

## Traditional and Alternative Internet Payment Systems: The Merchant Perspective

Mustafa Ally  
School of Information Systems  
University of Southern Queensland  
Toowoomba, Australia  
Email: [mustafa.ally@usq.edu.au](mailto:mustafa.ally@usq.edu.au)

Mark Toleman  
School of Information Systems  
University of Southern Queensland  
Toowoomba, Australia  
Email: [mark.toleman@usq.edu.au](mailto:mark.toleman@usq.edu.au)

Aileen Cater-Steel  
School of Information Systems  
University of Southern Queensland  
Toowoomba, Australia  
Email: [aileen.cater-steel@usq.edu.au](mailto:aileen.cater-steel@usq.edu.au)

### Abstract

*With increasingly powerful information and communications technologies, alternatives to traditional payments processes are emerging which promise not only convenience but improved value at lower cost. New payment methods enable merchants and businesses to realise the potential economic gains from shifting to more efficient electronic payments such as improved cash flow efficiencies, reduced costs and protection from fraud. This paper examines the influences and challenges associated with the evaluation and selection of methods for paying for goods and services by online merchants, specifically within the context of traditional and alternative payment methods and the Internet environment. Using a qualitative approach, representatives from five Australian online businesses were interviewed to (1) provide a snapshot of the payments landscape from a merchant perspective and (2) identify competing and conflicting requirements of merchants and their customers with respect to the use of payment methods. In view of the sensitive nature of the subject matter, particularly with regard to the issues of fraud, security, chargebacks and transaction volumes, a case study approach was considered to be more appropriate and effective. The findings suggest that merchants need to keep abreast of and adapt to changes in the payment field while taking cognisance of the changing patterns in consumer payment behaviour and the need to engender trust and confidence in the payment process.*

### Keywords

Internet payment systems, e-Commerce, online payments, Internet shopping

### INTRODUCTION

In 2005–06 the Australian Bureau of Statistics (2006) surveyed businesses across the country to measure the extent of their web presence and engagement in e-Commerce and the challenges and issues they faced while conducting business over the Internet. The survey found that the proportion of businesses reported having a web presence, either on their own dedicated website or as a presence on another entity's website, was continuing to grow, reaching 30 percent.

The proportion of businesses reporting receipt of orders via the Internet or web had increased from 12 percent in 2004–05 to 21 percent in 2005–06. The value of Internet income associated with the receipt of orders grew by approximately 40 percent from \$40 billion in 2004–05 to \$57 billion in 2005–06. The survey found that only 9 percent of those businesses with an Internet presence (see **Figure 1**) had online payment capabilities, suggesting a continued reliance on offline means of payments such as COD, cheque, manual/offline credit card processing and money order.

In relation to Australian businesses, the survey data indicated high rates of use of the Internet and web presence, but relatively low rates of e-Commerce generated income suggesting that Australian businesses were not harnessing the full efficiency and productivity benefits of the digital economy.

While statistics suggest that there is a progressive move to increased online purchasing by consumers, the rate of this progress could be accelerated to the benefit of merchants and consumers (OFT (UK) 2007) and the Australian economy by identifying the patterns of usage of payment methods, the barriers and drivers associated with them and the possible actions that can be taken to encourage their greater adoption and diffusion in Australia.

From a theoretical perspective there has been a great deal of empirical work in the field of innovation which spans many disciplines and focuses on both organizational and individual levels. Researchers in the field of innovation adoption agree that an innovation is an idea, a product, a technology or a practice that is perceived as new by members of a social system (Cooper, R. B. & Zmud 1990; Mahajan & Peterson 1985; Rogers & Shoemaker 1971; Zaltman, Duncan & Holbeck 1973). Swanson's (1994) typology of Type III innovations, defined as innovations that are embedded in the core of the business, can be extended to the Internet domain where online payment methods are being enabled by technology development (Kauffman & Walden 2001); require organizational enablers and ongoing business and organization reconfiguration (Chatterjee, Grewal & Sambamurthy 2002); and shape (and are shaped by) the industry environments (Kauffman & Walden 2001; Kowtha & Choon 2001).

