitive load inches and centimetre measurements are added for older people in response to enquiries from customers (Schneiderman 1998).
Initial release of the HealthCo was unsuccessful given that the first site developer they employed was overpriced and not competent developing in frames that were
unacceptable to the bank payment system. From their experience HealthCo now recommend that extensive research is done before employing a site builder to reduce the amateurish appearance in both site quality and technical capabilities.

**ComputerCo:**

Customers are required to become registered users so as to allow them access to tracking and reduced data entry when ordering goods.

Review of products is supplied to assist in customer selection. Customers are able to add their own reviews. These are vetted to ensure that the reviews are legitimate.

**BookCo**

BookCo offered information regarding upcoming book events at their stores. This reflected their community based presence and the image for which they are most widely acknowledged.

The navigation and usability were very poor offering little to assist the consumer in completing a singular safe transaction.

### 7.5.2 TECHNICAL REQUIREMENTS

Discussion of technical requirements in this section will include fulfilment management (technical), fulfilment management (delivery), encryption and settlement performance.

**ParentCo**

Discussions were held with Australia Post and a delivery plan was put into operation to ensure fulfillment management.

Each order is vetted and followed through each stage, if the order looks unusual the customer can be contacted to ensure they are valid and that they match exactly the order that the consumer believes they have made.

Encryption and SSL are used to ensure the protection of the consumer’s credit card details.
**FlowerCo**

On site SSL is used. A description of the 128 bit encryption is prominently placed on the home page.

The process for the handling of credit card details is the deletion of 8 characters from credit card details once a week and all details shredded once per month. This is also stated on the home page under the description of the ‘security response’.

If a customer’s credit card is declined an email is sent, no phone contact is made. This procedure is to reduce the customer concerns of personal information being used irregularly and adhering to the usage of the Internet for the transaction.

Customers are however encouraged to phone the store should they have any concerns.

A hybrid approach to ordering online can be undertaken by alternative methods of payment being provided through fax and phone once the order has been placed online, should the customer not feel confident in using the SSL provided.

**GardenCo**

GardenCo allows customer to continue making payments as they have previously done when they were using mail order through phone, fax or bpay¹. This allows customers to move gradually to the new technology, particularly while GardenCo ensure they have sufficient security in place.

GardenCo hosts their own SSL, however the rest of the site is hosted by an ISP. This is done to ensure the safety of the customer’s personal details while allowing the responsibility of the stability of the hosted site to the ISP.

**HealthCo**

To ensure customers are confident in their delivery of their product, delivery is outsourced to Australia post using e-parcel. In order to assist with the number of enquiries from customers as to the status of their parcels, customers are now issued with an assignment number and can track their parcels themselves through Australia Post. This 3rd party outsourcing increases confidence in the consumer to receive their delivery and reduces enquiries.

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¹ **BPAY** is a bill payment service that enables payment of bills through phone and Internet.
The site provides details of the level of encryption used, the SSL and the privacy policy details.

To protect both the customers and the company HealthCo limits transactions to $1000. For customers with personal card limits of $500 a common level assigned to Internet credit cards, HealthCo can allow more than one transaction. For large orders, in particular from workplaces, company cheques are used to overcome issues with transaction limits.

Each transaction is checked individually and manually imported into quick book. By keeping their own records they can ensure there is no 3rd party obtaining access to the customer's information. HealthCo include on their privacy policy that no details are passed on to a 3rd party.

In the initial stages the site went down 3 times in 2 years. Now HealthCo check the site 7 days a week to ensure no down time which may cause lack of confidence by the customer.

Some fraud has occurred in the past generally from South America, Eastern Europe, Nigeria and one incident from New Zealand. Sales have been limited to US, Canada UK and New Zealand HealthCo recognises the importance of checking every order for delivery and card address details before continuing with orders. HealthCo has previously required and received assistance from the National Australia Bank fraud squad.

Payment security is assured by payment details being separated from the order and passed directly to the customers financial institution via Camtech Payment Gateway.

Due to the local cost and the quality of hosting e-commerce sites in Australia, a US host is used for site storage. A second site is hosted in Australia for backup should there be a serious issue arise with the US host. HealthCo were also under the opinion that the US are keeping up with new technologies leaving the Australian server providers behind.

HealthCo has 2 pipelines to US, one through Singapore the other through the Pacific with a backup kept in Australia.
**ComputerCo**

All purchase requests now run through the backend of ComputerCo and each of the transactions is checked before being processed. Initially there were a large number of “bogus shoppers”, this has been reduced substantially by the requirement of user registration.

Initially requests for purchases from overseas were seen as exciting business opportunities, after fraudulent behaviour in the early days of $2500 from an overseas customer it became apparent that overseas requests particularly from Indonesia and Nigeria were to be treated with extreme caution. Eventually this led to the exclusion of the overseas market altogether.

Where a customer requests an item over $150 the customer is phoned to verify the order. This is to protect both the company and the customer. This is met with mixed reactions from the customers although most appreciate that a check is being done.

Initially ComputerCo believed that the 3 digit verification number on the reverse side of the credit card could be used to verify a credit card however they found that customers do not like to give over 3 digit number and sales were lost.

All Post Office Box addresses must be verified or the transaction will not proceed and for regular posting addresses a physical address check is done using phone directory and/or google.

The team involved in the online purchases at ComputerCo attend sessions held by their bank on how to recognise fraudulent activity as it takes 2-3 months for fraudulent card details to come through.

ComputerCo also offers the option of faxing payment for those who feel uncomfortable with online payments.

**BookCo**

BookCo did not offer a secure online payment system. Payments went through a form that was not encrypted and did not offer SSL.

Delivery was through Australia Post, the same process as any order taken over the phone or faxed.

Only small transactions were accommodated and BookCo had no fraudulent behaviour to report.
7.5.3 SOCIAL, PSYCHOLOGICAL AND PERCEIVED TRUST FACTORS

The discussion in this section includes 3rd party verification, links to other sites, brand, reputation, transfer of trust, reputation building, privacy policy, information content, perceived usefulness, propensity to trust, previous experiential knowledge and previous technical knowledge.

**ParentCo**

ParentCo is a portal to large companies that are well reputed and have built trust reputations in the B&M world. Although there is no usage of 3rd party verification such as veri-sign that is often used for start up companies, being a portal for such companies as Heinze, Lego and Nestle gives credibility to the site.

The site merges the social environment, e-commerce store and online information that allows for a transfer of trust from developing trust in personal discussion boards, to requiring trust on the shopping site.

Privacy policy is included, to ensure the customers of the data storage policy and that private, personal or secure information will not be sold or given to any 3rd party.

The site offers more than just a store but has value added for customers offering a social and informational forum.

Customers are eased into e-commerce by being a social member and receiving information that is useful to this stage of life. It also offers alternative methods of purchasing goods through eBay allowing trust to build with their ability to fulfill orders and consequently create a secure e-commerce environment.

Members bring with them a variety of previous experiences with technology and e-commerce that may influence their initial response to trusting the site.

Personalising creates a new experience for the individual, allowing an opportunity to create new impressions where negative ones may have existed.

**FlowerCo**

FlowerCo have an established business in a prominent position. This is displayed on their site to show their B&M stability.

Privacy Policy and sufficient information is supplied to both educate and assure customers of the levels of security and methods used for distribution.
Further information is supplied to customers regarding how to make arrangements, what flowers are in season and which flowers are perfumed. This extended informational content gives further reasons for potential customers to visit the site and become familiar with its layout and stability.

**GardenCo**

To personalise the e-commerce side of the business and to extend the good reputation and benevolence of GardenCo, the names and faces of gardening staff as well as photos of their B&M sites with staff and customers browsing are included on the site.

90% of customers are members hence GardenCo are dealing with pre established trust. When bugs occurred in software and the system went down customers were quick to inform GardenCo and did not just go away. GardenCo is well renowned and promotes it benevolent behaviour both in its store and its Web site. Some of the methods they employ include:

- Members receive reduced prices when ordering online
- Free seed is offered for Web orders which boosted sales
- Advertised in catalogues
- Adding a FAQ page that invites members to contribute
- All users received member prices to promote initial sales
- Invitation to join occurs during payment process.
- Constantly newly added articles to encourage users to visit regularly

**HealthCo**

HealthCo obtained a press release of their business after having been in the online business for approximately a year. Sales improved substantially with the press release as well as membership. The news release provided validation from a 3rd party impartial view.

Online user population statistics are constantly available on discussion forum pages with the number of users and guests currently online. This shows the site is still alive with a current population accessing the site rather than a deserted site.

Symbols of 3rd party verification for business practices and for security are included to assist confidence with the consumer as well as established logos with links to their sites.
To assist with confidence in the company HONcode and Australian Fitness Network logos and links to their sites are used (Figure 7-1). HONcode approval is given where HONcode principles of the ‘Health on the Net Foundation are adhered. HON is a non-profit organisation whose mission is to guide non-medical users and Medical Practitioners to useful and reliable medical and health information. Approval was received in October 2002. 3rd party verification is also achieved through demonstrating their Membership of the Australian Fitness Network by including the logo. To assist with confidence in the company’s ability to deliver secure purchasing InstantSSL, CamTech and acceptable credit cards logos are included. These logos are also included to increase trust through 3rd party verification.

<table>
<thead>
<tr>
<th>Health On Net Foundation</th>
<th>Members of the Australian Fitness Network</th>
<th>Instant SSL</th>
<th>CamTech credit Card Processing</th>
<th>Credit Cards Accepted</th>
</tr>
</thead>
</table>

Figure 7-1: Logos Used on HealthCo to Assist with 3rd Party Validation

Customers who are apprehensive are given guidance through phone and email enquiries and newsletter tips, such as a limited credit card for online usage.

Providing contact information to customers is essential for the SME. Customers of HealthCo ring 24/7 expecting personal service outside of normal working hours and cannot understand that even though the site is available around the clock this does not apply due to the limited number of staff. HealthCo have recognised the need to be upfront with their phone availability on the contact page.
ComputerCo

ComputerCo encourages trust in their company by using established courier services used for delivery where they have previously established their competence and efficiency.

To encourage customers to purchase online rather than visiting the store certain items are given free freight.

Customers are encouraged to complete reviews of products, this brings them back to the site after purchasing and also creates a reference for when they are intending to purchase their next product.