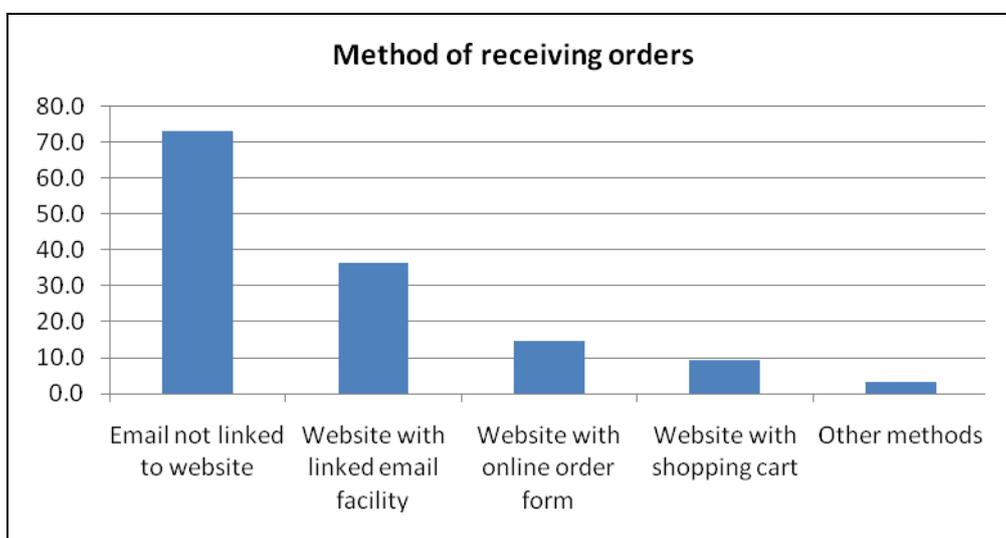


Figure 1: Methods of receiving orders by increasing levels of sophistication (adapted from ABS 2007)

The e-Commerce environment has been dominated by methods of payment customary in offline businesses, and online consumers have, over the years, had to adapt to the use of credit cards and Internet bank accounts to pay for goods and services. However, market, technological and legal developments in recent years have contributed to a surge of innovations and changes in payment methods being offered over the Internet, including the development of new means of making payments and the alteration of existing ones. These alternative ways of paying for goods online have begun to make inroads into the online payments marketplace and given consumers and merchants new options over the traditional methods of payments.

The aim of this study is to identify the influences and challenges associated with the evaluation, selection and adoption of new and existing methods for paying for goods and services by online merchants. The next section clarifies the distinction between traditional and alternative payment methods within the context of this study followed by an in-depth reporting of the cases, a cross-case analysis, and a conclusion that includes some of the limitations of this study and the scope for further research.

## TRADITIONAL AND ALTERNATIVE PAYMENT METHODS

In Australia, online consumers have traditionally been accustomed to paying for goods and services using either credit cards, with transactions processed through online payment gateways or offline via telephone, fax or email communication; Internet bank accounts for electronic funds transfers, direct

debits and BPAY; or offline payment methods such as Cash on Delivery (COD), money orders and cheques. These payment options have been in existence since before the advent of e-Commerce websites and have matured over the years with both consumers and merchants becoming increasingly familiar with their use

However, the methods that online consumers and merchants use for paying and receiving payments for goods and services purchased or sold either offline or over the Internet have been evolving over the years. In addition, the increase in online shopping and the development of new online business models has raised a number of issues with merchants, consumers, governments, financial institutions and their stakeholders. Among these concerns include the level of convenience, security and privacy afforded by these traditional methods of payments. This has prompted the development of alternative payment products, services and protocols to help facilitate the payment process with the intention of offering significant advances over traditional means of payments that aim to improve processing efficiency, functionality and reduce transaction costs (Forner 2003).

Although credit cards and Internet bank accounts have been the most commonly accepted methods of payment in the Australian payments marketplace to date, their dominance does not imply that they are necessarily regarded by consumers and merchants as the ideal way to pay or be paid on the Internet (Walczuch & Duppen 2002). Online merchants and payment providers are beginning to offer a variety of alternative online payment methods including online debit cards, person-to-person payment (P2P) solutions, pre-paid cards and mobile payments.