With a new login system customer can track their orders using OS commerce that lists goods as pending, shipping and delivering. Customers are able to be confident of the position of their order at any stage. Emails are also sent with the orders to update customers as to the progress of the order.

From a personal perspective on the email sent with the order the staff member who is responsible for the email includes their individual extension phone number to personalise the interaction.

BookCo

BookCo are renowned for their benevolent community behaviour which is reflected on their Web site. Even though they do not offer technical security they offer the knowledge of dealing with people who are known and trusted.

Invitations to reading nights, special presentations and other events place the Web site in a strong position of offering other significant interests to potential customer, either online or in the store.

7.6 SAFEGUARDING TRUST

The cases discussed have been developed to create a personal, trusting environment where members are individuals, navigation is easy and technical solutions now exist. While this creates an environment that is as risk free as possible, experience has found that risk avoidance is an ongoing process. In discussion with the CEOs the following risks and counter actions were essential to keep the safe environment that has been established. The following subsections
offer guidelines to assist SME recognise risk issues and discusses the experiences of the individual cases and their recommendations to overcome these risks. The guidelines are summarised in Section 7.7.

7.6.1 DEVELOPING A STABLE, PROFESSIONAL SITE

Risks with employing professionals in site development
HealthCo experienced an unsuccessful first release of their online business due to an incompetent, overpriced developer who did not have an understanding of the marketplace.

HealthCo now recommend the following when selecting a Web developer:
The Internet has its own language specific to computers and the WWW. New users to e-commerce need to be brought in gradually in a language they can understand. Hence it is essential to select a developer with good communication and not jargon speakers, who will test your site with real users.
Price was not a reflection of the service that was provided, reasonably priced developers are as likely to provide a good service as those who are extremely overpriced. One method of finding the right developer is to find Web sites that you feel express the image you want to present and approach the developer.
Only being able to code a Web site is not sufficient, a working knowledge of marketing and search engine optimisation, are also essential components of the e-commerce developers abilities. This may require the employment of an e-commerce team.

Risks with employing professionals with server storage
Initially, FlowerCo selected a host for their site assuming they would all offer basically the same services. This was not the case after daily problems being reported by customers. The host proportioned the blame on the software that was used on the site. FlowerCo lost a substantial number of orders from customers who did not feel they had met with a standard of reliable service.

Counter Action
A reliable host was selected supplying a 24/7 reply with mobile access for emergencies. This host could demonstrate the reliability of their service through
logs and client recommendations. This service has not failed in the 2 years it has been active.

FlowerCo felt that their initial haste in employing a server created a serious problem for the initial users moving to online purchasing. They advocate now that by not recognising the importance of the partnership with the host company they had damaged their initial move online and that research into a well reputed host provider is essential before startup.

7.6.2 IT IS ESSENTIAL TO KEEP A WATCH ON DISCUSSION BOARDS

Risks with the discussion board
Privacy: It was reported on a discussion board that ParentCo gave out personal details to list brokers. The reaction from members was quite vocal as they felt they had been betrayed. The fact was that when list brokers who requested information to be sent out to the members did so through ParentCo who themselves, forwarded the information to the members only when they thought it could be of benefit to the members. At no time was their personal data sold or given to another organisation. This misrepresentation and subsequent backlash was caused firstly by the list broker who did not differentiate between those who sold them data and those who allowed for information to reach their clients without passing out personal details. Secondly by the member who went straight to the discussion board without checking with ParentCo.

The Competition: Again using the threat of personal information given out, a “new” member placed on the discussion board a message regarding having received a call from a company claiming they had obtained their personal information from ParentCo. When traced it was found that the discussion board message came from the Internet protocol address (IP address) of a competitor.

Prowlers: ParentCo has been established for the benefit of parents, in the main the clients are mothers. At times infiltration can occur where a person with wrong intentions can assume the persona of a typical ParentCo member in order to gain the access to and trust of other members.
Spin offs: A member who was offered a free month of a discussion board advertised on ParentCo for others to come join their new site. This did attract a small number of members to the new site from ParentCo. While this may be considered as a concern of loss of business this is not the major concern. Given that it is seen as a spin off from ParentCo, unethical or insecure behaviour on the spin off could reflect on ParentCo. This was the case given that the IP offering the free discussion board was an overseas company in Russia that did not identify itself. This allowed the IP to collect information in regards to each of the users attached to this discussion board.

Behavioural Vulnerabilities: According to the CEO of ParentCo, given the nature of many of the members it is not unusual for behavioural problems caused by sleep deprivation, variable hormones and stress creating volatile discussions that require intermediary intervention. HealthCo also found that they need to keep an eye on unsavory behaviour by participants in the discussion room.

**Counter Action**

ParentCo and HealthCo encourage their long serving members to keep an eye on the discussion board, watching for any derogatory comments or suspicious behaviour. Given the large number of members and the demographics it is possible to cover a 24/7 watch on the conversations that are occurring. These members are known as moderators. The intervention of a moderator shows that there is a constant vigilance on the site which increases trust in the company’s ability to protect the members as individuals. ParentCo have future plans to include reward points towards purchases for monitoring of the discussion board.

HealthCo also have a language checker running in the background to reduce offensive behaviour.

7.6.3 KEEP UP THE SECURITY, KNOW WHAT IS HAPPENING BEFORE THE HACKING OCCURS

**Risks with hackers**

Hackers: From the beginning hackers have been at the doors, often just to be a nuisance or to test their skills as a hacker. 24/7 vigilance is essential to ensure the site is not taken down, script injection or denial of service does not occur.
ParentCo used PHP-BB for their discussion board, an integral part of their business. PHP-BB is an open source high powered, fully scalable, and highly customisable bulletin board package that is used in many of the online businesses both in Australia and worldwide. Early in 2005, rumours started on the hackers sites regarding the vulnerability of PHP-BB, eventually leading to many PHP-BB sites being brought down in May 2005. This led to large financial losses and loss of trust in the company’s ability to deal with the security side of their business. ParentCo were aware of the rumours that had been circulating and migrated to VBulletin with 3 all night vigils to monitor vulnerability and for the change over to occur so that there would be no down time.

**Counter Action**

ParentCo trawls the hackers pages looking for new methods to hack sites and rumours that may indicate vulnerabilities of existing sites and packages. This is a continuous exercise as most software development companies react to hacks rather than keeping on top of the latest movements. ParentCo recognises the need to be ever vigilant with hackers.

**7.6.4 MONITOR ALL ORDERS BEFORE SUBMITTING FOR PAYMENT AND PROCESSING**

**Risks with Orders**

Invalid purchases: On viewing current orders it was apparent that there were some orders that were invalid. These fell into 2 categories, firstly the nuisance orders that had nonsensical information and details, secondly, generally overseas orders, with different postal address, shipping address, billing address and billing name on the single order.

**Counter Action:**

Every order is checked for validity. Addresses, names and credit cards are individually checked for authenticity. ParentCo and ComputerCo do not use a merchant account but rather deal with all stages of the sales on their SSL. If a merchant account were to be used, the company would be initially charged for any claims made by the card owner and given that they do not have a signed receipt
they would find it difficult to reclaim any monies that have been charged. By taking control of their own sales they are able to view all orders before fulfillment.

7.6.5 DETECTING FRAUDULENT BEHAVIOUR

Risks of fraud
Due to the nature of the product sold through ComputerCo being high priced and easily sold on without traceability, ComputerCo has had to be extremely vigilant of the sales that pass through their online store. Experience has shown that there are patterns of behaviour of the fraudulent customer. While this situation is the reverse of previous situations where it is the business that is vulnerable, any fraudulent behaviour with the company changes the modus operandi of the store and can therefore cause suspicion by the customer. By ensuring the company reduces the opportunities of fraudulent behaviour they are able to offer an interface with the customers that is stable, consistent and not demonstrating the appearance of suspicion but rather benevolence.

Counter Action
From previous experience ComputerCo and HealthCo have developed a list of behaviours that they recognise as indicators for concern with potential fraud. Establishing these checks into the set procedure of the company assists in recognising concerns without having to change tactics when issues arise.

ComputerCo:

- Customer who orders and pays for goods over the phone and then comes in to collect
- Several card numbers provided to split the transaction
- Goods normally not provided by the business will be requested
- Making a large order out of the blue where no long term homework on the product or company is evident
- Pressure to pick up the goods as soon as possible particularly close to closing time
• ComputerCo also recognised a pattern with customers to build up a reputation by starting with small honest transactions and then attempting to make a large fraudulent transaction.

HealthCo adds to this list with:

• Use free mail service such as yahoo
• Do not include phone number
• Order in large quantities items that are generally single use and are of high value

If the company is still concerned about the order they are entitled by the privacy laws to phone the customer personally once to validate the use of their credit card.

HealthCo insist on the inclusion of the 3 digits for verification on the back of card although this proved to be a deterrent to genuine customers in other cases.

7.6.6 REDUCE SERVER VULNERABILITY

Risks with Server

Going offshore: Keeping a Web application on one server leaves it open to the vulnerabilities of the Internet provider. It is exceptionally expensive to host a site as large and as frequently accessed as both ParentCo and HealthCo. Reducing vulnerability of a single server by hosting on multiple servers is even more financially prohibitive in Australian SMEs.

Counter Action

The financial restrictions are not relevant to the United States of America (USA) where it is possible to divide the application into 3 applications each in different areas of the USA at a cost far less than the single server Internet provider in Australia. A full copy of the application is kept on a server as backup in the home office. This reduces the vulnerability of the whole application, given that only one part would be affected at any time and can be immediately backed up and redirected at another site. However, the physical Pacific connection becomes the vulnerable component, given that many large Australian e-businesses use USA Internet providers.
7.6.7 CONTINUE TO DEVELOP NEW WAYS TO BUILD AND ENCOURAGE TRUST

Risk with not Diversifying to Encourage Trust

Although ParentCo has been around for 6 years, customers are still wary of entering their credit card details on their site. The site has SSL and encryption. Data is securely stored. All orders are checked before delivery.

Counter Action

One of the methods of developing trust in their e-commerce side of their site is by having an eBay store. Customers can bid on products that are also available on ParentCo for purchase. eBay customers are informed of the availability of products on ParentCo. This not only brings customers but also new members to the portal, a positive business decision.