These alternative payment methods have been developed in response to both consumer demand for an improved online payment experience and merchant need to lower shopping cart abandonment rates, payment processing fees, and raising the appeal of online shopping to specific consumer demographics (Mercator Advisory Group 2007). As consumers shopping and payment habits evolve, the number of online shoppers looking for alternative payment solutions is expected to grow with consumers opting for innovative solutions that offer convenience, ease of use, security from fraud and enhanced buyer protection and greater choice and control (eBillMe 2009).

## **RESEARCH METHODOLOGY**

In light of the competing and conflicting requirements of online merchants and consumers arising out of the payment of purchases an exploratory study was undertaken as part of a larger project to gain insight into the nature and extent of the usage of different payment methods by online businesses and some of the challenges they face as a consequence. Case study interviews of five online merchants were carried out with a representative from each of the businesses. The representatives included an owner, a development manager, a website manager, an accountant and a strategic planning manager. The merchant websites represented distinctly different business models and levels of e-Commerce sophistication.

### **Case study participants**

The search for participants was started by identifying potential online businesses with which the researcher had either personal dealings as a customer; previous contact through a representative of the company; acted as a consultant to the business; or encountered through email campaigns and other media. An introductory email was sent to a list of 78 potential participants explaining the intent of research and that the email could be forwarded to the person most appropriate and competent to respond to the invitation to participate in an interview. The nine that responded favourably were sent a sample of the types of questions by email and four of the respondents decided that they did not feel qualified enough to answer the questions. The remaining five were requested to specify a time convenient to them to be interviewed by telephone. All participants wanted their identity to be confidential and have been labelled A to E to respect their wishes. Table 1 lists the participating online businesses in this study. The level of e-Commerce maturity was rated based on the number of website features identified by the respondents ranging from basic information about the business through to automated links to back-end systems.

Table 1: Case study participants

Case	Business Type	Main Product/Service	Type of goods/services	e-Commerce sophistication
A	Retailer	Grocer	Physical	High
B	Charity	Donations	Service	Medium
C	Manufacturer	Mobility devices	Physical	High
D	Retailer	Books & Software	Physical	Low
E	Retailer	Small goods	Physical	High

## Case study process

The interviews were conducted over a three month period in 2009. The interview questions followed a semi-structured format to ensure that key areas of the research were covered. As suggested by Sutcliffe (1999) and Patmore (1998) the questions were prepared in advance to minimize bias and eliminate asking leading questions on the part of the interviewer. Open-ended questions were used to encourage free participation in the interview process as recommended by Zikmund (2003) and Cooper and Schindler (2001) and closed questions were used to collect demographic information. The interview protocol included questions about the organization, the company's current usage, the challenges faced and their future payment plans.

The interviews were all started with an introduction followed by a brief overview of the objectives of the study. Questions from the interview protocol were asked and, where necessary, the participants were prompted with related key words and phrases to probe for relevant responses and ensure that the interviewees were kept on track. The interviews ranged in length from 35 to 60 minutes. Some of the sessions were tape recorded and, where the respondents were not comfortable with being taped, the interviews were recorded by hand. In some instances further clarification to responses was obtained via email.

## SYNOPSIS OF INTERVIEWS

This section provides an overview of the results of the case study interviews, including a description of the businesses. The focus of the interviews was to determine the types of payment methods being offered, the benefits and challenges they have for the business, and plans to adopt alternative payment methods.

A short description of the organization is provided followed by a discussion on the firm's payment method usage. Any information that is likely to make the identification of the business possible is omitted. The cases are presented in the order in which they were interviewed. Direct quotations from interviewees are presented in italics to support the discussion where relevant.

### Firm A – The Grocer

Firm A is an extension of its grocery stores that have branches in and around Queensland. It provides an online service to households, businesses and other retailers in selected suburbs in the major metropolitan areas. Customers order their groceries through the website and the goods are picked at the company's warehouses and delivered to the customer's delivery address by refrigerated trucks. The company has been in operation for some 10 years. There are around 500 personnel supporting the online service in various capacities that include personal shoppers who pick the products off the warehouse shelves and customer service representatives who deliver the goods to the door. The purpose of establishing an online presence was to offer an alternative distribution channel for customers who cannot or prefer not to visit the physical stores.

Typical individual purchases are in the range of \$200 to \$300 and the company processes an average of 75 000 transactions in a month. A small (and currently, not significant) percentage of orders come from overseas usually on behalf of families based in Australia.

Payment fraud is relatively low largely because the physical address of the customer is known and the delivery of the goods is made in person. Denial of receipt of goods, therefore, is difficult. Also, payment is finalized before delivery or at the time of delivery after in-house identity checks are conducted.

The website displays a privacy and security policy link predominantly on its homepage. The policy explains why customer information is being captured, how the information would be used, who has access to this information and how customers can access their personal details if they wished to. It provides the facility to opt out of direct marketing campaigns and explains the use of cookies and the information they hold. Also on the website are details of the security measures in place regarding encryption, SSL, and the use and storage of credit card numbers.

The website currently supports online ordering through a shopping cart with online payment capabilities and customers are able to register their account details through the website. The need to allow customers to track orders was not considered necessary at this stage, but the payment facility is automatically linked with their back-end accounting systems.

Presently the dominant method of payment is via credit cards. Customers enter their credit card details during the ordering process, but the card authorization and settlement is handled manually after in-house checks and the final picking is completed. The transaction is completed this way because the final bill can vary depending on the availability of certain items. Another option is through mobile EFTPOS (MEFTPOS) where customers pay on receipt of the goods. Credit cards dominate the payment method usage followed by MEFTPOS and accounts based payments.

According to Firm A, its choice of a payment method is primarily based on the needs and demands of customers and the payment instruments with which they are most comfortable or have available to them. These are usually based on the most popular ones in the marketplace.

Other factors that play a part in the choice of methods are the costs associated with implementing and managing the payment infrastructure and the issues of security that impact on their use by customers. *“Ensuring that the transactions can be completed easily, quickly and securely is of paramount concern when it comes to choosing a payment method.”*

On the issue of the importance to the company to offer online and alternative payment methods Firms A's response was: *“Ensuring that the company is paid for the goods it delivers efficiently, reliably and securely is a requirement for any business and providing the payment options that suit the company's and its customers' needs is vital to the survival of the business. The payment options that are provided currently are fairly broad to cover the vast majority of the existing customer base. There are other options that are gaining traction in the marketplace and these are being investigated to determine their viability.”*

Among the alternative payment options Firm A has considered PayPal for the long term, but *“the lack of demand from the existing customer based and the infrastructure costs do not make it an imperative for the short term.”* The potential for Visa and MasterCard Debit card as a payment option was not considered at this point in time, but Verified by Visa and SecureCode were under investigation. *“While there is currently a strong media campaign for the Visa and MasterCard Debit Cards targeted to the young, it will be a while before it gets anywhere near the level of credit card usage.”*

In response to the question on problems related to online payments Firm A said that because there is a time lag between the order and the delivery of the goods the payment details are verified using in-house developed checks which to a large extent have mitigated the potential for fraud to a relatively insignificant level. The company is in the final stages of complying with the Payment Card Industry Data Security Standard (PCI-DSS) requirements. The company complies with the provisions of the Privacy Act.

While the number of chargebacks that the firm experiences is relatively low, mainly attributed to the fact that the catalogue items are usually familiar to customers, care is taken to ensure that customers are aware of the redress mechanisms in place and the contact details are prominently displayed on the website. The delivery of the goods takes place within a day or two and first time customers have a \$750 limit placed on their first order and their personal details are scrutinized and verified before their order is approved. The characteristics of the order are also checked to see if they are not, for example, mainly orders for liquor or cigarettes.

The processes are in place, and were expected to be completed soon, to make the company PCI compliant. The compliance could also impact on customer's confidence in the company's website and

business processes and militate against any future risks of legal claims by conforming with any regulatory requirements set out by government, industry and financial bodies. *“The tokenization of credit card details will help minimize the risk of internal fraud.”*

The credit card processing system in place handles a very large volume of transactions. The average payment value of \$200 poses no problem for the card processing systems to handle economically.