The latest initiative is to use barcoded tags in Australia Post to purchase products from ParentCo. Members who are not at first comfortable with using the ParentCo site for ordering can go to any one of over 9,000 post offices in Australia. Here they can collect the product tag for any item they have seen on ParentCo, order and pay at the post office. This has given a new level to the Internet store with an online product listing and information with the advantages of a B&M store local to the majority of Australian customers. Customers still have all the advantages of membership of ParentCo, awareness of available products and a secure purchasing that initiates their business relationship with ParentCo.

The association with Australia Post also gives credibility to the ParentCo site and extends to the ParentCo online store.

ParentCo and HealthCo are members of an Australia wide e-commerce group that meets every few months to discuss issues with future trends, security, business issues and any other relevant issues to Internet business. One of the future concerns held by this group is terrorism. The Internet is recognised as being vulnerable of terrorist attacks. In particular the physical connection from Australia to the USA leaves Australian business exceptionally vulnerable. The Australian e-commerce group is developing an Australia wide plan to cope with any disruption due to terrorist activity.
7.7 DISCUSSION

From the meetings held with each of these B2C e-commerce SMEs it is apparent that accordance with guidelines to develop a secure and safe site is essential. However, equally important is the ongoing monitoring and maintenance of risks. It has been possible from the discussions held to derive guidelines to assist in the ongoing battle of risk reduction in B2C e-commerce. These guidelines (Table 7-1) establish a basis for continuance of reduced risk in a vulnerable environment.

The resultant guidelines are listed in Table 7-1:

<table>
<thead>
<tr>
<th>Guidelines for New B2C E-Commerce SMEs to Assist In Reducing Security and Business Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing a stable, professional site by spending time selecting the right people to build your business</td>
</tr>
<tr>
<td>Keep a watch on your companies discussion boards 24/7</td>
</tr>
<tr>
<td>Watch for any disturbances to satisfaction with the business, security, trust and privacy</td>
</tr>
<tr>
<td>Watch for infiltration by undesirables</td>
</tr>
<tr>
<td>Keep up the security by knowing what’s happening before the hacking occurs</td>
</tr>
<tr>
<td>Trawl the hackers sites, watching for any discussions that may affect your business, regarding software vulnerabilities, security issues</td>
</tr>
<tr>
<td>Monitor all orders before submitting for payment and processing</td>
</tr>
<tr>
<td>Check for validity of the orders and credit card details</td>
</tr>
<tr>
<td>Ensure there is a match between the credit card holder and the purchaser</td>
</tr>
<tr>
<td>Reduce server vulnerability</td>
</tr>
<tr>
<td>Do not rely on one Internet Service Provider to host the site</td>
</tr>
<tr>
<td>Create contingency plans should a site go down.</td>
</tr>
<tr>
<td>Continue to develop new ways to build and encourage trust</td>
</tr>
<tr>
<td>Look to other ways to offer product rather than on your own Website</td>
</tr>
<tr>
<td>Move people gently to the Website through other avenues</td>
</tr>
</tbody>
</table>

Table 7.1: Guidelines to Assist in Reducing Risk
Future start up online B2C e-commerce companies may benefit from the experience of these SMEs. Following these guidelines will help to reduce risk to the e-commerce site, and hence either increase the confidence and trust of the consumers or, at the very least, not allow for a reduction.

7.8 SUMMARY

Research into trust and hence risk in B2C e-commerce, have in the past considered the development of applications that consider the consumers needs in building trust. Chapter 7 has identified guidelines to assist new B2C SMEs to establish and maintain trust. The guidelines were derived from the analysis of case studies and represent the results of the experiences of companies that have either made the transition from the B&M world or have set up as online stores only. The experiences of these companies demonstrate that for business survival constant vigilance is essential. A business that is open 24/7 must be monitored accordingly and not just responding to security breaches. Online businesses must keep up to date with what is happening not only in their own neighbourhood but also in the global neighbourhood, requiring the use of the Internet as a tool to access the thoughts and behaviours of hackers on the net. It is apparent from the ongoing experiences of the cases studied that the question of trust has not yet been answered as new technologies and threats tend to appear daily. The evolving nature of e-commerce requires that the body of knowledge of threats and risks should be constantly added to in order to extend the guidelines to assist new SMEs.
CHAPTER 8
DISCUSSION AND CONCLUSION

This chapter will firstly summarise the stages and corresponding results of the research undertaken. The contribution of this work to research and society will then be discussed. This will be followed by the limitations of the study, ethical issues, further research and conclusions.
8.1 RECAPITULATION OF PREVIOUS CHAPTERS

Chapter 1 introduced the concept of consumer trust for Business to Consumer (B2C) e-commerce small to medium enterprises (SME) as detrimental to its predicted growth. It was discussed that e-commerce offers an environment different to that of its ‘bricks and mortar’ (B&M) counterpart in relation to trust in transaction negotiation, technical capabilities, delivery, human relations and privacy. The scope of this study was limited to small to medium enterprises who do not share the same infrastructure or financial backing as a large business. The service of electronic commerce considered in this research is limited exclusively to Internet commerce and only inclusive of business to consumer transactions where the consumer is the end recipient and personal financier of the transaction. The objectives of this research were stated to be (1) to develop an understanding of the position of the consumer in Australian B2C e-commerce SMEs in relation to their knowledge and opinions of the relevance and necessity of recognised e-commerce trust mechanisms; (2) to merge and validate the unified previous discipline specific B2C e-commerce SME research; (3) to build methodological knowledge to assist B2C e-commerce SMEs to develop and maintain consumer trust.

Chapter 2 argued the relevant methodology to be Human Computer Interaction given its multi-disciplinary approach to research. HCI methods such as online surveys, laboratory testing and focus groups are employed. It also argued that the multi-disciplinary, continually changing nature of e-commerce requires methodologies such as the usage of models, multi-disciplinary reviews of literature and case studies associated with Information Systems to also be employed. Chapter 2 also outlined the progression of study.
Chapter 3 considered the definitions of trust by undertaking a literature review of the concepts involved in trust. The literature review revealed that there is no singular accepted definition of trust and the varied definitions are relative to specific disciplines. The definition of trust has been long argued between the psychologists, sociologist and philosophers, however e-commerce added extra dimensions to the involved disciplines by introducing virtual merchants and new technologies. To allow for consistency in the research a working definition for B2C e-commerce was described in order to realise the objectives. This chapter also referenced a previous survey of prospective consumers to determine their knowledge and ability with B2C e-commerce in an unknown SME (Farrell, Leung et al. 2000). Previous research in B2C e-commerce was US/European based, hence the impetus for the study was to establish the situation within an Australian context. It was found that consumers were not aware of the established identifiable trust factors included on the sites. The study was repeated with the ‘net-generation’ who had been raised on the Internet as a research tool and found that this group of subjects did not have a greater knowledge of e-commerce security or identifiable trust factors than other generations and were vulnerable to becoming victims of e-commerce crimes and consequently build distrust in the technology. While this study offered an understanding of the most prevalent of trust mechanisms, it was recognised by the author that a deeper understanding of all issues relating to e-commerce trust building and maintaining required investigation in order to realise the objectives.

Chapter 4 undertook a rigorous literature review of the current models within their relevant disciplines. This research reflected the findings in Chapter 3 in that the current models were related to the specific disciplines and views held by the researcher. The researched trust models were merged and the repetition and redundancies of e-commerce trust factors removed to develop a non specific disciplinary model of trust defined as the Multi-Disciplinary Model of Trust. This
model recognised the need for the unbundling of the trust concept into trust with the consumer and trust with the consumer’s ability to provide a safe, secure and successful e-commerce transaction and fulfillment. The model also differentiated between those trust factors that were identifiable and those which were perceived by the consumer. The consumer’s technical and experiential knowledge were distinguished as antecedents to the trust relationship.

In Chapter 5, the above mentioned factors were then tested as unified affecters of e-commerce trust incorporating the varying e-commerce disciplines. The results of this test validated many of the proposed concepts and correlations of factors. The results also prioritised the identified trust factors from the consumer’s perspective when they were presented in their entirety. It was also determined that there was a lack of consumer understanding of essential trust factors and that there was a willingness to purchase from a site which displayed benevolent community attributes but was considered not to offer secure transactions. These issues raise the concern that consumers are leaving themselves open to security risks and fraud which will only furthers the ongoing trust concerns by leading to distrust.

Chapter 6 addressed two of the previously raised issues in Chapter 5 where the consumer perspective testing of the multi-disciplinary model of trust highlighted concerns and anomalies in the understanding of the previously researched discipline specific trust factors. Chapter 6 undertook case studies with companies that were within the original scope of the research and as a further requirement they offered the added features of benevolence and community to their external appearance. The 3 selected case studies in Chapter 6 were a subset of the 6 introduced case studies, offering the further criterion of previous establishment of community trust reducing the requirement of technical infrastructure, extending the understanding of the party trust/control trust equation of Tan and Thoen (Tan and Thoen 2001). The study discussed methods the companies had employed to overcome
antecedents of trust such as lack of technical knowledge and experiential knowledge. A strategic business plan was identified which allowed a start up online business, to benefit from similar community trust to that of the companies that had previously established B&M trust, by investing time in developing an online community before moving to sales. The strategies of these companies explained the anomaly of consumer trust existing where there was only trust in the vendor and not the vendor’s ability to create a safe transaction and the concern with the absence of technology education identified in the testing of the multi-disciplinary model of trust. The strategies also ensure a better understanding of the company thereby improving the trust with the company and overcoming antecedents of trust as discussed in the Multi-Disciplinary Model of Trust.

Chapter 7 evaluated each of the 6 case studies introduced in Chapter 5 to disclose the methods these companies had employed to ensure maintenance of trust by their consumers by not permitting the development of distrust. This was undertaken to answer the concern raised from this inclusive study that consumers were leaving themselves open to security risks due to lack of technical knowledge. The companies were selected to reflect the scope of the research in that they were Australian, B2C SME’s offering Internet commerce and had experienced a significant growth since the inception of their Internet commerce presence. As SMEs, these companies did not have the infrastructure or staff to ensure the same level of service as large businesses and were targets for fraud and hacking. Their collective experiences and strategies they had employed to overcome these risks to their security were collated into guidelines to assist SMEs ensure they are not victims of unscrupulous behaviour and consequently allowing distrust to grow in their clients. The guidelines assist in improving control trust as identified in the Tan & Thoen model (Tan and Thoen 2001). The guidelines also assist in improving the
factors associated with trusting in the company’s ability as identified in the Multi-Disciplinary Model of Trust.