As regards innovativeness and keeping up with technological developments the company sees itself as early adopters of proven technology. *“The use of MEFTPOS is a case in point where our company was amongst the first to implement this as a solution to the problems of offline payments. Compared to our competitors, we consider ourselves ahead in terms of technology uptake, its website features and functionalities, and its implementation of business processes.”* Both the company and its major competitor offer the same payment options to their customers. Some of the smaller competitors offer PayPal for the reason that PayPal’s brand name may help mitigate any consumer confidence fallout that may arise from the absence of the kind of trust that the larger, well-established competitors enjoy.

As regards market reach and presence of payment methods Firm A’s response was that the existing large customer base of credit card users has made it essential to provide this option from the outset. *“However, any shift in attitudes towards alternative payment methods is being monitored closely and the company is prepared to investigate alternatives as they become more and more popular in the marketplace.”* Competitors are also being monitored for anything that they are offering that could give them a competitive advantage.

Firm A aims to raise consumer confidence through upgrading the back-end of the business to ensure PCI DSS compliance. Merchant guidelines on online transactions provided by the Australian Competition and Consumer Commission (ACCC) have been studied to ensure that the company’s website adheres to recommended best practice procedures.

Being a virtual part of the whole company structure, the online business has had to *“ride on the coattails of the credit card payment agreements forged by the company.”* The influence of banks, payment service providers and card associations on payment method decisions has been minimal. The MEFTPOS payment option has provided opportunities to investigate various options with service providers.

### **Firm B – The Charity**

Firm B is a not-for-profit incorporated charity organization engaged in humanitarian relief projects in Australia and overseas. It receives hundreds of donations a month over the Internet, the telephone, through online bank transfers, postal orders and cash. Established in 1994, the organization’s website has been in operation since 2000. There are 12 employees based at their offices in New South Wales and one of the employees was trained to maintain the website.

While the main objective of setting up the website was to communicate their work, the website also proved to be a very efficient and convenient way for people around Australia and overseas to make donations. Donations via the website range from as little as \$2 to thousands of dollars, and they receive an average of some 500 online donations a month which varies over the year depending on the occurrence of disasters, religious festivals and the impact of their marketing campaigns. *“Some months we get a high volume of donations and small donation amounts and other months it’s the reverse – low volumes but large donations.”*

Until recently donors submitted their payment details into a website form which was then processed manually offline using an EFTPOS terminal. *“From what we hear some people were worried about handing their credit card details to us – it’s also a big responsibility keeping their credit card numbers safe”*. The new revamped website now supports secure credit card donations via a payment gateway directly from their website. *“Whereas in the past we had to re-enter the credit card details and follow up the donor when a transaction was declined this system saves us heaps of work – it’s a huge burden off our shoulders.”* However, Firm B found that the technical skills required to integrate the payment gateway into their website was quite considerable and beyond their capabilities and they were required to call in a web developer. Firm B was looking at ways to process small donations online and more cost effectively. *“The credit card transaction fees for small donations are too high and we have to look for a way to reduce these costs.”*

Another urgent issue that is being addressed is providing donors with the capability of making recurring payments online and securely. Donors currently phone in their credit card details and the payments are processed manually at each payment period. *"We have an urgent need to automate this side of the business because many of our donors wish to make monthly donations using their credit cards."*

Plans are underway to incorporate a PayPal donation button as an additional payment option and to take advantage of the discounted rates that PayPal offers for non-profit organizations. *"We also want to encourage other organizations and individuals to incorporate PayPal donation buttons on their websites to collect monies on our behalf"*. It was felt that by offering PayPal and other payment methods the firm could widen its potential audience to include those who already have PayPal accounts as well as those who did not have credit cards or did not want to use credit cards over the Internet.

Being able to provide payment methods that were easily at hand, easy to use and convenient to donors is very important to the organization. *"Many donations are emotional decisions made on the spur of the moment – these can easily disappear with time"*.

### **Firm C – The Manufacturer**

Firm C is a designer and developer of mobility healthcare products for the physically challenged. The company is a sole proprietorship with a single owner-manager who, along with his son, makes both the firm's day-to-day and management decisions. The company began in a small warehouse located in Queensland marketing to re-sellers such as chemists and health care stores. To date, Firm C has commissioned a number of companies in Asia and Australia to manufacture products designed to their specifications and standards.

The initial idea was to service the local area but the demand for its products from individuals, hospitals and medical practitioners from around the country and overseas forced the company to review its business strategies and to consider selling directly to the public while continuing its business relationships with its existing re-sellers. The company took the initiative in 2005 to develop their existing brochure-styled website into a relatively sophisticated e-Commerce site that includes the capability of processing online payments, allowing for product customization and tracking of orders, and marketing parts, products and services to other businesses.

Firm C accepts customer payments via a number of means including COD, cheques, and credit cards over the telephone and online credit cards payments. While credit card payments via email are also accepted and processed manually this method is not encouraged. *"Many people are unhappy giving us their credit card details by email so we accept their orders by email, but then phone them to get their card details"*.

The online credit card processing facility has recently been implemented using the services of a payment gateway. Customers enter their credit card information on a secure hosted page, the credit card transaction is authorized automatically and monies deposited directly into the company's bank account. *"It was quick and easy to set up and we don't have to worry about keeping our customer's credit card details"*.

About 45 percent of their total revenue is consumer business and the rest is business-to-business (B2B) with an increasing number of overseas (mainly from New Zealand, Fiji and the Pacific Islands). Re-sellers get an individualized interface where purchasing managers log on and view catalogues with wholesale pricings. These orders generate transactions of high value ranging from \$2 000 to \$50 000 and the business is currently relying on credit cards and offline payment methods, such as cheques, for these online business transactions, resulting in delays in receiving funds. There has been a recent shift to Internet bank deposits, direct debits and BPAY but all of these methods require the payer to leave the website to conclude the transaction. A payment option that is currently under investigation allows customers to pay for purchases using their Internet banking facilities without having to leave the firm's website.

The number of fraudulent credit card transactions is considered low (as a percentage of their online sales) but with predicted online revenue growth this might become a concern for the business. Concern was also expressed about the vulnerability of the computer systems and steps were in place to solicit the advice of consultants to audit the security of the systems. Firm C has noticed no significant demand from customers to introduce alternative payment methods. *"Our customers seem to be happy with the way things are"*.

### **Firm D – The Bookstore**

Firm D is a campus book store supplying university books and stationery mainly to the student population locally and overseas. The website is managed by the store manager but decisions regarding major enhancements to the operational aspects of the website need higher approval.

Online orders are taken via a shopping cart and a secure payment page. Customers are given the option to either enter their credit card number on the form or fax or phone in their credit card details. The credit card details are processed manually. Freight charges do not show up on the shopping cart and are computed at the point of sale. Customers are given assurances that no credit card details are stored on the company's database. A downloadable order form provides payment options via cheque, money order and bank draft.

While only selected staff members are granted access to information submitted by the online order process, Firm D is concerned about having to handle credit card and other personal details so a business case is being prepared for implementing an independent payment gateway. PayPal, as an alternative payment method, is also under consideration. These moves will help in speeding up and automating the payment handling and processing part of the order processing, and provide options, especially for its customers who might be reluctant to provide their credit card details to the book store or do not have access to credit cards.

There are no provisions for customers to register at the website or to create an account. Returning customers have to enter all their details each time they make a purchase. The website would benefit from more comprehensive assurances about the security mechanisms in place when payment is being made by credit card and what payment guarantees are in place in the event of the fraudulent use of the customer's credit card arising out of transactions made at the shop's website.

### **Firm E – The Discount Retailer**

Firm E is a discount retailer selling a range of merchandise exclusively online. The items for sale include electrical and electronic appliances, stationery, beauty products, tools, DVDs, and related merchandise.

The company offers a range of payment options both offline and online that include popular credit cards, BPAY and Direct Deposits. Cheques are not accepted. All online payments are conducted using digital certificates and customers are assured that their credit card numbers are not stored by the company. *"We are proactive about security - we pay a company to attempt to breach our server security every day"*.