8.2 DISCUSSION

Chapter 1 introduced the problem of B2C e-commerce not reaching the expected growth partly due to consumer trust. The scope of the research was set to SMEs using Internet commerce as its tool for marketing, presence, transactions and fulfillment. At this stage questions were raised to direct the research to enable a deeper knowledge of the issues, concerns and behaviours relating to B2C e-commerce for SMEs. More precisely they were an impetus to the investigation that would provide an understanding of consumer perception of trust with e-commerce, the integration of previous discipline specific research and the methods and strategies by which SMEs could improve consumer knowledge and perception of the B2C e-commerce SME with which they were wishing to trade. This section will now discuss how this research has answered the questions posed and developed knowledge to assist SMEs in building Internet commerce businesses that portray trust both with the company and in their ability to deliver safe commerce.
8.2.1 ESTABLISHMENT OF THE CONSUMER PERSPECTIVE OF B2C E-COMMERCE TRUST

Question 1: What is the position of the consumer in B2C e-commerce SMEs in relation to their knowledge and opinions of the relevance and necessity of recognised e-commerce trust mechanisms?

The initial position of this research was the existence of trust as an issue in the acceptance and growth of B2C e-commerce as defined by previous research, however this state of affairs had been established in the European and U.S. environments and required substantiating within the Australian environment. It was also necessary to build a knowledge of the understanding held by Australian consumers of B2C e-commerce if B2C e-commerce were to mature and develop to its potential within Australia.

The initial surveys undertaken established the position of potential and current e-commerce consumers in that it disclosed a large proportion of people were not comfortable with the technology or the companies trading online. This concern transcended generations of consumers including those who had been raised with the Internet as a part of their implicit technology knowledge.

In the initial investigation and the subsequent testing of the Multi-Disciplinary Model of Trust (MDMT) it was shown that consumers demonstrated a lack of understanding of the essential trust factors. Technical factors that indicated security of transaction and personal privacy were not recognised by a significant proportion of consumers such that it demonstrated that an issue existed in the consumer’s technical knowledge of what is required in a safe Internet commerce site. Further to this the testing of the MDMT prioritised the identified trust factors. From this result it was seen that consumers placed factors above the essential security factors such
as navigation, ease of use and size of company. While these factors add to the simplicity of using the site and the perception of the vendor’s ability to back their product with company size, they do not protect the consumer from unscrupulous behaviour of outsiders or even insiders. This knowledge of the gap in consumer readiness to undertake B2C e-commerce indicated a concern with the potential for unscrupulous behaviour to be undertaken with the consumer’s personal and financial information. When a consumer has inadequate knowledge to protect themselves from attack the result will be a negative experience with e-commerce. The result from the testing of the MDMT showed that previous negative experiences created distrust, an outcome to be avoided if e-commerce is to grow. These two issues combined create a bleak future for the uptake of B2C e-commerce if the education of technical requirements is not addressed. Further research was undertaken in the case studies in order to identify methods and strategies to be employed by vendors to minimise the risk for their consumers and protect them while they learn the structural and technological requirements for safe e-commerce. The testing of the MDMT also demonstrated that the consumer’s position with trusting a vendor was dominated by their trust in the vendor and not in their perception of their capability to deliver a safe and secure transaction or delivery. Consumers were more likely to purchase where they were positively acquainted with a vendor even though they were well aware of the short fallings in the technical offerings by the vendor’s online commerce practices. This knowledge and its affect on the party trust + control trust balance would be further researched in the case studies that followed.
8.2.2 MERGING OF PREVIOUS RESEARCH

Question 2: Does the merging and validating of the previous discipline specific B2C e-commerce SME’s research enable a richer understanding of the consumer perspective of B2C e-commerce trust when presented as a unified research?

While engaging in the development of an understanding of the previous research into e-commerce trust, it became apparent that the research had been undertaken relative to the discipline of the researcher. This appeared to reflect the multi-disciplinary nature of both trust and e-commerce which are considered to be the subject of interest in the areas of psychology, business, sociology, human-computer interaction, information systems and marketing. To obtain an understanding of e-commerce trust it was advantageous to analyse the issues, definitions, concerns and understandings raised by each of these areas without the limitations of a discipline specific perspective. The study of the discipline specific research proved invaluable in understanding the concept of trust as not only a static influence on behaviour as in the Technology Acceptance Model (TAM) but as a fluid, constantly changing thought process and calculation that is influenced by both individuals and societal norms and expectations. The merging of the TAM and the Theory of Planned Behaviour (TPB) with the party trust + control trust equation of Tan and Thoen furthered the understanding of the complexity by which trust is generated and experienced. Risk was identified by all research disciplines to be the impetus for the need for trust and hence this deeper understanding of all the perspectives of trust highlighted numerous avenues of risk that could be affecters of trust.

The consideration of trust through the eyes of significant researchers has created a richer and more inclusive understanding of the potential hazards and impediments to trust as well as those factors that assist and intensify trust.
The second area of merging of trust research came in the form of trust models which again had been developed and tested within discipline specific research. Previous disciplinary isolated research had reached a level of maturity where it became necessary to merge the recognised factors in order to build a more comprehensive understanding. It was also necessary to validate the importance of each factor in the merged model through testing as a unified perspective and not in isolation of other research outcomes. To ensure a deeper understanding of the models developed, the MDMT was established where redundancies and overlaps between disciplines were removed.

The MDMT validated many of the proposed concepts and correlation of factors. The MDMT was tested from a consumer perspective of those factors that were considered most important to them when viewed, not in isolation, but as an entirety. This had not previously been undertaken in B2C e-commerce research. It highlighted significant areas of concern in consumer understanding of e-commerce as well as areas that may assist in building trust with e-commerce for SMEs. The MDMT provided a ‘one stop shop’ for understanding all the relevant individual factors affecting trust as have been recognised by previous researches without having to first recognise which disciplines are involved in e-commerce research and second search out the findings relating to trust determination from these disciplines.

The discussion that preceded the development of the MDMT gave rise to an insight of trust as a dual perception of trust with the company and trust with the company’s ability. It was from this discrimination that an understanding of how consumer’s perceived trust was established. This understanding also assisted in further researching strategies to support trust engendering behaviour and technology by the SMEs.
As the MDMT was tested as a unified factor model and not groups of factors in disciplinary isolation the testing of the MDMT substantiated many of the factors that originated from previous research and more importantly prioritised the consumer perspective of each of these factors. The comparative positioning of the importance of trust factors merging enabled a more complete understanding of the consumer prioritisation when confronted with inquiry related to all the issues relating to trust. A prominent feature of the MDMT testing is the consumer’s perspective of their knowledge of the technology involved in B2C e-commerce correlated with their demonstrated lack of knowledge in B2C e-commerce and the subsequent negative affect this has on their trust in B2C e-commerce. Another feature, that has been a result of testing both the psychological/sociological perspectives of trust factors simultaneously with the technical factors of trust, is the benevolent community trust outweighs a lack of technological trust with the vendor. These features gave rise to further studies to explain and build knowledge relating to the surrounding phenomenon as discussed in Chapters 6 and 7.

8.2.3 ASSISTING B2C E-COMMERCE SMES DEVELOP AND MAINTAIN CONSUMER TRUST

Question 3: What methodological knowledge could assist a new B2C e-commerce SME develop and maintain consumer trust?

The MDMT and the resultant consumer perspective of the MDMT raised issues relating to the knowledge, perceptions and the affects that antecedents have on e-commerce trust. It also identified phenomenon surrounding consumer behaviour that could be beneficial to the knowledge of new SMEs in acquiring and maintaining trust.
The case studies that were undertaken enabled an understanding of how SMEs that were growing as e-commerce businesses had overcome the concerns that were raised by consumers in the testing of the MDMT and developed a trusting relationship with their customer. The case studies approached the trust issue from two perspectives.

Firstly considered were strategies the businesses had undertaken to improve the perceived trust factors as depicted in the MDMT. The benevolent, community based approach enabled the consumer to understand the vendor by investing time in building knowledge of their intention, behaviour and benevolence. These strategies assist the consumer in developing a trusting relationship with the vendor and increase trust with the vendor as depicted in the MDMT. The case studies further recognised the strategies of one company which invested time in order to build the trust of consumers online before moving to commerce consequently realising an equivalent level of trust as that experienced by vendors with B&M long term established businesses.

Secondly considered were the strategies the businesses had undertaken to improve identifiable trust factors as depicted in the MDMT. These include strategies such as improving the consumers technical knowledge, overcoming the antecedents, introducing 3rd party verification, improving information regarding policies and procedures and building vendor technical trust by introducing fulfillment and transactions initially through a trusted 3rd party. The empowering of the consumer to be discerning of a B2C e-commerce vendor enables trust in the vendor's ability to be established and developed.

The information received from the consumers gave rise to the understanding that the greater the trust in the vendor the less the requirement of trust in the vendor's ability. This presents a balancing act for purely online new SMEs intending to initially acquire trust, in that initially there is no trust in existence. SMEs who have
not had the time or resources to establish bullet proof technologies or behavioural patterns within their business are an easy target for those wishing to infiltrate their business be it through transactions or customer attraction. The case studies discussed offer warnings from their experiences, highlight signals of which to be aware and offer strategies to prevent any intrusions and misbehaviour that may occur. The guidelines and trust building strategies offered provide risk reducing plans of action that can be undertaken. They tackle both sides of the balancing of the trust in the vendor and trust in the vendor’s ability by improving the technical knowledge of the consumer, the technical stability of the SME and the perception of the consumer of the benevolence and integrity of the vendor.