For online credit card payments the customer's details are entered into a secure page at the firm's website and submitted directly and securely via a payment gateway. *"It was a steep learning curve getting this up and running – choosing a provider, setting up and integrating the facility (and) obtaining a merchant account – not even taking into account the fees for each transaction – all part of the cost of doing business, I guess"*. By opting for a hosted payment scheme, the company removed all payment data interaction within their environment.

To pay for an order with BPAY, the customer selects BPAY as their payment method and the company sends the customer an email with a Biller Code and Reference Number. Once the payment is made through the customer's bank, the company is automatically notified and the order is processed.

The website displays the McAfee trust seal to indicate that they abide by best practice procedures in protecting their servers from hackers and other threats, and the TRUSTe trust mark to assure customers that their information and privacy practices are being regularly reviewed for compliance.

The company also offers pre-approved customers the option to purchase goods at its website interest free for 90 days so that they can "buy now, receive goods now, and pay later" without the need for a credit card.

As a solely online company, Firm E sees the need to build long term relationships and trust with its customers as essential to its survival in the e-Commerce environment. Through its security and privacy policies the company has gone to great lengths to assure its customers of the safety and security procedures it has put in place.

Firm E was reluctant to discuss the extent of fraud and chargebacks they were experiencing other than to say that they were constantly reviewing their risk management strategies in order to reduce losses in

revenue and goods. To further reduce chargebacks, the company is investigating the implementation of 3D security schemes, Verified by Visa and MasterCard SecureCode.

While currently focussing on the Australian and New Zealand markets the company sees opportunities in expanding their reach to other overseas countries. *“This presents a new set of problems for us – new fraud and payment challenges, national laws, currency issues and language barriers”*.

## **CROSS-CASE SUMMARY OF INTERVIEW**

Cross-case analysis was used to examine the main themes that emerged from the interviews. Table 2 summarizes the key issues related to payment methods from the merchants' perspective.

Other than The Charity all the other businesses were selling tangible products that had to be delivered to a physical address. In the case of The Charity, there was no exchange of money for goods purchased. Also, there is a time lag between payment and delivery, giving these companies an opportunity to authenticate and obtain authorization for the payment before executing the order. A company selling immediately downloadable digital goods (eBooks, music, games, software etc.) would have a more restrictive choice of payment methods to ensure that payment is received soon after the order is placed and before the product is consumed.

All firms had as a minimum a secure order form and shopping cart. Those firms that offered online credit cards as a payment option used the services of a payment gateway, thereby averting the responsibility of securing credit card details on their premises. Firms who opt for managing most of the payment processing in-house would have the added responsibility of obtaining PCI DSS compliance.

Although credit cards are the dominant payment instrument The Discount Retailer reported an increasing use of PayPal among its customers. Most of the businesses reported low levels of fraud and chargebacks as a percentage of total online sales. Actual figures related to fraud and chargebacks were difficult to obtain from the interviewees, but concerns about fraud and chargebacks were specifically raised by three of the five firms.

Overseas sales were relatively low compared to domestic purchases and the potential impact on their payment strategies was highlighted by The Discount Retailer who were looking to expand into this market. Only The Grocer retained credit card details on their premises but was well aware of the risks of doing so. The other firms preferred to devolve this responsibility to the payment service providers. PayPal was being investigated by three of the four firms who were not currently offering it as an alternative payment option.

## **CONCLUSION**

This paper presented the findings of the case study interviews with five online merchants. The primary aim of the interviews was to understand the payments environment from the perspective of the merchant. The conclusions drawn from an analysis of the interviews suggest that there may be competing and conflicting demands between merchants and consumers when it comes to the payment process. For example, a merchant's need to implement safeguards to protect themselves from fraud could be at variance with the customer's desire for a quick and user-friendly payment process; or a merchant's efforts to collect personal information for the purposes of security, marketing and personalization could well conflict with the customer's desire for privacy and, in some cases, anonymity. The case studies also highlighted some of the business imperatives that drive the implementation of payment methods for online purchases such as the need for online businesses to use methods that support their revenue models while at the same time affording them appropriate security, convenience, cost effectiveness and coverage. The study shows that merchants recognize the need to respond to the changing payments landscape and to the increasing demand from their customers for alternative payment methods like PayPal. Regulatory standards recently established by credit card industry for payment and personal data protection are also having a significant impact on how merchants view their obligations to protect themselves and their customers.