8.3 ETHICAL ISSUES

The research, guidelines and strategies described in this research are done so with the intention of usage by SMEs, designers, marketers and researchers for the benefit of improving trust in B2C e-commerce SMEs over the Internet. It is also intended to improve consumer understanding and their perspective of B2C e-commerce through providing a more in depth knowledge of the vendor and their intention, the technologies required for safe and secure transactions, privacy and fulfillment. It is realised that the knowledge offered in this research could also be used for the misrepresentation of a trusting business by unscrupulous behaviour by implementing the guidelines and strategies and benefiting from the research undertaken.
8.4 LIMITATION OF STUDY

8.4.1 SCOPE

Previous studies into B2C e-commerce have limited themselves to the scope of their discipline which is restrictive in the inclusion of extraneous confounding factors that may have significant influence on outcomes that are unforeseen. This study attempted to be rigorous in its inclusion of related disciplines however this may be to the detriment of the overall study given that there were many trust factors that may have lead to distraction. This was intentional to ensure both internal and external validity and considered essential to understand the complete picture as would be seen by a consumer when confronted with trust decision making in a real-world environment.

8.4.2 INTERNAL VALIDITY

The development of the MDMT was inclusive of various disciplines to develop an overall understanding of trust in e-commerce. It is considered the maturation of trust in e-commerce research would include all extraneous variables, however it is also recognised that there may have been another unknown confounding factor that was driving the opinions of the derived conclusions. Consequential maturation of the participants may have occurred given they were subjected to 4 individual sites. The building of knowledge in terminology and symbolism was intentional to enable well-informed answers to the final questions, however this may have affected the results from the earlier questions. Subjects were asked if they wanted to elaborate on any comments they had made which may pick up on changes in opinion.
The testing of the MDMT was also a lengthy experience with a substantial number of questions asked and continual interaction, this may have lessened the alertness and motivation of the participants towards the end of the test.

8.4.3 EXTERNAL VALIDITY - TRANSFERABILITY

The external validity is used with quantitative research to measure the ability to generalise from the findings. The transferability is used with qualitative research referring to the ability to transfer the results to other situations with similar parameters, populations and characteristics (Lincoln and Guba 1986). Both forms of validation will be considered as both quantitative and qualitative research has been undertaken in this research.

The researched case studies offer situational experiences and would vary for all types of business and clients. They do offer some basic structures that would apply to all similar circumstances and the knowledge gained can be transferred into these areas as a basis of understanding and guidance and can be adapted to suit each individual situation.

Aptitude-Treatment-Interaction determines if certain features of the sample interact with the independent variable. In regards to the testing undertaken all participants were volunteers, there may have been other outcomes offered if the participants had been non-volunteers. While it was intended to be broad with the demographics, the selection of age, gender, place of birth and experience, there may have been further opinions available from varied socio-economic participants not considered.

Situation: The specific situation of the study limiting the ability to generalise. The testing in all cases was done at a time which was convenient to the tester and not necessarily a time when the participant required the product or service which may
affect the participants impetus when answering questions. The other physical requirements of the testing environment were stable.

Reactivity: As the studies could be seen as a novelty or the outcomes reflect the Hathorne effect (Mayo 1949) there may be some varying opinions given than normal private usage would create. The methods of verbal protocol and online surveys offered participants time and opportunity to consider their options to each question and to go over their thoughts at their own time with elaborations made through discussion. This should reduce the reactivity affects although it is recognised that the possibility of this exists.

The ever changing nature of e-commerce in relation to the changes to rules and social norms governing e-commerce and the media interpretations affecting consumer knowledge and capabilities will affect the future transferability and appropriateness of the results of this research.

8.4.4 CONSTRUCT VALIDITY

Construct validity considers the degree to which the results can be generalised back to the theoretical construct originally determined. The concept of trust was broadly described in this research although it was not explained as a concept to the participants of the studies. Participants were left to determine their own perspective of trust and knowledge without a pre determined definition of what is trust and to what extent does it involve commitment or opening oneself to vulnerability of risk. The multiple definitions of trust as earlier discussed shows that trust is many things to many people and limiting this construct may have caused confusion for the participants and hence they were able to answer in a fashion that suited their own personal understanding. In particular given the ambiguity of the term trust, it may
be found that the phrasing of a trust related question can influence how they will be answered.

8.4.5 ECOLOGICAL VALIDITY

Ecological validity requires that the research methods, materials and setting of the experiment reflects the real-life situation (Brewer 2000). In relation to the initial validity testing and the MDMT testing the situation, methods and materials are close to the real-life situation of purchasing goods and products online. However for the participants there were not the added security issues that prevail when using their own credit cards leaving themselves vulnerable. The research undertaken merely asked participants to consider their expected response to using their own cards. This may cause responses to be less critical when making trust decisions or more lenient on trusting when there is no personal risk.

8.5 CONTRIBUTIONS TO RESEARCH

8.5.1 OUTCOME 1: MULTIDISCIPLINARY REVIEW OF TRUST

The definitions of trust were discussed from various perspectives from both current and historical research. The trust perspectives of the Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB) and party trust/control trust were integrated to better represent the influence of human–computer–human interaction. The integration of these models shows the social, psychological and business influences on the introduction of what may appear to be solely humans adapting to a technical environment. This review reflected the multi-disciplinary nature of e-commerce and led to a better understanding of trust as a complex issue.
Outcome 1 was developed in Chapters 2 and 3 to contribute to answering question 1 in Section 8.2.1.

**Why was this research necessary?**

Trust has been researched and defined from numerous perspectives since time immemorial. Trust is required for society to exist, without trust there would be no commerce, no relationships and no facility for agreement. Electronic commerce encompasses many of these disciplines, requiring not only technological solutions but adding human behaviour to the equation. To understand trust in e-commerce it is not enough to consider an individual discipline specific definition that would not represent the complexity of e-commerce. The TAM represents one consideration of trust, a static technology without human influence where misconduct is anonymous and non-confrontational. To consider the TAM as a solution to e-commerce trust or any other singular perspective as described in Chapter 3 disregards the intertwining of essential factors. Integration of TAM, the TPB and control/party trust moves one step further in explaining the complexity of e-commerce trust by emphasising the non-static nature of e-commerce technology. This trust review offered multiple views of trust that should all be considered when considering the intricacies of human driven technology developed for human use.

**Who benefits from this research?**

The study of e-commerce trust has often resulted in individual researchers considering the question of trust confined to their own area of expertise without an understanding of the complexities of integrating various disciplines. This review provides an overview of the various disciplines contributing to the understanding of trust.

This review is of benefit to researchers of e-commerce trust and those involved in the development and dissemination of e-commerce from the contributing disciplines. These disciplines include human-computer interaction (HCI),
information systems (IS), marketing, commerce, psychology sociology, designers, programmers and technicians all of whom have a stake in the understanding and building of e-commerce trust.

How do they benefit from this research?
The definitions of trust from the varying disciplines contribute to an overall understanding of e-commerce trust. By considering all aspects of trust rather than solely those which are relevant to their discipline, researchers and developers will be able to make educated, well rounded decisions in regards to e-commerce trust reducing the opportunities for neglect of essential components of the trust decision.

8.5.2 OUTCOME 2: MULTI-DISCIPLINARY MODEL OF TRUST

B2C e-commerce trust models were reviewed from various e-commerce research disciplines. The factors considered to contribute to trust determination from each of these disciplines were examined and repetition and redundancies were removed. The remaining factors were categorised to reflect where the trust was being directed, the view of the trust and the personal attributes of the trustor that influenced trust. This outcome was the Multi-Disciplinary Model of Trust.
Outcome 2 was developed in Chapter 4 and reviewed in Chapter 5 to contribute in answering question 2 in Section 8.2.2.

Why was this research necessary?
Research into modeling of B2C e-commerce had been approached from varying disciplines, each of which held a stake in e-commerce. The research had reached a level of maturity where it was time to consider each of these models and their contribution to e-commerce trust without the restriction of a single discipline. It was
also necessary to consider how the factors contained within models affected the overall picture of trust determination. The MDMT provides an inclusive, non-disciplinary, integrated view of the trust engendering factors of B2C e-commerce trust.

Who benefits from this research?
Researchers into e-commerce requiring an overall view of trust determining factors will benefit from both the discussion of the previous B2C e-commerce trust models and the final model of the MDMT. Those who will benefit will be generally within the disciplines of human-computer interaction, information systems, marketing, commerce, psychology, sociology, designers, programmers and technicians. New SME’s considering the trust issue when determining the company image they intend to display to the public.

How do they benefit from this research?
The MDMT and the discussions on previous models create a ‘one stop shop’ for future researchers and SMEs wanting to understand the factors and derivation of factors in relation to B2C e-commerce trust. For both parties this removes the need for seeking out relevant literature and models from the contributing disciplines and its subsequent analysis of terms to determine the affecters of trust.

8.5.3 OUTCOME 3: CONSUMER PERSPECTIVE OF MULTI-DISCIPLINARY MODEL OF TRUST

The factors included in the MDMT represented the merging of B2C e-commerce models by previous researchers. The consumer perspective was obtained through the testing of the MDMT and highlighted the prioritisation of trust engendering factors, issues surrounding the technical knowledge of consumers and the balancing
of trust. The testing also confirmed the unbundling of the trust concept. The major outcomes of the testing have been tabulated for ease of use.

Outcome 3 was developed in Chapter 5 to contribute to answering question 2 in Section 8.2.2.

**Why was this research necessary?**

The MDMT provided an interdisciplinary view of B2C e-commerce models however the factors involved in the model had not previously been integrated and consequently not tested as an entirety in order to view the response by the consumer when not considered in isolation. This testing was not intended to downgrade the importance of any of the factors which had previously been established by previous researchers but was intended to highlight the perspective of the consumer when viewed in their entirety, a view that differs from when a limited number of factors are considered in isolation. This consumer perspective of e-commerce trust factors disclosed significant concerns, issues and benefits to trust building in B2C e-commerce which were not evident when isolated discipline specific testing was undertaken.

**Who benefits from this research?**

The benefit of the derivation of the consumer perspective is to future aforementioned e-commerce researchers as it has highlighted a gap in the previous research findings and the consumer experience when integrated with other equally significant research. This is of particular interest to HCI research in that it embodies the very essence of the user experience where the surrounding factors are inclusive, permitting them to influence the overall impression and working of the interface. SMEs are able to benefit from this research in that they are aware of which areas cause concern with the user experience.
Designers, marketers and business strategists will obtain knowledge of the consumer perspective of trust and the areas that require development and maintenance.

How do they benefit from this research?

The research provides a view of B2C e-commerce trust that extracts further information regarding the interpretation of trust factors that are not insular in their testing. It generates a more enriched understanding of how a consumer views B2C e-commerce trust factors and the impetus for their trust determining decisions. The results disclosed the dominance of ‘trust with the vendor’ over ‘trust with the vendor’s ability’ and establish these two trusts as separate issues to be dealt with when considering trust determination.

Further the testing revealed the consumer’s inadequacies with the technology and their consequential lack of readiness to undertake safe e-commerce transactions an issue to be dealt with by researchers and SMEs to prevent the development of distrust through negative experience.

From the positive perspective the testing also revealed the strength of benevolent, community behaviour as a tool for adoption by SMEs to overcome the perception of technical inadequacies and previous negative experiences. While one method is explored further in these studies to use this to advantage, there remain opportunities to continue to further this avenue of discussion.

The derived table of issues, concerns and phenomenon provides an easy reference for both researchers and SMEs to establish an understanding of the consumer perspective and knowledge of B2C e-commerce trust.
8.5.4 OUTCOME 4: GUIDELINES TO IMPROVE PARTY TRUST

The experiences of Australian SME B2C Internet commerce companies that have established benevolent communities either through previous B&M presence or through the Internet and successfully grown their businesses online have been collated to establish a set of guidelines for SMEs. The collective information is to provide knowledge of the benefits of building communities before undertaking Internet commerce and to assist vendors in understanding business strategies that can be undertaken to improve consumer trust in the vendor as a benevolent partner. Outcome 4 was developed in Chapter 6 to contribute to answering question 3 in Section 8.2.3.

Why was this research necessary?

SMEs do not generally have the resources or financial backing of the large businesses to provide 24/7 coverage of their sites by employed staff or to provide a similar level of technological expertise, development or fulfillment. To this end they require some compromises to be made that may give the appearance of not reaching standards that are trust engendering. The testing of the MDMT disclosed the dominance of the trust with the vendor over the trust with the vendor’s ability as a factor that may assist SMEs gain advantage in their e-commerce trust gaining effort.

Who benefits from this research?

The strategies and guidelines that were developed through the discussions with the successful companies may assist SMEs gain the alliance of consumers through demonstrating benevolent community based behaviour. The conduct will create a social norm for the community and an expectation of honest, competent actions from the vendor.
The presentation of the vendor as a trustworthy individual without all the added concerns associated with the technology, privacy and fulfillment will give the consumer an opportunity to pass judgment on the vendor and the vendor’s intentions. This assists the consumer to develop a relationship beyond the customer-computer which more in keeping with the current experiences of the B&M.

There are substantial benefits to be gained with trust in e-commerce by creating a trusting environment. This knowledge creates an avenue for further research and the opportunity for building on the pool of information gained from these case studies in this rapidly changing phenomenon.

**How do they benefit from this research?**

There are many benefits from improving the trust with the vendor through the implementation of a community that demonstrates benevolent behaviour. Firstly the SMEs are able to gain advantage by improving their knowledge of consumers. Next the interactivity provides methods for informal market research, trialing varied technologies, then the development of social norms within the community while finally offering the opportunity for leading the consumers through the technical maze in a controlled manner.

The consumers are given the opportunity to assess the intentions of the SME and to be introduced to varied levels of technology that involve payments, privacy or fulfillment by the introduction of established trusted 3rd parties. The consumers can introduce new technologies individually rather than having to cope with all levels of security and trust at the same time.

The provision of knowledge in relation to the dominance of trusting the vendor opens up opportunities for gaining benefit for SMEs. This knowledge, together with the proposed guidelines and strategies for improving trust with the vendor and
party trust, create a firm basis for further investigation in the changing e-commerce environment.

8.5.5 OUTCOME 5: FURTHER THE MODEL OF CONTROL TRUST + PARTY TRUST = TRANSACTION TRUST

An outcome of the testing of the MDMT identified trust with a known vendor who demonstrated benevolent community behaviour as a decision determinant for undertaking a transaction with the vendor even though trust in the vendor’s ability was seen to be substantially less than adequate.

The identified phenomenon extends the trust model equation proposed by Than and Thoen of control trust + party trust = transaction trust by demonstrating the balancing of increasing party trust to the near exclusion of the need for control trust to the extent described as a ‘blind trust’.

Outcome 5 was developed in Chapter 6 to contribute to answering question 3 in Section 8.2.3.

Why was this research necessary?
The MDMT testing identified the phenomenon of a relationship between trusting the vendor and the vendor’s capability. The analysis and further research through case studies led to the development of knowledge and a deeper understanding of the relationship between these two factors with the intention of obtaining advantage in trust building by SMEs. The model developed by Tan and Thoen describes the interrelations between control and party trust (see description in Section 4-1) and their ability to determine transaction trust.

Who benefits from this research?
The outcome of this research suggests that a short falling in the technical aspects of e-commerce does not necessarily imply the consumer decision to trust to purchase
through the Internet is affected detrimentally. This is especially relevant to the SME who may not have the finances, time or technical capabilities available to them that the larger companies employ. Therefore the outcome of the ability to balance control with party trust is of benefit to SMEs, in particular new SMEs, e-commerce developers and marketers. It is also of benefit to researchers in e-commerce who are able to gain a deeper understanding of the party trust/control trust relationship and sets a basis for further studies within this area.

**How do they benefit from this research?**

When starting an e-commerce business, understanding the technology that is available and acquiring the required technology can cause concerns for the SME that is not in a position to match the levels of technology of the larger businesses. The research suggests that the control mechanisms for security privacy and fulfillment and the usability can be reduced by the higher level of trust in the vendor themselves. The research also suggests that to take the absence of technology to extremes would in time cause distrust through negative experience, a situation to be strongly avoided, however that visibility of these mechanisms in design can take a secondary role where the party trust is in place.

**8.5.6 OUTCOME 6: GUIDELINES TO IMPROVE CONTROL TRUST**

From the experiences of Australian SME B2C Internet commerce companies that have established and successfully grown their businesses online, a set of guidelines has been established to assist in developing and improving the technical reliability and robustness for newly establishing companies. Outcome 6 was developed in Chapter 7 to contribute to answering question 3 in Section 8.2.3.

**Why was this research necessary?**
Initial surveys within this research into the consumer understanding of what is required in an Internet transaction to create a safe, secure and successful transaction and the subsequent testing of the MDMT demonstrated the consumer’s inadequate knowledge of recognised indicators. The testing of the MDMT also established a relationship between the consumer’s perspective of their lack of technical knowledge with e-commerce and the trust they held with e-commerce, that is the less knowledge the less trust. The MDMT testing also established a relationship between previous negative experiences with e-commerce and the consequential distrust of e-commerce. All of these outcomes suggest that a technical educational process would assist in building confidence in potential consumers while reducing the probability of consumers meeting with unscrupulous behaviour leading to distrust.

Maintenance of trust is fragile and it is essential that consumers are not given reason for concern over the security of their transaction, privacy or delivery of their product. The research considers methods for delivering controls that will ensure consumers view a stable, reliable service, minimising the possibility of shutdowns and infiltrations occurring.

**Who benefits from this research?**

As e-commerce is still developing with ever changing benchmarks in behaviours and infiltrations, it is difficult for start up companies and even those with some experience, to obtain a full knowledge of the difficulties that can be faced. The guidelines will assist SMEs who are intending on moving to B2C e-commerce or growing their e-commerce to benefit from the experiences of established businesses.

The resultant benefit of SMEs ensuring their business is more secure and in offering methods to improve the knowledge and understanding of potential e-commerce customers will not only benefit the SMEs but ultimately customers who are not
opening themselves to negative experiences and reaping the benefits that e-commerce has to offer.

The knowledge and guidelines attained in these case studies is neither exhaustive nor related to a static phenomenon, therefore ongoing discussions and pooling of information with established B2C e-commerce SMEs would benefit both SMEs and consumers. Researchers will be able to use these guidelines as a basis as the environment changes.

**How do they benefit from this research?**

The initial stages of building an Internet business require significant knowledge of areas other than those required for a B&M store. Through the combined experiences of the SMEs who took part in this research, knowledge has been acquired from their trials and errors, advice received and the e-commerce research they have undertaken. The guidelines developed from the collective knowledge will enable B2C Internet commerce SME start up companies to learn from the experiences of the studied cases and reduce the incidence of fraudulent behaviour or other negative experiences involved in purchasing online.

### 8.6 FUTURE WORK

This research has brought to light a deeper understanding of consumer knowledge and the direct implications of their experiences and perceptions on trust in B2C e-commerce. The outcomes of the research offer guidelines to assist in overcoming or preventing negative experiences, however they are aiming at a moving target. The guidelines established are useful as a basis for new SMEs but require continual updating as new methods of undermining the system are experienced. It would be advantageous to B2C e-commerce trust knowledge if future development of guidelines were pooled by researchers, or even the SMEs themselves, to attempt to
keep up with the latest advancements in overcoming the creation of distrustful environments.

For HCI and IS research the MDMT requires more validation to further understand the interactivity of each of the factors, considering how each of the factors affects others. The research undertaken here is with Australian participants and while they were from diverse cultural backgrounds they were viewing the sites within an Australian environment. Repeating the experiments within other countries could demonstrate any cultural differences if they existed. Within this study it was shown that a negative experience with e-commerce turned the participants away from e-commerce in general, is this cultural or would others only be put off the individual company itself? Does a lack of confidence in technical ability with e-commerce deter other cultures from trusting e-commerce? These are a few of the questions that could demonstrate cultural differences and encourage the need for future research to be explicit to Australian audiences only if we are to move forward with trust in e-commerce in Australia.

It would also be of interest to build a weighting to each of the components within the MDMT, while a consumer perspective priority listing has been established in this research, further studies could extend this to understanding the implications of dominant and ineffective factors once the weight each factor carries is known.

A Decision Support System could be considered where trust in SMEs for B2C e-commerce could also be considered as a management problem with both customers and SMEs as the participants, employing both subjective and objective criteria to the confidences and risks from all players.

Table 4.1 refers to the commonalities (perspective, direction and testing status this could also be consider other similarities or differences with different trust dimensions within each perspective.
For SMEs, building and maintaining trust will always produce greater difficulties than the larger businesses, in particular those who wish to start up companies online without a proven track record in B&M. This research has offered one business strategy that has built benevolence and community to improve party trust. Further research could seek out other successful companies and how they have created trust within their online businesses without previously developing trust in a B&M environment.