### **Limitations and Future Research**

The dynamic nature of the payments landscape and the rapidly changing demands of online consumers and merchants make any findings arising from research in this field subject to interpretation within the context of the study time-frame. By 2012, the estimate is that online payments will gross US\$355

billion in value with alternative payments holding a 30 percent market share (Janakiraman 2009). With increased market acceptance, alternative payments may no longer be 'alternative' but could become mainstream consumer payment methods in the future. However, the challenges, facilitators and underlying theories identified in this research, in relation to the adoption of payment solutions as innovations, should continue to hold true.

A longitudinal study of the online merchants could, therefore, provide further insight into how the changing online payments landscape has impacted on their business processes and, coupled with a study on consumer payment behaviour, identify key external factors that influence their decisions to adopt new payment methods more readily.

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Table 2: Payments profiles of case study interviews

	<b>FIRM A</b>	<b>FIRM B</b>	<b>FIRM C</b>	<b>FIRM D</b>	<b>FIRM E</b>
<b>Business Type</b>	Retailer Online grocer	Charity Donations	Manufacturer Mobility devices	Retailer Books & Software	Retailer Small goods
<b>Website payments capability</b>	1. Shopping cart 2. Secure order form 3. Customer registration 4. Back end integration	1. Shopping cart 2. Secure order form 3. Payment service provider	1. Account registration 2. Shopping cart 3. Secure order form 4. Hosted payment gateway	1. Shopping cart 2. Secure order form	1. Account registration 2. Shopping cart 3. Hosted payment gateway 4. Order tracking 5. Back end integration
<b>Volume of online transactions</b>	75 000/month	500/month	800-1200/month	Seasonal	Millions/month
<b>Type of goods/service</b>	Physical	Service	Service	Physical	Physical
<b>Payment Options</b>	1. Credit cards (Store card, MasterCard, Visa, Diners, American Express) – processed offline 2. Mobile EFTPOS	1. Credit cards (MasterCard, Visa) – processed online by payment service provider 2. Telephone 3. Direct bank deposit 4. Postal order 5. Cash	1. Credit cards (MasterCard, Visa) – processed online by payment gateway 2. Credit cards via telephone and email 3. Cheques 4. Postal orders 5. International and local bank transfers	1. Credit cards (MasterCard, Visa, American Express) – processed manually 2. Credit cards via telephone and email 3. Cheques 4. Money order 5. Bank draft	1. Credit cards (MasterCard, Visa) – hosted payments 3. BPAY 4. Direct deposits 5. Pay later
<b>Most popular payment method/s</b>	Credit cards	Credit cards	Direct deposit, credit cards	Credit cards	Credit cards, PayPal
<b>Range of payment values</b>	\$10 to \$1000	From \$ 2 to around \$5000	\$250 - \$10 000+	\$20-\$800	\$5-\$5000
<b>Average payment value</b>	\$200-\$300	\$250	\$500	\$150	\$50
<b>Online vs. offline payments</b>	100 percent	50 percent online	30-40 percent online	30 percent online	100 percent online
<b>Overseas sales volume</b>	Low	10 percent	15 percent (and increasing annually)	20 percent	5 percent
<b>Privacy and security policies</b>	Adequate	Minimal	Adequate	Minimal	Comprehensive
<b>PCI DSS compliance</b>	In progress	No	No	N/A	N/A
<b>Fraud</b>	Low	Very low	Low	Low	?
<b>Chargebacks</b>	Low	Very low	Low	Low	?
<b>Storage of payment details</b>	Secure in-house database	Payment service provider	Payment service provider	On print	Payment service provider
<b>Payment options considered</b>	PayPal, Mobile, VbV and SecureCode, online debit cards	Recurring payments, PayPal, Mobile, pre-paid cards	Direct Internet transfers from website	Payment gateway, PayPal	VbV and SecureCode, online debit cards

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