8.7 CONCLUDING REMARKS

This research has considered the position of the consumer in Australian B2C Internet commerce for SMEs and found that there exist substantial concerns remaining with the understanding and perceptions of e-commerce leading to a lack of trust or even distrust. It is widely accepted that it is harder to gain trust from a distrust stance and hence the maintenance of trust and reducing the possibility of distrust is essential for B2C e-commerce to thrive. Inadequate knowledge of the technology leads to distrust in the technology and increases the risk of a negative experience occurring with e-commerce. Negative experiences lead to distrust and hence are to be avoided.

Education in the technology of e-commerce is one way to improve the confidence of potential consumers and decrease the likelihood that errors of judgment will be made in choosing to trust a particular business. This education can come in the form of slow introduction to each of the facilities, securities, policies and procedures by the SMEs given that they are aware of where the knowledge gaps exist. Vendors who invest time in building trust will reap the benefit of developing a customer relationship where the customer has a deeper understanding of the business and the intentions and the benevolence of the vendor.
SMEs do not have to fall behind in the trust equation but rather use their size to their advantage by improving their ability to personalise their business. Transactions are still possible when there is a lack of trust with the vendor’s ability if there is trust with the vendor. Trust can be improved by developing the strength and visibility of the party trust. It is not suggested that control trust is neglected, even though the study has shown that it is still possible to gain initial transaction trust without control trust, rather that the strengthening of party trust will help tip the balance in favour of purchasing where an SME is attempting to gain trust without the backing that is available to large businesses.

Much of the previous research considered the development of trust without recognition of the equal importance of the maintenance of trust. Leaving a consumer open to risk can also create negative experiences leading to distrust, a difficult mindset to overcome.

SMEs cannot expect that trust will be available to them at the outset of their business they must embrace methods to gain advantage over other businesses and set themselves apart in the trust arena. The strategies and guidelines offered can assist SMEs to make decisions to encourage initial trust and maintain trust in such a way as to nurture consumers into what appears as a daunting new age technology which continuously divulges new methods of fraud and personal intrusion.

Researchers must continually explore the ever changing landscape and offer guidance for new and existing businesses to build trustworthy sites and businesses and assist consumers in keeping up with the challenges that can ultimately improve their lifestyle and consumer choice.
REFERENCES


A.1 SURVEY QUESTIONS

Net Generation Online Survey
Unformatted sets of online questions below as allocated to the participant dependant on their site number and final decision to purchase.
Site: 1; Decision: Not to Book.
You have decided not to book with Sanity now, just a few more questions......
What factors influenced you away from continuing with the booking?
Security used
Privacy and Security policies
Encryption notice
Was the site lacking in some details that stopped you continuing with the booking?
Yes No
If there were a closed gold lock on the bar at the bottom of the page would you have continued with the booking?
Yes No
If there had been a privacy and security policy that was in force on the web site would you have continued with the booking?
Yes No
If there were both a privacy and security policy and a closed gold lock would you have continued with the booking
Yes No
If these features are not enough to tempt you to use the web for e-commerce is there any other feature that you would expect on a web site in order to convince you that you were purchasing in a secure environment.

What would you expect you will be able to do over the web in 10 years from now?

Site: 2; Decision: Not to Book.
You have decided not to book with Sanity now, just a few more questions......
What factors influenced you away from continuing with the booking?

Security used
Privacy and Security policies
Encryption notice

Was the site lacking in some details that stopped you continuing with the booking?
Yes No
If there had been a privacy and security policy that was in force on the web site would you have continued with the booking?
Yes No
Did you notice that there was a gold lock on the site which acknowledges that the site is a secure information site with data encryption?
Yes No

Does this symbol give you enough confidence in the company to book on line through this company?
Yes No
If there were both a privacy and security policy and a closed gold lock would you have continued with the booking?
Yes No

If these features are not enough to tempt you to use the web for e-commerce is there any other feature that you would expect on a web site in order to convince you that you were purchasing in a secure environment.
What would you expect you will be able to do over the web in 10 years from now?
Site: 3; Decision: Not to Book.
You have decided not to book with Sanity now, just a few more questions......
What factors influenced you away from continuing with the booking?
Security used
Privacy and Security policies
Information about security with my details
Was the Site lacking in some details that stopped you continuing with the booking?
Yes No
Did you notice the Privacy and Security Policy notice for the company
Yes No
Did the Privacy and Security Policy notice give you enough confidence in the company to book online through this company?
Yes No
If there were a closed gold lock on the bar at the bottom of the page would you have continued with the booking?
Yes No
If there were both a privacy and security policy and a closed gold lock would you have continued with the booking?
Yes No
If these features are not enough to tempt you to use the web for e-commerce is there any other feature that you would expect on a web site in order to convince you that you were purchasing in a secure environment.
What would you expect you will be able to do over the web in 10 years from now?
Site: 4; Decision: Not to Book;
You have decided not to book with Sanity now, just a few more questions......
What factors influenced you away from continuing with the booking?
Security used
Privacy and Security policies
Information about security with my details
Was the Site lacking in some details that stopped you continuing with the booking?
Yes No
Did you notice the Verif-eye third party recognition of the existence of the company
Yes No
Did you notice the Privacy and Security Policy notice for the company?
Yes No
Did you notice that there was a gold lock on the site which acknowledges that the site is a secure information site with data encryption?
Yes No
Does this symbol give you enough confidence in the company to book on line through this company?
Yes No
If you had noticed that there were both a privacy and security policy and a closed gold lock would you have continued with the booking?
Yes No
If these features are not enough to tempt you to use the web for e_commerce is there any other feature that you would you expect on a web site in order to convince you that you were purchasing in a secure environment.
What would you expect you will be able to do over the web in 10 years from now?
Site: 1; Decision: To Book.
You have decided to book with Sanity now just a few more questions......
You were in a hurry to purchase this CD, was that the determining factor in completing the purchase.?
Yes No
Did the booking page give you enough information and confidence in the company to Continue with the booking?
Yes No
Did you notice that there was no privacy and security policy available on the site?
Yes No
Did you notice that there were no symbols of a secure site such as a closed lock at the bottom of the page to show what security was taken with your credit card details?
Yes No
Would you now change your mind about booking with this company?
Yes No
What would you expect you will be able to do over the web in 10 years from now?
Site: 2; Decision: To Book.
You have decided to book with Sanity, now just a few more questions......
You were in a hurry to purchase this CD, was that the determining factor in completing the purchase.
Yes No
Did the booking page give you enough information and confidence in the company to continue with the booking?
Yes No
Did you notice that there was a gold lock on the site which acknowledges that the site is a secure information site with data encryption?
Yes No
Does this symbol make you feel secure enough to now book with Sanity?
Yes No
Did you notice that there were no privacy and security policies available on the site?
Yes No
Would you now change your mind about booking with this company?
Yes No
What would you expect you will be able to do over the web in 10 years from now?
Site: 3; Decision: To Book.
You have decided to book with Sanity now just a few more questions......
You were in a hurry to purchase this CD, was that the determining factor in completing the purchase?
Yes No
Did the booking page give you enough information and confidence in the company to continue with the booking?
Yes No
Did you notice Privacy and Security policy on the site?
Yes No
Did the privacy and security policy give you more confidence in the company?
Yes No
Did you notice that there were no symbols of a secure site such as a closed lock at the bottom of the page to show what security was taken with your credit card details?
Yes No
Would you now change your mind about booking with this company?
Yes No
What would you expect you will be able to do over the web in 10 years from now?
Site: 4; Decision: To Book.
You have decided to book with Snaity now just a few more questions......
You were in a hurry to purchase this CD, was that the determining factor in completing the booking?
Yes No
Did the overview and testimonial give you enough information and confidence in the company to continue with the booking?
Yes No
Did you notice Privacy and Security policy on the site?
Yes No
Did the Privacy and Security policy give you more confidence in the company?
Yes No
Did you notice that there was a gold lock on the site which acknowledges that the site is a secure information site with data encryption?
Yes No

Does this symbol make you feel secure enough to now book with Sanity?
Yes No

Would you now change your mind about booking with this company?
Yes No

What would you expect you will be able to do over the web in 10 years from now?
Multi-Disciplinary Model of Trust

Age   _______________   Subject No.______

Gender: ☐ Female   ☐ Male

Country of Birth   _______________

Preferred Language _______________

Occupation ____________________________________________

Current Level of educational qualification ______________

Do you work or study with computers?

☐ Yes  ☐ No

Do you use the internet more than once per week?

☐ Yes  ☐ No

Do you use the internet for any of the following?

<table>
<thead>
<tr>
<th>Activity</th>
<th>More than once per month</th>
<th>Less than once per month</th>
<th>Only once and not again</th>
<th>Never used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking including bills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel Purchasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books Purchasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buying other goods under $500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buying other goods over $500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Do you feel confident in your technical knowledge and ability when buying goods and services on the internet?

☐ Yes  ☐ No

From your experience do you believe buying goods and services on the internet is a safe method of making a purchase?

☐ Yes  ☐ No  ☐ N.A.

In daily life do you see yourself as:

☐ extremely careful whom and what I trust
☐ prepared to trust people but do so with caution
☐ I tend to trust all people.

You may wish to elaborate on this if you have confidence in some but not all internet commerce

____________________________________________________________________

____________________________________________________________________
(CINEMACO)


14. Do you know of (CinemaCo) Cinemas?
☐ Yes  ☐ No

If no proceed to question 17

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 I trust (CinemaCo) to provide their service as a cinema</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 I trust (CinemaCo) to provide a safe method of purchasing tickets over the internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 I feel confident that when I have completed all the required payments that my account will be correctly debited.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 The site looks very professional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. The professional look of the (CinemaCo) web site encourages me to trust purchasing with them online</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 (CinemaCo) require you to become a member of the (CinemaCo) club before you can purchase tickets online. This requires giving personal information. This would not stop you purchasing tickets online</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 (CinemaCo)' privacy policy outlines their security measures and usage of your personal details. This would encourage me to purchase a ticket with them online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
22 Once you have registered with (CinemaCo) you are recognized on your next visit. Your personal details are available without your need to reenter them together with your favourite cinemas and their current listings. This recognition of the individual makes me feel more confident and trusting in the Hoyt's site?

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once you have registered with (CinemaCo) you are recognized on your next visit. Your personal details are available without your need to reenter them together with your favourite cinemas and their current listings. This recognition of the individual makes me feel more confident and trusting in the Hoyt's site?</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

23 (CinemaCo) offers information about buying tickets on the site, this give me more confidence in using this site?

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CinemaCo) offers information about buying tickets on the site, this give me more confidence in using this site?</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

24 If I had a need to purchase tickets from (CinemaCo) and was unable to attend the cinema this would encourage me to use the site to purchase tickets

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I had a need to purchase tickets from (CinemaCo) and was unable to attend the cinema this would encourage me to use the site to purchase tickets</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

25 The encryption used on the (CinemaCo) site was adequate for a secure transaction.

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The encryption used on the (CinemaCo) site was adequate for a secure transaction.</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

26 The (CinemaCo) site is easy to use

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The (CinemaCo) site is easy to use</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

27 The easy to use site makes me feel more trusting in using the (CinemaCo) site

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The easy to use site makes me feel more trusting in using the (CinemaCo) site</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

28 The inclusion of encryption is important to me when deciding to using this internet site

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The inclusion of encryption is important to me when deciding to using this internet site</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

29 I would purchase from (CinemaCo) online

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would purchase from (CinemaCo) online</td>
<td>Disagree</td>
<td>Neither</td>
<td>Agree</td>
</tr>
</tbody>
</table>

Sometimes yes and no is just not enough to say what you mean. Please feel free to add any comments you have about using the (CinemaCo) site to purchase Online

Comments:

BookCo

http://www.*****.com.au
<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you know (BookCo) Book Stores?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Yes  ☐ No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If no continue to question 33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 I trust (BookCo) to provide their service as a bookstore</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32 I trust (BookCo) to provide a safe method of purchasing tickets over</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33 I feel confident that when I have completed all the required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>payments that my account will be correctly debited.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34 The site looks very professional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 The professional look of the Reading’s site makes me feel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>confident to use this site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 (BookCo) appears to be a large business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37 If I required a book without going into a store I would feel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>confident in purchasing a book from (BookCo) online</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38 The encryption used on the (BookCo) site was adequate for a secure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transaction.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39 The inclusion of encryption is important to me when deciding to use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>an internet site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40 I would purchase from (BookCo) online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sometimes yes and no is just not enough to say what you mean. Please feel free to add any comments you have about using the (BookCo)’ site to purchase Online.
**AIRLINECO**

http://www.ryanair.com

41. Do you know (AirlineCo)?
   - Yes
   - No
   If no continue to question 44

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>42. I trust RyanAir to provide their service as an airline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>43. I trust RyanAir to provide a safe method of purchasing tickets over the internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44. I feel confident that when I have completed all the required payments that my account will be correctly debited.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45. The site looks very professional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>46. The professional look of the (AirlineCo)'s website encourages me to trust purchasing with them online</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47. If I purchased a ticket from the (AirlineCo)'s website I feel confident that the electronic printout will get me on the flight?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48. The RyanAir site is easy to use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49. The easy to use site makes me feel more trusting in using the RyanAir site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50. The encryption used on the RyanAir site was adequate for a secure transaction.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51. Hertz rent a car is a large international car rental company. From the (AirlineCo)'s site there is a link to the Hertz car rental site. The links to a well known company help me to trust RyanAir more.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52. I would purchase from RyanAir online</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sometimes yes and no is just not enough to say what you mean. Please feel free to add any comments you have about using the (AirlineCo) site to purchase Online

Comments:
Government Trade Mark


53 Have you ever dealt with an Australian government agency before?
- Yes at their counter
- Yes by phone or fax
- Yes Online
- No

If no go to Question 56

<table>
<thead>
<tr>
<th>Question</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 I trust the Australian Government to provide their services.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 I trust the Australian government to provide a safe method of making payment over the internet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56 I feel confident that when I have completed all the required payments that my account will be correctly debited.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57 The site looks professional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58 The professional looking site makes me more confident in using this site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59 Now that I have seen their web site I would be prepared to register a trademark with them online?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 The encryption used on the Government Trade Mark page was adequate for a secure transaction.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Disagree</td>
<td>Neither</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>61</td>
<td>I would expect that all government websites would use the most secure level of encryption available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>The inclusion of encryption is important to me in deciding if I would use this site?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>If I purchased a trademark from the government website, I feel confident that my electronic delivery will give me the correct details that I expect?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>The information content on the site gives me confidence in using this site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>On this government trademark site, there are methods to contact the customer support should you require. (*extract below taken from site). The feedback on the site makes the site more trustworthy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Being able to register a trademark online is of value to me</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Statement</td>
<td>Disagree</td>
<td>Neither</td>
</tr>
<tr>
<td>----</td>
<td>---------------------------------------------------------------------------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>67</td>
<td>I would purchase a Government Trade Mark online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>68</td>
<td>I trust a large company more when purchasing online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>I trust a small company more when purchasing online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>The testimonial on the (BookCo) website makes me trust using this site to purchase a book or CD. (<strong>testimonial below)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>The inclusion of the Westpac Secure Savings verification on the Tickitec site makes me feel more confident using this site for online transactions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sometimes yes and no is just not enough to say what you mean. Please feel free to add any comments you have about using the government trade mark site to register and pay Online

Comments:

General Questions
**Feedback:** If you had any problems using the application form or would like to suggest some ways in which the form would better meet your needs, we would be pleased to hear from you. You can provide your comments, problems, questions, etc, to the Customer Support Centre via email assist@(GovCo).gov.au or ring during business hours on (02) 6283 2999.

**I can only say good things about this wonderful company. I have done transactions with them, and have never been let down. I can say that their prices are reasonable, their shipping rates and packaging are fantastic, and you get just what you see. They are true professionals, who understand the word CUSTOMER SERVICE and will go the extra mile to make you happy!"**

Christie Beard
Melbourne

Sometimes yes and no is just not enough to say what you mean. Please feel free to add any comments you have about using the government trade mark site to register and pay Online

Comments:

After looking at these sites in detail rate the following features that makes you more likely to trust and purchase from an internet business.

<table>
<thead>
<tr>
<th></th>
<th>No influence at all</th>
<th>Some influence but not much</th>
<th>Important for trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness. This can include such things as distance, time, price or need</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The quality/professionalism of the site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site enjoyment. This can include such things as services, games, appearance or products.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigation. How easily you can find your way around the web site.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd party verification. For example using banks, ebay or verisign.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process of delivering of your product</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encryption, technical security.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policies as to how they secure your personal details</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Method of payment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommendations from other companies or people</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No influence at all</td>
<td>Some influence</td>
<td>Important for trust</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------------</td>
<td>----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>The information provided on the site such as how to make your purchase, refund information.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being able to contact the company</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Testimonials from other customers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Known brand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Links to other known sites</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognition of the user. Such as using your name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowing the people at the company</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other things offered on the site like chat rooms or helpful information</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you feel confident in your technical knowledge and ability when buying goods and services on the internet?
- Yes  - No

Do you believe buying goods and services on the internet is a safe method of making a purchase?
- Yes  - No

Please feel free to add any other comments you have about purchasing online

Comments:
## APPENDIX B
### STATISTICAL TABLES

Chapter 5 References

<table>
<thead>
<tr>
<th></th>
<th>Trust CinemaCo ability - Trust CinemaCo</th>
<th>Trust BookCo ability - Trust BookCo</th>
<th>Trust AirlineCo ability - Trust AirlineCo</th>
<th>Trust GovCo ability - Trust GovCo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-3.819(a)</td>
<td>-2.972(a)</td>
<td>-.368(b)</td>
<td>-3.162(a)</td>
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<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.713</td>
<td>.002</td>
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</table>

Table –B1: Results of Wilcoxon Signed Rank Test for all Sites, Comparing Participants Trust of a Company to Their Trust in Their Ability to Provide a Safe Transaction Over the Internet.
<table>
<thead>
<tr>
<th>Predefined Trust Engendering Factors</th>
<th>Cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Navigation</td>
<td>0</td>
</tr>
<tr>
<td>Easy to use/ Usability</td>
<td>0</td>
</tr>
<tr>
<td>Perceived Size of Company</td>
<td>0</td>
</tr>
<tr>
<td>Other Services Offered</td>
<td>0</td>
</tr>
<tr>
<td>Customer Interaction</td>
<td>0</td>
</tr>
<tr>
<td>Professionalism of Site</td>
<td>0</td>
</tr>
<tr>
<td>Knowing People at Company</td>
<td>0</td>
</tr>
<tr>
<td>Store Enjoyment</td>
<td>1</td>
</tr>
<tr>
<td>Fulfillment Management Delivery</td>
<td>1</td>
</tr>
<tr>
<td>Fulfillment Management Payment</td>
<td>1</td>
</tr>
<tr>
<td>Known Brand</td>
<td>1</td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>1</td>
</tr>
<tr>
<td>Encryption, Tech Security</td>
<td>1</td>
</tr>
<tr>
<td>Links to Other Sites</td>
<td>1</td>
</tr>
<tr>
<td>Privacy Policy</td>
<td>2</td>
</tr>
<tr>
<td>Reputation Transfer of Trust</td>
<td>2</td>
</tr>
<tr>
<td>Information Content</td>
<td>2</td>
</tr>
<tr>
<td>Testimonials from customers</td>
<td>2</td>
</tr>
<tr>
<td>Tailoring</td>
<td>2</td>
</tr>
<tr>
<td>3rd Party verification</td>
<td>2</td>
</tr>
</tbody>
</table>

Table B2: Final Cluster Centres After 9 iterations
Table B3: Wilcoxon Signed Rank Test: Affect of trusting company's technical ability on intention to purchase.

<table>
<thead>
<tr>
<th></th>
<th>CinemaCo</th>
<th>BookCo</th>
<th>AirlineCo</th>
<th>GovCo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-.450</td>
<td>-3.042</td>
<td>-.338</td>
<td>-1.796</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.653</td>
<td>.002</td>
<td>.735</td>
<td>.073</td>
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</table>